



Commission on Accreditation of Allied Health Education Programs

Standards and Guidelines for the Accreditation of Educational Orthoptic Fellowship Programs

Standards initially adopted in 2022

Adopted by the
American Orthoptic Council®
American Academy of Pediatrics
Committee on Accreditation of Orthoptic Fellowship Programs
Commission on Accreditation of Allied Health Education Programs

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) accredits programs upon the recommendation of the Committee on Accreditation of Orthoptic Fellowship Programs (CoA-OFP).

These accreditation **Standards and Guidelines** are the minimum standards of quality used in accrediting programs that prepare individuals to enter the orthoptic profession. Standards are the minimum requirements to which an accredited program is held accountable. Guidelines are descriptions, examples, or recommendations that elaborate on the Standards. Guidelines are not required but can assist with the interpretation of the Standards.

Standards are printed in regular typeface in outline form. *Guidelines* are printed in italic typeface in narrative form.

Preamble

The Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the American Academy of Pediatrics (AAP), the American Orthoptic Council (AOC®), and the Committee on Accreditation of Orthoptic Fellowship Programs (CoA-OFP) cooperate to establish, maintain and promote appropriate standards of quality for educational fellowship programs in orthoptics and to provide recognition for educational programs that meet or exceed the minimum standards outlined in these accreditation **Standards and Guidelines**. Lists of accredited programs are published for the information of students, employers, educational institutions and agencies, and the public.

These **Standards and Guidelines** are to be used for the development, evaluation, and self-analysis of orthoptic fellowship programs. Site review teams assist in the evaluation of a program's relative compliance with the accreditation Standards.

Description of the Profession

Orthoptics is well-established within the field of ophthalmology, specifically the subspecialty fields of pediatric ophthalmology, pediatric and adult strabismus, and neuro-ophthalmology. Orthoptics is recognized as a profession by the Department of Labor. Orthoptists are uniquely skilled in diagnostic and therapeutic techniques and have been working in the United States since the 1930s. Orthoptists evaluate and help manage patients with strabismus, abnormal binocular vision, nystagmus, and other eye

movement abnormalities and disorders of visual development in patients of all ages from the very young infant to the older population.

Orthoptics is a versatile profession with opportunities and responsibilities in a variety of clinical and community settings. Orthoptists may serve their communities working in private ophthalmology practices and in community visual screenings of pre-school children. Others may work in hospitals or departments of ophthalmology in medical university settings with involvement in patient care, academic endeavors, teaching of residents, both medical and orthoptic students, and in clinical research and publications. Orthoptists may serve as directors or advisors of state and local vision screening programs and orthoptic fellowship programs.

Orthoptists commonly work in pediatric ophthalmology settings but may also work in neuro-ophthalmology and general ophthalmology clinics participating in the medical care of adults with double vision and other eye muscle disorders. Orthoptists serve patients of all ages, but because of the nature of binocular disorders, many patients are children. Care of adult patients with strabismus and children with developmental delays and complex medical conditions is often both challenging and rewarding. The orthoptist is often that member of the ophthalmic team who takes over the responsibility of serving as the liaison between the patient or caregivers and the ophthalmologist in explaining, carrying out, and monitoring treatment plans.

I. Sponsorship

A. Sponsoring Educational Institution

A sponsoring institution must be at least one of the following:

1. A post-secondary academic institution accredited by an institutional accrediting agency that is recognized by the U.S. Department of Education and must be authorized under applicable law or other acceptable authority to provide a post graduate program, which awards a minimum of a certificate at the completion of the program.
2. A foreign post-secondary academic institution acceptable to CAAHEP, which is authorized under applicable law or other acceptable authority to provide a post-graduate program, which awards a minimum of a certificate at the completion of the program.
3. A hospital or medical center, accredited by a healthcare accrediting agency or equivalent that is recognized by the U.S. Department of Health and Human Services, and authorized under applicable law or other acceptable authority to provide healthcare, and authorized under applicable law or other acceptable authority to provide the post-graduate program, which awards a minimum of a certificate at the completion of the program.
4. A branch of the United States Armed Forces or other Federal agency that provides a post-graduate program, which awards a minimum of a certificate at the completion of the program.

