

Residency in Ophthalmology: Program Specifics

Please see “House Officer Programs: General Information” for basic information common to all internship and residency programs. The following information highlights specific program requirements of the Ophthalmology residency program.

Program Director: Dr. Rachel Allbaugh (allbaugh@iastate.edu; 515-294-4900 or 290-1094)
Faculty Diplomates serving as supervisors and potential advisers of the program:

- Dr. Rachel Allbaugh, DVM, MS, DACVO (Associate Professor)
- Dr. Melissa Kubai, DVM, MS, DACVO (Assistant Professor)
- *Dr. Lionel Sebbag, DVM, DACVO (not at ISU but remains involved as Affiliate Faculty)*
- Note: Diplomate status is required for a faculty member to serve as a resident adviser.

Specialty College: American College of Veterinary Ophthalmology, with training and certification through the American Board of Veterinary Ophthalmology

- Requirements for candidate registration, certification, and examination are outlined online (www.abvo.us).
- Resident selection for the Ophthalmology Residency will occur through the ORCA (Ophthalmology Resident Choosing Association) rules, rather than through the VIRMP, with application and offer dates specified each year.
- The resident must register with the ABVO by submitting a “Provisional Resident Application” and fee to the ABVO office at least 30 days prior to the start of the residency which will include the contact details at which you want the ABVO to correspond with you regarding your residency program, credentialing process and certifying examination. *It is your responsibility to keep this information updated throughout your residency.*
- Resident Evaluations must be submitted every 6 months to the ABVO Residency Committee (by January 5 and July 5 of each year) by logging in via the online system <https://member.abvo.us/>
- The resident should submit to ABVO the “Application to Take the Certifying examination” and submit the fee to the ABVO Office by January 15 of the 3rd year.
- To qualify for examination, the resident should refer to the published requirements of the college. See <https://www.abvo.us/residents> for Resident Resources and note important links for “Announcements, Deadlines, Sign into Resident Portal, Credentials Information, Exam Information, and the Certification Process Flow Chart (click on to open the pdf).
- It is solely the responsibility of the resident to submit any material and fees required by the specialty college for registration, credentials application, or board examinations. See abvo.us website navigation notes above.
- ABVO residency training program requirements include:
 - Minimum case examination requirements - Residents are required to examine a minimum of **1,500 dogs, 150 cats, 50 horses, and 35 individual cases of at least 3 “additional species”** (cows, pigs, goats, sheep, camelids, birds, lab animal/exotic/pocket pets).

- Minimum surgical requirements at Level 2 (procedure is performed by the Resident with a Supervising Diplomate/Associate Mentor providing Direct Supervision) - **25 lens extractions:** 20-25 phacoemulsification/irrigation and aspiration (5 *intracapsular or *extracapsular lens extractions may count towards the required 25 lens extractions); **15 anterior segment:** Penetrating keratoplasty, corneoconjunctival transposition, lamellar keratectomy, corneal laceration repair, corneal graft, conjunctival flap/graft, *suprachoroidal CsA implant placement, etc.; **15 adnexal:** Entropion, ectropion or eyelid laceration repair, eyelid/conjunctival mass removal, eyelid reconstruction, etc.; **5 orbit and globe:** Orbitotomy, enucleation, evisceration, exenteration, etc. **5 nasolacrimal:** *Parotid duct transposition, third eyelid gland replacement, nasolacrimal duct reconstruction; **5 vision-sparing glaucoma techniques:** *Cycloablation, *shunt placement, or *combination techniques (* indicates surgeries that may be performed on cadaver specimens)
- See your individual approved ABVO RESIDENCY TRAINING PROGRAM APPLICATION that was provided to you by the ABVO Residency Committee for complete details.

Clinical program requirements

- The ophthalmology resident will spend a maximum of 85% or 133 weeks on clinic duty in 36 months and a minimum of 15% or 23 weeks off-clinic duty.

Year 1	Year 2	Year 3
70-85% 37-44 weeks clinic duty	70-85% 37-44 weeks on clinic duty	70-85% 37-44 weeks on clinic duty
6-13 weeks Research and study	6-13 weeks Research and study	6-13 weeks Research and study
2 weeks of vacation	2 weeks of vacation	2 weeks of vacation

Seminar/Rounds requirements

Rounds type	Frequency	Day/Time	Commitment
HO Seminar/Case Presentation	Weekly	Thursdays @ 8am	Required
Ophthalmology Journal Club/Lit Review	2 hrs/month		Required
Ophthalmology Textbook Review	Monthly		Encouraged
Ocular Histopathology Rounds	Monthly	Last Friday @ 8am	Required
Ocular Surgical Practice	every 1-2 months		Required
SAIM Book Club	Weekly	Fridays @ 9am	Optional
ECG Rounds	Monthly	4 th Weds @ 8am	Optional
Radiology-Pathology (RadPath) Rounds	Monthly	4 th Tuesday @ 8am	Optional
Morbidity & Mortality Rounds	Monthly	2 nd Tuesday @ 8am	Optional
ECC Rounds	Weekly	Wednesdays @ 3pm	Optional
Student Grand Rounds	Weekly	Fridays @ 8am	Optional

Scholarship and Teaching requirements

- The resident will submit one paper to an approved journal for publication to their advisor by March 1 of both the 2nd and 3rd years of residency (2 papers total minimum for duration of residency, with at least one from a hypothesis-driven research project). The resident will perform a research study with input and guidance from their advisor. Grant submission to the Vision for Animals Foundation, VCS Incentive Grant, CVM Seed Grant, or another funding source is encouraged for projects requiring funding. Topic considerations for the manuscript, project, and/or grant should be discussed with the resident mentor prior to working on writing.
- The resident will submit at least one abstract (oral preferred) for presentation at a national or international specialty meeting (i.e., ACVO, ECVO, IEOC, ARVO, etc).
- During each year of the residency, the resident is required to give at least 1 hour of didactic instruction in courses offered to veterinary students or for an extracurricular activity such as a student club (i.e. Ophtho Club). The resident is also expected to teach in the senior clinical rotations (e.g. clinical case teaching, leading student rounds sessions, etc), and in other ophthalmic didactic courses and labs as assigned (e.g. VM2 ophtho exam lab, VM3 pig eye cadaver surgery lab, VM4 equine diagnostic skills course).

Other program specifics that differ from ISU-CVM “House Officer Programs: General Information”

- Please see below comprehensive “Ophthalmology Residency Protocol” for additional information about this program.
- For semiannual Resident Evaluations, the Ophthalmology Service will use the standard ISU-LVMC House Officer Evaluation form.

OPHTHALMOLOGY RESIDENCY PROTOCOL

Welcome to the Iowa State University comparative ophthalmology residency program. This residency program is designed to prepare the resident for a successful career as an academic or specialty practice ophthalmologist and it will also help prepare the resident for successful completion of all parts of the ABVO board certification process. The Iowa State University program is designed to fulfill the guidelines for residency training as established by the American Board of Veterinary Ophthalmology and is an ABVO approved residency. The program will partially fulfill the requirements for certification by the American Board of Veterinary Ophthalmology. Being accepted into or completing an ABVO residency program does not affirm or guarantee that the resident will have credentials accepted by the ABVO, nor does it guarantee or imply that the resident will be successful in completing the ABVO certifying examination.

1. Faculty and support staff

Rachel A. Allbaugh, DVM, MS, Diplomate ACVO, Associate Professor

Dr. Allbaugh is originally from Iowa and received her DVM degree from Iowa State University in 2004. She completed an internship in small animal medicine and surgery at Carolina Veterinary Specialists in Greensboro, North Carolina. She then went to Kansas State University in 2005 as a veterinary ophthalmology resident, completed her three-year residency program and masters degree at Kansas State University and stayed on as a faculty member from 2008 to 2011. In November of 2011, Dr. Allbaugh joined the faculty at ISU.