B. Consortium Sponsor

1. A consortium sponsor is an entity consisting of two or more members that exists for the purpose of operating an educational program. In such instances, at least one of the members of the consortium must meet the requirements of a sponsoring educational institution as described in I.A.
2. The responsibilities of each member of the consortium must be clearly documented in a formal affiliation agreement or memorandum of understanding, which includes governance and lines of authority.

C. Responsibilities of Sponsor

1. The Sponsor must ensure that the provisions of these **Standards and Guidelines** are met.
2. The Sponsor must ensure that students matriculating into an orthoptic fellowship program have obtained a minimum of a bachelor's degree.

II. Program Goals

A. Program Goals and Outcomes

There must be a written statement of the program's goals and learning domains consistent with and responsive to the demonstrated needs and expectations of the various communities of interest served by the educational program. The communities of interest that are served by the program must include, but are not limited to, students, graduates, faculty, sponsor administration, employers, physicians, and the public.

Program-specific statements of goals and learning domains provide the basis for program planning, implementation, and evaluation. Such goals and learning domains must be compatible with the mission of the sponsoring institution(s), the expectations of the communities of interest, and nationally accepted standards of roles and functions. Goals and learning domains are based upon the substantiated needs of health care providers and employers, and the educational needs of the students served by the educational program.

B. Appropriateness of Goals and Learning Domains

The program must regularly assess its goals and learning domains. Program personnel must identify and respond to changes in the needs and/or expectations of its communities of interest.

An advisory committee, which is representative of at least each of the communities of interest named in these **Standards**, must be designated and charged with the responsibility of meeting at least annually, to assist program and sponsor personnel in formulating and periodically revising appropriate goals and learning domains, monitoring needs and expectations, and ensuring program responsiveness to change.

Advisory committee meetings may include participation by synchronous electronic means.

C. Minimum Expectations

The program must have the following goal defining minimum expectations: "To prepare competent entry-level orthoptists in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains."

Programs adopting educational goals beyond entry-level competence must clearly delineate this intent and provide evidence that all students have achieved the basic competencies prior to entry into the field.

*Nothing in this **Standard** restricts programs from formulating goals beyond entry-level competence.*

III. Resources

A. Type and Amount

Program resources must be sufficient to ensure the achievement of the program's goals and outcomes. Resources must include but are not limited to faculty; clerical and support staff; curriculum; finances; offices; classroom, laboratory, and ancillary student facilities; clinical affiliates; equipment; supplies; computer resources; instructional reference materials, and faculty/staff continuing education.

B. Personnel

The sponsor must appoint sufficient faculty and staff with the necessary qualifications to perform the functions identified in documented job descriptions and to achieve the program's stated goals and outcomes.

1. Program Director

a. Responsibilities

The Program Director must:

- 1) assure achievement of the program's goals and outcomes;
- 2) be responsible for all aspects of the program, including organization, administration and continuous assessment and improvement of the program;
- 3) ensure the competence of each graduate of the program in the cognitive, psychomotor, and affective domains;
- 4) engage in cooperative involvement with the Medical Director to achieve the goals of the program;
- 5) review the progress of each student throughout the program, and assist in the determination of appropriate corrective measures, when necessary; and
- 6) provide supervision, administration and coordination of the instructional staff in the academic and practical phases of the educational program.

Administrative and supervisory responsibilities of the Program Director should be recognized as a departmental assignment. The amount of time devoted to these responsibilities should be consistent with departmental or institutional policies.

b. Qualifications

The Program Director must possess:

- 1) current U.S. certification as an orthoptist; and
- 2) work-related experience as a certified orthoptist.

2. Medical Director

a. Responsibilities

The Medical Director must:

- 1) provide guidance to ensure that the medical components of the curriculum meet currently acceptable performance standards;
- 2) engage in cooperative involvement with the Program Director;
- 3) ensure the effectiveness and quality of any Medical Director responsibilities delegated to another qualified physician;
- 4) ensure educational interaction of physicians with students and work with the program director to periodically review student progress throughout the program;
- 5) assist in the determination of appropriate corrective measures; and
- 6) ensure the competence of each graduate of the program in the cognitive, psychomotor, and affective domains.