Melissa Kubai, DVM, MS, Diplomate ACVO, Assistant Professor

Dr. Kubai was born and raised in Wisconsin. She attended veterinary school at University of Wisconsin-Madison, completed a small animal rotating internship at Michigan Veterinary Specialist, an ophthalmology specialty internship at Louisiana State University, and completed her comparative ophthalmology residency at University of Illinois-Champaign/Urbana. For 7 years she worked in a private specialty practice in Tucson, AZ then returned to her Midwest roots in 2021 by joining the faculty at ISU.

Lionel Sebbag, DVM, PhD Dipolmate ACVO, Affiliate Faculty

Dr. Sebbag graduated from the National Veterinary College of Toulouse (France) in 2011. After graduation, he completed an internship in small animal medicine and surgery at Kansas State University, followed by a four-year residency in ophthalmology at University of California-Davis. In September 2016, Dr. Sebbag joined the faculty at ISU as an assistant professor and departed in 2020 to move to Israel following completion of his PhD.

Chimene S. Peterson, RVT, CVT, Ophthalmology Technician

Chimene was raised on a farm in Iowa and received her Associate of Applied Science degree from Kirkwood Community College in 1994. She became a Registered Veterinary Technician in Iowa in 1994 and a Certified Veterinary Technician in 1996.

Chimene started working in a general practice in Minnesota, then came to Iowa State University as a small animal medicine technician in 2000, she transferred to the ophthalmology service where she was an ophthalmology technician from 2003 to 2008. She was also an ophthalmology technician at University of Minnesota and at a specialty practice, Blue Pearl Veterinary Partners of Minnesota before returning to ISU in 2011.

Laura A. White, RVT

Laura was raised in the Des Moines area and received her Associated in Applied Sciences from Des Moines Area Community College in 2017. She became a Registered Veterinary Technician in 2017 and started working full time at Broderick Animal Clinic in Waukee. Laura started working at Lloyd Veterinary Medical Center in the fall of 2018 in the ophthalmology department. Laura enjoys going for walks with her German Shepherd, Eowyn, and reading in her spare time.

2. Clinical ophthalmology

In the 3-year program the resident will spend a 75% (117 weeks) of their time on ophthalmology clinics (ACVO maximum on-clinic time 85% [133 weeks] and minimum off clinic time 15% [23 weeks]). The ABVO requires that the resident receive clinical ophthalmology training for a minimum of 24 months, of which 80% must be under direct supervision by a Diplomate. Two weeks per year are allotted for vacation, which is taken during off-clinic time. New appointments and rechecks are seen on Mondays, Wednesdays, and Fridays. Surgeries are scheduled in the mornings on Tuesdays and Thursdays and equine cases are seen in the afternoon. All new cases *should* be seen by both the faculty member and the resident(s). Rechecks will also be seen by both the resident(s) and faculty member in most cases. Near the end of the residency program, and at the attending faculty member's discretion, you will be expected to manage recheck appointments as the senior clinician on the case. During the 3rd year the resident will act as primary attending clinician for two blocks, with mentors available for consultation and assistance.

3. Surgery

Ophthalmology residents are expected to follow all established surgical protocols and standard operating procedures (SOPs) for the operating room in small animal and large animal, these include proper surgical attire, gowning, draping, gloving, patient preparation, hand-scrubbing, etc. Collegial interactions are a must when dealing with anesthesia and surgical personnel, and all other faculty and staff.

Early in the residency, trainees will assist faculty members on surgical cases. You should read Eisner's Eye Surgery text and Nasisse's Vet Clinics of North America Small Animal Practice – Surgical Management of Ocular Disease (Vol 27, no 5, Sep 1997) within the first few months of your residency. You should familiarize yourself with the surgical instruments, operating microscope, diode laser, and phacoemulsification equipment as early as possible in your program. Residents must demonstrate proficient intraocular surgical skills on cadavers before participating in operations on clinical

patients. All surgery on clinical patients will be performed under the supervision of a faculty member until the resident has demonstrated sufficient skills to justify their operating independently. This time will vary for each resident, and is at the attending faculty member's discretion.

For surgical practice:

- A. Dog and cat heads or eyes can be acquired from the junior surgery lab course by arrangement (contact Dr. Joyce Carnevale to discuss possible cadaver opportunities), pathology department with permission, and the Diagnostic Lab by agreement in advance. Eyes from other species (cow, pig, horse) can also be acquired in a similar manner. You may also contact outside sources for eyes.
- B. With ophthalmology supervisor approval pig eyes can be ordered from: Animal Technologies, PO Box 130240, Tyler, TX 75713. If you call before 2 PM Monday through Wednesday, they will harvest eyes the following morning and fed-ex them overnight. Please plan ahead and do not over-order since funds are limited and we want to make maximal use out of the material ordered. These eyes should be used for practicing intraocular procedures. Extras should be frozen. Eyes can be thawed any time and used for corneal and adnexal surgery practice.
- C. Residents are encouraged to retain extra materials from clinical patient surgeries (e.g. suture material, blades, cellulose sponges, OVD), speak to company representatives at ACVO meetings for free products, and contact companies directly to obtain samples and expired materials for surgery practice.

4. **After-hours emergencies**

- A. The residents are required to provide 100% of the after-hours ophthalmology emergency coverage, with faculty members providing backup. With multiple residents the emergency duty will be divided equally among them. Emergencies already seen by a referring veterinarian (coming with notice) and current ophthalmology service patients should be seen directly by the ophthalmology resident and not by an intern first.
- B. You are expected to call your emergency faculty back-up clinician with each emergency case after you have examined the animal and formulated a plan but PRIOR to instituting any medical or surgical interventions. As your skills progress during your residency program, it is the back-up faculty clinician's prerogative to let you know when/if you may manage emergency cases without first consulting with your back-up faculty member.
- C. If any animal is going to be anesthetized after hours the emergency anesthesiologist should be contacted by the OPHTHALMOLOGY RESIDENT. An animal should NEVER be anesthetized without the approval of the ophthalmology faculty member.
- D. Financial deposits should be collected per the instructions given you during your hospital orientation and in accordance with current hospital policy.

5. **Hospital relations**

- A. Please introduce yourself as a resident in ophthalmology when talking with clients or RDVMs and, when possible, please introduce your faculty member to clients when they enter the exam room.
- B. When entering an examination room in small animal or entering the equine examination area everyone should wash their hands before touching an animal and again before exiting the area.
- C. Should conflicts arise at any time, prompt efforts at open communication aimed at resolving any misunderstandings should be a top priority.
- D. Consults for other services should be performed as quickly as our schedule permits but should not delay scheduled appointments.
- E. Equine patients are co-managed with an equine medicine (or less commonly surgery) faculty/resident/intern. Daily communication between the services is essential for any in-house patients. Be sure to keep both services updated as to all test results, the need for surgery to be performed, and any medical updates.
- F. Radiology: For routine radiographs the request should be submitted to the radiology service. For special studies, including ultrasound, CT, MRI, or dacryorhinocystograms, etc. you must *also* obtain verbal permission from the radiology doctor on duty.

6. **RDVM/client communication:**

The Ophthalmology service is committed to building and maintaining strong relationships with its referring veterinarians and clients, therefore, an important part of the resident duties includes timely communication with referring veterinarians and clients. A copy of the discharge instructions and results of any diagnostic tests performed are to be emailed or faxed to the referring veterinarian the day the patient is discharged from the hospital. The referring veterinarian should be contacted by phone the SAME DAY a new patient is examined by either the resident or the faculty member (veterinarians for after-hours emergencies can be contacted the next business day). Vets should also be called regarding patients undergoing surgery. If you receive a phone call you are uncomfortable answering, please tell them you will discuss the case with your faculty member to obtain additional information, get a call-back number, and then promptly follow-up. Clients of our in-house patients should be called at least once daily (and in most cases twice daily) with a progress report. Owners should be kept informed of their bill and additional money should be obtained for a deposit if necessary.