The role of the Medical Director should be defined in writing by the program to include but not be limited to liaison between physician community and program, and to participate as appropriate in other activities to promote program evaluation.

b. Qualifications

The Medical Director must:

- 1) be a physician currently licensed and authorized to practice in the location of the program; and

- 2) be board certified in ophthalmology and have successfully completed a nationally recognized fellowship in pediatric ophthalmology and strabismus or neuro-ophthalmology in the United States or Canada.

3. Faculty and Instructional Staff

a. Responsibilities

In each location where students are assigned for didactic or clinical instruction or supervised clinical practice, there must be instructional faculty designated to coordinate supervision and provide frequent assessments of the students' progress in achieving acceptable program requirements.

All faculty members, regardless of the extent of their participation, must be familiar with the goals of the program.

b. Qualifications

Instructors must possess:

- 1) credential(s) that are appropriate for teaching the designated content; and
- 2) knowledge in the subject matter by virtue of training or experience teaching their assigned subjects.

C. Curriculum

1. The curriculum must ensure the achievement of program goals and learning domains. Instruction must be an appropriate sequence of classroom and clinical activities. Instruction must be based on a clearly written course syllabus that includes course descriptions, course objectives, methods of evaluation, topic outlines, and competencies required for graduation.

The program must demonstrate by comparison that the curriculum offered meets or exceeds the content and competency-based requirements specified in Appendix B of these **Standards**.

Programs should anticipate a two-year fellowship experience for each candidate, making allowances for advanced standing students.

2. The program must set and require minimum numbers of patient encounters for each of the required patients and conditions listed in these Standards, and at least annually evaluate and document that the established program minimums are adequate to achieve entry-level competency.

The program's minimum number of patient encounters should be equal to or greater than the number required to be eligible for a US based orthoptics credential examination.

D. Resource Assessment

The program must, at least annually, assess the appropriateness and effectiveness of the resources described in these **Standards**. The results of resource assessment must be the basis for ongoing planning and appropriate change. An action plan must be developed when deficiencies are identified in the program resources. Implementation of the action plan must be documented in writing and results measured by ongoing resource assessment.

IV. Student and Graduate Evaluation/Assessment

A. Student Evaluation

1. Frequency and Purpose

Evaluation of each student must be conducted on a recurring basis and with sufficient frequency to provide both the student and program faculty with valid and timely indications of

the student's progress toward and achievement of the competencies and learning domains stated in the curriculum.

2. Documentation

- a. Records of student evaluations must be maintained in sufficient detail to document learning progress and achievements, including all program required minimum competencies in all learning domains in the didactic and clinical experience phases of the program.
- b. The program must track and document that each student successfully meets each of the program established minimum patient/skill requirements according to patient age range, chief complaint, diagnoses and treatment modalities.

B. Outcomes

1. Outcomes Assessment

The program must periodically assess its effectiveness in achieving its stated goals and learning domains. The results of this evaluation must be reflected in the review and timely revision of the program.

Outcomes assessments must include but are not limited to national credentialing examination(s) performance, programmatic retention/attrition, graduate satisfaction, employer satisfaction, job (positive) placement, and programmatic summative measures. The program must meet the outcomes assessment thresholds.

"Job (positive) placement" indicates that the graduate is employed full or part-time in the profession or in a related field, or continuing their education, or serving in the military. A related field is one in which the individual is using cognitive, psychomotor, and affective competencies acquired in the educational program.

Participation and pass rates on national credentialing examination(s) performance may be considered in determining whether a program meets the designated threshold.

2. Outcomes Reporting

The program must periodically submit to the CoA-OFP the program goal(s), learning domains, evaluation systems (including type, cut score, and appropriateness), outcomes, its analysis of the outcomes, and an appropriate action plan based on the analysis.

Programs not meeting the established thresholds must begin a dialogue with the CoA-OFP to develop an appropriate plan of action to respond to the identified shortcomings.

V. Fair Practices

A. Publications and Disclosure

1. Announcements, catalogs, publications, and advertising must accurately reflect the program offered.
2. At least the following must be made known to all applicants and students: the sponsor's institutional and programmatic accreditation status as well as the name, mailing address, web site address, and phone number of the accrediting agencies; admission policies and practices, including technical standards; policies on advanced placement, transfer of credits, and credits for experiential learning; number of credits required for completion of the program; tuition/fees and other costs required to complete the program; policies and processes for withdrawal and for refunds of tuition/fees.