7. **Charges:**

The ophthalmology technicians have primary responsibility for entering charges, however as a resident you will enter charges after-hours and occasionally on work days so you will need to learn some basics. A resident or faculty member must review all charges prior to an inpatient or surgical case being discharged from the hospital.

8. **In house patients:**

- A. You must perform a complete physical exam on any small animal patient admitted to the hospital and especially those undergoing sedation, general anesthesia, or surgery. You may perform physical exams on equine patients or work with an equine clinician to get it completed. Similar policy applies to exotics or other unique ophthalmology patients.
- B. Verify the client phone numbers as well as the referring veterinarian information. If possible, please request that owners keep their cell phones turned on and readily available while their animal is undergoing a procedure.
- C. Anesthesia requests must be submitted *before 3:00 pm* for the following day. Work with Chimene or Laura to ensure a request is submitted and to review details of the procedure plan the day prior to surgery. If an animal requires surgery the same day it is admitted you must discuss the case with the anesthesia faculty member on-duty and alert Chimene or Laura immediately.
- D. Animals are admitted to the small animal ICU if an IV access is necessary or if frequent (i.e. q1-2 hour) treatments are required. All cataract surgery patients should be admitted to the ICU post-operatively if they are spending the night in the hospital. Inform the ICU technician of any post-op surgical patients that are to be recovered in and admitted to the ICU prior to taking the patient to surgery. If animals remain in ICU at the end of the week touch base with the ICU technician at the end of the day Friday to discuss weekend care. You must review and sign the ICU treatment sheet each morning by 8 AM.
- E. Small animals not requiring constant monitoring or frequent topical medications are admitted to the Ward and all treatments are performed by ophthalmology personnel or students.
- F. Equine in-patients are co-managed with the equine medicine service; however, the ophthalmology student, resident and faculty member are still primarily responsible for each case. Daily communication between the ophthalmology and equine medicine services is essential for any in-house patients.

9. **Progress reports:**

A written and verbal progress evaluation will be provided for you every 3 months during the first year and then at 6-month intervals from the ophthalmology faculty members. Continuation into the 2nd and 3rd years of your residency is contingent upon satisfactory performance evaluations. A program evaluation must also be completed by the resident and submitted to the ABVO Residency Committee via the online system every 6 months (by January 5 and July 5 of each year). Sign into the portal at <http://member.abvo.us/>

10. **Literature review:**

The ABVO requires that a minimum of 2 hours a month be spent on reviewing journal articles, literature, topics, slide recognition, etc. We will have journal/ literature review or slide recognition Friday mornings from 8:00-9:00 AM except for the last Friday of the month when ocular histopathology training occurs (unless otherwise arranged). For Journal Club it is the resident's responsibility to choose material for review and present

critical evaluation of the journal articles or literature. Residents will each present an M and M case twice a year on a chosen topic or case either during our Friday 8-9am resident rounds or on a second Tuesday full LVMC M and M rounds session if preferred.

The goal of Journal Club is twofold: (i) Cover material that you need to know for boards, and (ii) Improve your critical thinking of published data, so that we do not naively believe everything written down in the veterinary literature. This exercise will also strengthen your own scientific writing skills by not replicating mistakes of others.

Journal Club protocol:

Select 4 articles: this allows 13-15 minutes to discuss each one.

Spend ~5 minutes describing the article and the main conclusions

Focus on the Tables and Figures

Spend ~5 minutes detailing the strengths and weaknesses of the study

Use these questions as a guide: Can you detect any oversights (in methodology, population selection, etc.) that may affect the validity of the study? Was a power analysis carried out (when indicated)? Do the results support the conclusion?

Spend the last few minutes for Conclusion and Discussion with the group.