3. At least the following must be made known to all students: academic calendar, student grievance procedure, criteria for successful completion of each segment of the curriculum and for graduation, and policies and processes by which students may perform clinical work while enrolled in the program.
4. The sponsor must maintain, and make available to the public, current and consistent summary information about student/graduate achievement that includes the results of one or more of the outcomes assessments required in these **Standards**.

The sponsor should develop a suitable means of communicating to the communities of interest the achievement of students/graduates (e.g., through a website or electronic or printed documents).

B. Lawful and Non-discriminatory Practices

All activities associated with the program, including student and faculty recruitment, student admission, and faculty employment practices, must be non-discriminatory and in accordance with federal and state statutes, rules, and regulations. There must be a faculty grievance procedure made known to all paid faculty.

C. Safeguards

The health and safety of patients, students, faculty, and other participants associated with the educational activities of the students must be adequately safeguarded.

All activities required in the program must be educational, and students must not be substituted for staff.

D. Student Records

Satisfactory records must be maintained for student admission, advisement, counseling, and evaluation. Grades and credits for courses must be recorded on the student transcript and permanently maintained by the sponsor in a safe and accessible location.

E. Substantive Change

The sponsor must report substantive changes as described in Appendix A to the CAAHEP/CoA-OFP in a timely manner.

F. Agreements

There must be a formal affiliation agreement or memorandum of understanding between the sponsor and all other entities that participate in the education of the students describing the relationship, roles, and responsibilities of the sponsor and that entity.

APPENDIX A

Application, Maintenance and Administration of Accreditation

A. Program and Sponsor Responsibilities

1. Applying for Initial Accreditation

- a. The chief executive officer or an officially designated representative of the sponsor completes a "[Request for Accreditation Services](#)" form and returns it electronically or by mail to:

Committee on Accreditation of Orthoptic Fellowship Programs
c/o CAAHEP
9355 – 113thSt. N #7709, Seminole, FL 33775

The "Request for Accreditation Services" form can be obtained from the [CAAHEP website](#).

Note: There is **no** CAAHEP fee when applying for accreditation services; however, individual committees on accreditation may have an application fee.

- b. The program undergoes a comprehensive review, which includes a written self-study report and an on-site review.

The self-study instructions and report form are available from the Committee on Accreditation of Orthoptic Fellowship Programs (CoA-OFP). The on-site review will be scheduled in cooperation with the program and the CoA-OFP once the self-study report has been completed, submitted, and accepted by the CoA-OFP.

2. Applying for Continuing Accreditation

- a. Upon written notice from the Committee on Accreditation of Orthoptic Fellowship Programs, the chief executive officer or an officially designated representative of the sponsor completes a "[Request for Accreditation Services](#)" form, and returns it electronically or by mail to:

Committee on Accreditation of Orthoptic Fellowship Programs
c/o CAAHEP
9355 – 113thSt. N #7709, Seminole, FL 33775

The "Request for Accreditation Services" form can be obtained from the [CAAHEP website](#).

- b. The program may undergo a comprehensive review in accordance with the policies and procedures of the CoA-OFP.

If it is determined that there were significant concerns with the conduct of the on-site review, the sponsor may request a second site visit with a different team.

After the on-site review team submits a report of its findings, the sponsor is provided the opportunity to comment in writing and to correct factual errors prior to the CoA-OFP in forwarding a recommendation to CAAHEP.