Conclusion: What is your main take home message after reading this publication?

Discussion: Might this paper change our clinical practice? What are the next steps that could/should be taken?

Questions for the group.

11. **Histopathology training:**

The ABVO requires a minimum of 12 hours of ocular histopathology training per year. We will have ocular histopathology rounds on the last Friday of each month from 8:00am to 9:00am (unless otherwise arranged). The ocular histopathology review is supervised by a pathology faculty member, usually either Dr. Joe Haynes or Dr. Jodi Smith, though other pathology doctors may also attend and participate.

12. **Basic Science Course:**

The resident will attend the Veterinary Basic Science course, which is offered every other year. The cost of the program will be the responsibility of the resident, but if possible ISU will partially subsidize the expenses of the course.

13. **ABVO species case log:**

Residents are required to maintain a species log throughout their program that is summarized with the ABVO Program Evaluation Form at 6-month intervals and at the end of your residency. The species case log should indicate in sequential columns: 1) the species evaluated, 2) the date of the clinical evaluation, 3) the Supervising Diplomate/Associate Mentor providing Direct Supervision, and 4) the hospital case identification number for dogs, cats, and horses. Please be aware that as Supervising

Diplomates we need to see your case species log summary to complete our mentor evaluation, so you must provide that information to us at least 7 days prior to the submission deadline.

14. **ABVO surgical log:**

Residents are required to maintain a surgical log throughout their program that is summarized with the Program Evaluation Form at 6-month intervals and submitted at the end of the residency period. The surgical logs should indicate in sequential columns: 1) patient medical record number, 2) patient species, 3) date of surgery 4) surgery performed, 5) role of the Resident in the surgery (Level 1-3, A or B), and 6) name of ACVO Diplomate supervising the surgery if Level 1 or 2, or name of other clinician/Resident supervising surgery if Level A or B. Although the ABVO is tracking surgeries done under non-diplomates (Level A and B), those surgeries are not included in your summary surgery log submitted every 6 months. Please be aware that as Supervising Diplomates we need to see your case species log summary to complete our every 6 month mentor evaluation, so you must provide that information to us at least 7 days prior to the submission deadline. The entire surgical log must be submitted at the end of your residency (final ABVO evaluation). The ABVO website contains surgical training recommendations and the grading system is included below.

Level 1: The procedure is done by the ACVO Diplomate with the resident assisting.

Level 2: The procedure is done by the resident with an ACVO Diplomate providing direct supervision. The Diplomate must either participate in the capacity as assistant surgeon or be in the operating room through the procedure. The Resident must perform all critical steps of the procedure for it to count towards Level 2 required minimums.

Level 3: The procedure is performed by the resident without a supervising Diplomate's assistance.

Level A: The procedure is done under the supervision of another resident.

Level B: The procedure is done under the supervision of a veterinarian who is not an ACVO diplomate or ABVO resident.

During the course of their RTP, Residents are required to perform a minimum number of the following **Level 2 surgeries** (* indicates surgeries that may be performed on cadaver specimens):

a. **25 lens extractions:**

- i. 20-25 phacoemulsification/irrigation and aspiration
- ii. 5 *intracapsular or *extracapsular lens extractions may count towards the required 25 lens extractions.

- b. **15 anterior segment:**
 - i. Penetrating keratoplasty, corneconjunctival transposition, lamellar keratectomy, corneal laceration repair, corneal graft, conjunctival flap/graft, *suprachoroidal CsA implant placement, etc.
 - ii. Diamond burr, grid keratotomy, anterior stromal puncture, and debridement techniques may not be counted toward minimum anterior segment surgical procedures.
- c. **15 adnexal:**
 - i. Entropion, ectropion or eyelid laceration repair, eyelid/conjunctival mass removal, eyelid reconstruction, etc.
- d. **5 orbit and globe:**
 - i. Orbitotomy, enucleation, evisceration, exenteration, etc.
- e. **5 nasolacrimal:**
 - i. *Parotid duct transposition, third eyelid gland replacement, nasolacrimal duct reconstruction
- f. **5 vision-sparing glaucoma techniques:**
 - i. *Cycloablation, *shunt placement, or *combination techniques

The Resident must perform all of the critical steps of the procedure to count towards Level 2 or Level 3 surgeries. The following lists the critical steps for each procedure:

Phacoemulsification:

- ii. Corneal groove, paracentesis of the anterior chamber, capsulorhexis, phacoemulsification, irrigation/aspiration, plus/minus placement of an intraocular lens, corneal suturing.

Intracapsular lens extraction:

- iii. Corneal groove, paracentesis of the anterior chamber, extension of corneal incision, delivery of the lens, corneal suturing.

Extracapsular lens extraction:

- iv. Corneal groove, paracentesis of the anterior chamber, capsulorhexis, delivery of the lens, irrigation/aspiration, corneal suturing.

Conjunctival graft:

- v. Preparation of the wound, graft dissection, graft suturing

2. Additional information on logging surgeries:

- a. For bilateral procedures, each eye should be counted as separate surgeries

- b. For multiple procedures performed on the same eye, each procedure may be counted provided one procedure is not necessary/an integral part of the second procedure, i.e.:
 - i. A corneal incision performed as a part of an intraocular surgery cannot be counted as a separate corneal procedure.
 - ii. A ciliary body ablation procedure and shunt placement on the same eye may be counted as 2 procedures.
 - iii. A lamellar keratectomy performed prior to placing a conjunctival graft, cannot be counted as a separate corneal procedure.

One supervising Diplomate may directly supervise two residents performing surgery without directly participating in the surgery. In this scenario, one resident is the primary surgeon with a second resident as assistant. The supervising diplomate would thus be able to instruct both residents simultaneously (either by direct observation, or video from the microscope, or both). For the surgery log, the primary surgeon would record this as a Level 2 procedure while the assistant would record this as a Level 1 procedure.

15. **ACVO meetings:**

During the residency you will have the opportunity to attend the annual ACVO meeting. The ophthalmology service will be on emergency only during the meeting (generally Wednesday through Sunday), though the entire ophtho service has historically been able to attend each year, it is possible that if not presenting a resident MAY be required to stay at ISU. You will be required to present at least once during the course of your residency. The cost of the meeting will be the responsibility of the resident, but if possible ISU will partially subsidize the expenses of it.

16. **Teaching requirements:**

The resident is expected to prepare and present at least one didactic lecture to the third-year students or prepare a presentation for an extracurricular activity such as a student club every year. Residents will participate in and lead daily ophthalmology rounds with the fourth-year students. Residents will also participate in the ocular examination laboratories and the surgery course for veterinary students. Residents are strongly encouraged to give additional presentations at student club meetings and educational conferences when asked to do so to enhance public speaking skills and experience.

17. **Seminar requirements:**

The resident will attend and participate in the house officer seminar series as described in the LVMC residency program information handout. The resident will present 1 pathophysiology seminar per year.

18. **Project requirement:**
The resident is required to complete a prospective research project. Preparation and submission of a research grant proposal will be required if the study requires funding and the resident will present the results of the project at the ACVO meeting.

19. **Publication requirements:**
The resident will write and submit two scientific manuscripts for publication in a peer-reviewed journal. One manuscript must be a research project, the second may be the result of a project, a retrospective study, a prospective study, a clinical trial, a case report or a series of cases. Both manuscripts must be submitted for publication prior to March 1 of the 3rd year of the residency and is a requirement for successful completion of the residency program.

20. **ABVO Submissions:**
In order to qualify for examination, the resident should refer to the published requirements of the ABVO. **It is solely the responsibility of the resident to submit any material and fees required for registration, credentials applications or board examinations.** You must become familiar with the abvo.us website and <https://www.abvo.us/residents> for “Announcements, Deadlines, Resident Portal, Credentials Information, Exam Information, the Certification Process Flow Chart (pdf)