3. Administrative Requirements for Maintaining Accreditation

- a. The program must inform the CoA-OFP and CAAHEP within a reasonable period of time (as defined by the committee on accreditation and CAAHEP policies) of changes in chief executive officer, dean of health professions or equivalent position, and required program personnel (Refer to Standard III.B.).
- b. The sponsor must inform CAAHEP and the CoA-OFP of its intent to transfer program sponsorship. To begin the process for a Transfer of Sponsorship, the current sponsor must submit a letter (signed by the CEO or designated individual) to CAAHEP and the CoA-OFP that it is relinquishing its sponsorship of the program. Additionally, the new sponsor must submit a "Request for Transfer of Sponsorship Services" form. The CoA-OFP has the discretion of requesting a new self-study report with or without an on-site review. Applying for a transfer of sponsorship does not guarantee that the transfer will be granted.
- c. The sponsor must promptly inform CAAHEP and the CoA-OFP of any adverse decision affecting its accreditation by recognized institutional accrediting agencies and/or state agencies (or their equivalent).
- d. Comprehensive reviews are scheduled by the CoA-OFP in accordance with its policies and procedures. The time between comprehensive reviews is determined by the CoA-OFP and based on the program's on-going compliance with the Standards, however, all programs must undergo a comprehensive review at least once every ten years.
- e. The program and the sponsor must pay CoA-OFP and CAAHEP fees within a reasonable period of time, as determined by the CoA-OFP and CAAHEP respectively.
- f. The sponsor must file all reports in a timely manner (self-study report, progress reports, probation reports, annual reports, etc.) in accordance with CoA-OFP policy.
- g. The sponsor must agree to a reasonable on-site review date that provides sufficient time for CAAHEP to act on an CoA-OFP accreditation recommendation prior to the "next comprehensive review" period, which was designated by CAAHEP at the time of its last accreditation action, or a reasonable date otherwise designated by the CoA-OFP.

Failure to meet any of the aforementioned administrative requirements may lead to administrative probation and ultimately to the withdrawal of accreditation. CAAHEP will immediately rescind administrative probation once all administrative deficiencies have been rectified.

4. Voluntary Withdrawal of a CAAHEP- Accredited Program

Notification of voluntary withdrawal of accreditation from CAAHEP must be made by the Chief Executive Officer or an officially designated representative of the sponsor by writing to CAAHEP indicating: the desired effective date of the voluntary withdrawal, and the location where all records will be kept for students who have completed the program.

5. Requesting Inactive Status of a CAAHEP- Accredited Program

Inactive status for any accredited program may be requested from CAAHEP at any time by the Chief Executive Officer or an officially designated representative of the sponsor writing to CAAHEP indicating the desired date to become inactive. No students can be enrolled or matriculated in the program at any time during the time period in which the

program is on inactive status. The maximum period for inactive status is two years. The sponsor must continue to pay all required fees to the CoA-OFP and CAAHEP to maintain its accreditation status.

To reactivate the program the Chief Executive Officer or an officially designated representative of the sponsor must provide notice of its intent to do so in writing to both CAAHEP and the CoA-OFP. The sponsor will be notified by the CoA-OFP of additional requirements, if any, that must be met to restore active status.

If the sponsor has not notified CAAHEP of its intent to re-activate a program by the end of the two-year period, CAAHEP will consider this a “Voluntary Withdrawal of Accreditation.”

B. CAAHEP and Committee on Accreditation Responsibilities – Accreditation Recommendation Process

1. After a program has had the opportunity to comment in writing and to correct factual errors on the on-site review report, the CoA-OFP forwards a status of public recognition recommendation to the CAAHEP Board of Directors. The recommendation may be for any of the following statuses: initial accreditation, continuing accreditation, transfer of sponsorship, probationary accreditation, withhold of accreditation, or withdrawal of accreditation.

The decision of the CAAHEP Board of Directors is provided in writing to the sponsor immediately following the CAAHEP meeting at which the program was reviewed and voted upon.

2. Before the CoA-OFP forwards a recommendation to CAAHEP that a program be placed on probationary accreditation, the sponsor must have the opportunity to request reconsideration of that recommendation or to request voluntary withdrawal of accreditation. The CoA-OFP's reconsideration of a recommendation for probationary accreditation must be based on conditions existing both when the committee arrived at its recommendation as well as on subsequent documented evidence of corrected deficiencies provided by the sponsor.

The CAAHEP Board of Directors' decision to confer probationary accreditation is not subject to appeal.

3. Before the CoA-OFP forwards a recommendation to CAAHEP that a program's accreditation be withdrawn or that accreditation be withheld, the sponsor must have the opportunity to request reconsideration of the recommendation, or to request voluntary withdrawal of accreditation or withdrawal of the accreditation application, whichever is applicable. The CoA-OFP's reconsideration of a recommendation of withdraw or withhold accreditation must be based on conditions existing both when the CoA-OFP arrived at its recommendation as well as on subsequent documented evidence of corrected deficiencies provided by the sponsor.

The CAAHEP Board of Directors' decision to withdraw or withhold accreditation may be appealed. A copy of the CAAHEP “Appeal of Adverse Accreditation Actions” is enclosed with the CAAHEP letter notifying the sponsor of either of these actions.

At the completion of due process, when accreditation is withheld or withdrawn, the sponsor's Chief Executive Officer is provided with a statement of each deficiency. Programs are eligible to re-apply for accreditation once the sponsor believes that the program is in compliance with the accreditation Standards.

Note: Any student who completes a program that was accredited by CAAHEP at any time during his/her matriculation is deemed by CAAHEP to be a graduate of a CAAHEP-accredited program.

Appendix B

Core Curriculum for Orthoptic Fellowship Educational Programs Professional comportment, didactic curricula and clinical competency

Appendix B does not contain the complete curriculum content guide required to demonstrate compliance with Standard III.C. For complete information, refer to the *Syllabus of Orthoptics and Clinical Skills Competencies* published by the American Orthoptic Council.

A. Professional Comportment

Upon successful completion of the program, the student must be able to demonstrate the ability to:

1. Protect their profession and their patients by practicing within the scope of their certification.
2. Merit trust, confidence and respect of their professional peers and the general public.
3. Exemplify the role of the orthoptist in providing ethical patient-oriented care in clinical practice.
4. Understand and appreciate the scope of practice of the certified orthoptist and the organizations and documents that guide practice within the profession.
5. Comprehend and demonstrate knowledge of the collaborative role of the team of orthoptist and ophthalmologist in providing patient centered care.
6. Document pertinent information that supports the clinical findings and treatment plans.
7. Carry out and monitor treatment options including but not limited to amblyopia treatment and appropriate use of prisms and orthoptic exercises.
8. Demonstrate proficiency in the clinical and technical procedures required of an orthoptist in the delivery of patient care.
9. Maintain appropriate patient confidentiality.

B. Professional/Personal Development

Upon successful completion of the program, the student must be able to demonstrate the ability to:

1. Complete the essential elements of the patient examination.
2. Comply with practice management plans, policies and procedures.
3. Possess professional empathy, responsibility, ethics and written communication skills to effectively interact with patients, care givers and others along the continuum of care.
4. Establish a comfortable and professional rapport with patients.
5. Interact with patients and care givers in a manner that shows sensitivity to cultural, psychosocial, age, gender, disability and economic status of the person(s) involved.

C. Clinical Competencies

1. Show proficiency in assessment and recording of patient history:
 - a. Investigate chief complaint
 - b. Investigate ocular history
 - c. Investigate relevant medical history
2. Demonstrate and document assessment of visual acuity; qualitative and quantitative tests and investigation of decreased acuity must include:
 - a. Optotype testing appropriate for age or developmental level with appropriate occlusion of each eye
 - b. Crowding phenomenon with use of crowding bars around linear or isolated optotypes
 - c. Distance and near acuity testing
 - 1) with pinhole
 - 2) comparing monocular and binocular testing in patients with latent and manifest nystagmus
 - 3) with use of a translucent occluder or high plus lens in patients with nystagmus
 - 4) with neutral density filter

- d. Brückner (simultaneous red reflex) Test
 - e. Fixation preference such as CSM, CSUM and UCUSUM notations
 - f. Induced Tropia Test
 - g. Familiarity with preferential looking tests such as Teller Acuity Cards
 - h. Understanding of basic electrophysiology testing and indications for and limitations of ERG and VEP; indications for OCT and contrast sensitivity testing
 - i. Assessment of Visual Fields with various equipment and testing parameters
 - j. Familiarity with screening and diagnostic testing for color vision defects
 - k. Significance and indications for assessment of aniseikonia
3. Be able to discuss the pathophysiology and clinical assessment of amblyopia including risk factors, treatment options and prognosis to include:
 - a. Occlusion therapy techniques, appropriate dosing and follow up
 - b. Optical penalization
 - c. Pharmacologic penalization
 - d. Dichoptic therapy methods
 4. Demonstrate the assessment of binocular vision and be able to discuss which tests to choose to best evaluate, interpret and document the significant findings in the following parts of the exam; tests should include but not be limited to Bagolini lenses, after-image testing and haploscopic instruments including amblyoscope or synoptophore.
 - a. Sensory fusion
 - b. Motor fusion
 - c. Stereopsis
 - d. Retinal correspondence
 - e. Diplopia
 - f. Suppression
 - g. Central loss of fusion
 5. Show understanding and ability to test, interpret, diagnose, manage, and document sensory and motor defects to include but not be limited to:
 - a. Hirschberg and Krimsky tests
 - b. Performance of the 4⁺ base-out test
 - c. Worth 4 dot test at distance and near
 - d. Titmus, Randot and Lang stereo tests
 - e. Bangerter Foil and Red Filter bars
 - f. Phorias, intermittent and manifest deviations
 - g. Horizontal, vertical, and torsional deviations
 - h. Cover tests: SPCT, PCT, ACT, in diagnostic and cardinal positions of gaze
 - i. Diplopia tests including red filter, Lancaster red-green and Hess screen
 - 1) Maddox rod testing
 - 2) Double Maddox rod testing
 - 3) OKN testing
 - 4) NPC (near point of convergence)
 - 5) NPA (near point of accommodation)
 - 6) Horizontal and vertical fusional amplitudes
 - 7) Several additional clinical methods to assess cyclotorsion including synoptophore or amblyoscope
 6. Demonstrate ability to detect, assess, quantify, and document eye alignment/misalignment
 - a. Assessment and documentation of ductions and versions
 - b. Documentation of A or V patterns
 - c. Assessment of abnormal head positions
 - d. Significance of distance-near disparity
 - e. Ability to determine the AC/A ratio by the gradient and heterophoric methods

- f. Ability to give examples of how the AC/A ratio is useful in the evaluation and management of strabismus
- 7. Demonstrate knowledge of formulating specific treatment plans; understand goals and risks of implementation including:
 - a. Management of refractive errors and their relationship to fixation and ocular alignment
 - 1) the role of accommodation
 - 2) the use of over minus lenses in patients with exodeviations
 - 3) the use of bifocals in patients with accommodative esotropia
 - b. Use of prisms to restore binocular single vision
 - c. Identification of patients to treat with anti-suppression alternate occlusion
 - d. Identification of patients who could benefit from improving fusional amplitudes
 - e. Management of various forms of amblyopia therapy
- 8. Demonstrate knowledge of strategies for monitoring patient compliance with prescribed treatment as well as recognizing when it is time to alter or suspend treatment.
- 9. Recognize and demonstrate how to test, interpret, differentiate, and document paretic and restrictive strabismus with considerations of:
 - a. Versions and ductions
 - b. Doll's head maneuver
 - c. Bell's phenomenon
 - d. Differential IOP
 - e. Saccadic velocity testing
 - f. Forced duction testing
 - g. Diplopia field testing
 - h. Lancaster red-green or Hess-Lees Screen testing
- 10. Determine how to best evaluate and document pre-operative and post-operative findings and discuss their related significance and management.
 - a. Determine fusion potential
 - b. Demonstrate an understanding of the use of Botox pre- or post-operatively
 - c. Carry out measurements of target angle and range of single binocular vision
 - d. Perform and document diplopia fields on the Goldmann perimeter
- 11. Recognize and discuss saccadic and pursuit eye movements and the significance of each.
- 12. Demonstrate an ability to evaluate different forms of monocular and binocular nystagmus with respect to:
 - a. Latent and manifest presentations
 - b. Frequency and latency of waveforms in both jerk and pendular nystagmus
 - c. Vertical, horizontal, rotary, or mixed oscillations
 - d. Presence of dampening or null point with gaze positions
 - e. Abnormal head positions
- 13. Demonstrate the ability to assess eyelid position and perform measurements of ptosis.
- 14. Demonstrate measurement of interpupillary distance and globe position measured with an exophthalmometer.
- 15. Recognize and document abnormalities of the face, orbit and cranium.
- 16. Demonstrate lensometry to determine the spherical and cylindrical power and axis of single and multifocal lenses.
 - a. Determine and document the power of ground in prism and the appropriate reading of the base in, base out and/or base up or down orientation

- b. Determine the presence and power of induced prism
- 17. Demonstrate ability to assess and understand the significance of evaluating direct, consensual and near pupillary responses. Understand the structure and significance of pupillary anomalies including:
 - a. Hippus
 - b. Physiologic anisocoria
 - c. Use of sympathetic and parasympathetic pharmacologic testing
 - d. Horner syndrome
 - e. Paradoxical pupillary response
 - f. APD (afferent pupillary defect)
- 18. Familiarity with examination of ocular adnexae and anterior segment with attention to the lids, conjunctiva, cornea, anterior chamber, iris and lens.
- 19. Ability to assess and determine refractive errors with retinoscopy and refinement.
 - a. Demonstrate understanding of the significance between cycloplegic and non-cycloplegic and manifest refractions
 - b. Choose best method (loose lenses, rack, phoropter) based on patient's age, ability and cooperation
- 20. Ability to measure and document accommodation both monocularly and binocularly using various methods including the Prince Rule.
 - a. Ability to recognize the importance of the near point of accommodation
 - b. Ability to demonstrate the evaluation of accommodative facility and dynamic retinoscopy
- 21. Ability to recognize when an urgent referral to the ophthalmologist is indicated.

D. Basic Science Content

The curriculum must include the following basic science topics:

- 1. Anatomy including extraocular muscles
- 2. Neuroanatomy as it pertains to the visual system.
- 3. Sensory physiology and pathology.
- 4. Motor physiology.
- 5. Supranuclear control systems of eye movements.
- 6. Ocular pharmacology including action of cycloplegic agents.
- 7. Ophthalmic optics.
- 8. Determination and correction of refractive errors.
- 9. Normal and abnormal vision development.
- 10. Vision testing including Snellen acuities and their equivalents.
- 11. Pathophysiology of amblyopia and awareness of risk factors.
- 12. Diagnostic testing of phorias, intermittent and manifest strabismus including:
 - a. Esodeviations including A and V patterns and excess convergence
 - b. Exodeviations including A and V patterns and lateral incomitance

- c. Vertical deviations including head tilts
 - d. Oblique dysfunction and dissociated strabismus
 - 1) clinical differentiation of DVD and I.O. muscle overaction
 - 2) DHD
 - 3) differentiation of Brown syndrome and I.O. muscle palsy
 - e. Differentiation of types of Duane syndrome and VI cranial nerve palsy
 - f. Paretic and supranuclear strabismus; etiology and characteristics, diagnostic testing and surgical and non-surgical treatment modalities and options:
 - 1) ocular motor apraxia
 - 2) skew deviation
 - 3) Parkinson disease
 - 4) Parinaud syndrome
 - 5) Progressive Supranuclear Palsy
 - 6) Thyroid Eye Disease
 - 7) Multiple Sclerosis
 - 8) internuclear and gaze palsies
 - 9) internuclear ophthalmoplegia
 - 10) synergistic divergence
 - 11) Moebius syndrome
 - 12) congenital fibrosis
 - 13) III, IV and VI cranial nerve palsies
 - g. Special forms of strabismus including but not limited to:
 - 1) aberrant regeneration
 - 2) ocular myotonia
 - 3) cyclic strabismus
 - 4) monocular elevation deficiency
 - 5) orbital floor fractures; blow out fractures
13. Congenital and systemic disease associated with ocular motor or visual disorders including but not limited to:
- a. Graves' disease
 - b. Diabetes
 - c. Multiple Sclerosis
14. Nystagmus including:
- a. Horizontal, vertical and rotary
 - b. Jerk and pendular
 - c. Latent and manifest
 - d. Monocular and binocular
 - e. Acquired and congenital
 - f. Null points
 - g. Abnormal head positions
15. Ophthalmologic disorders.
16. Embryology including associated eye anomalies.
17. Infant and child development.
18. Medical genetics, selected genetic syndromes and eye findings.
19. Non-surgical treatment of sensory and motor abnormalities.
20. Principles of strabismus surgery.

E. Clinical Skills

1. Clinical skills include:
 - a. Screening necessary to gather ophthalmologic, general medical and developmental history
 - b. Standardized evaluation tools, including functional measurements, as part of the clinical examination
 - c. Psychomotor and social skills required to educate patients and caregivers of the findings
 - d. Writing skills to produce clear and concise written documentation
 - e. Ability to assist the ophthalmologist in carrying out the treatment plans
 - f. Ability to identify when to recommend additional evaluation
 - g. Ability to identify when there is need for an urgent referral to the ophthalmologist