

Iowa State University Small Animal Internal Medicine Residency Program

Residency Program

SMALL ANIMAL INTERNAL MEDICINE, IOWA STATE UNIVERSITY

Objectives and Goals

This American College of Veterinary Internal Medicine (ACVIM) residency program has been designed to provide in-depth training in small animal internal medicine and related basic and applied sciences. The program has been developed to provide residents with a comprehensive knowledge of internal medical conditions affecting small animals. Our program strives to prepare medicine residents for active careers in academia or specialty practice, and the caseload provides an excellent and broad medical experience over the three-year residency. The overall goals of the program are for the resident:

1. To become familiar with internal medical diseases afflicting dogs and cats and to be able to logically correlate all clinical data in order to formulate correct treatment plans.
2. To gain a firm understanding of the underlying pathophysiological basis of disease.
3. To master the art and science of complete patient care and to appreciate the economic and emotional factors involved in the health care of small animals.
4. To develop the art of interpersonal communications for proper colleague and client relationships.
5. To develop teaching skills as he/she participates in the educational training of veterinary students.
6. To constantly pursue academic enrichment.
7. To complete a residency research project, to draft the results in a manuscript suitable for publication, and to present the research findings to an audience of peers in the second or third year of the program.
8. To satisfy all requirements to sit the general and certifying examinations of the American College of Veterinary Internal Medicine.

Program Description

The Department of Veterinary Clinical Sciences offers a 3 year residency program (starting and ending in approximately the middle of July, specific dates vary from year to year) in small animal internal medicine to prepare veterinarians for a career in academic veterinary medicine or specialty practice. Emphasis is placed on clinical medicine, clinical teaching and research in preparation for board examinations. Progression to the next year of the residency program is contingent upon completion of the goals for the previous year.

1. **Clinical Medicine**

The Small Animal Medicine referral clinic operates 2 separate medicine services with one faculty member and one resident on each service. Services see cases every other weekday, with non-receiving clinic days reserved for case work-up and teaching. Residents take primary responsibility for inpatients and outpatients within the team concept. Residents follow a cycle of roughly 6 weeks “on-clinic” duty in the Small Animal Internal Medicine Service then approximately 2 weeks “off clinic” duty. During “off-clinic” weeks, required rotations include clinical pathology, neurology, and radiology. External rotations at other Universities or referral practices are also available (but not required) to broaden resident experience and expertise. If the resident wishes to pursue an external rotation, the resident must provide a written summary of the rotation, including an explanation as to why the external rotation is uniquely valuable. The written request must be presented to the resident advisor a minimum of 4 weeks prior to the desired time for the external rotation. Elective rotations in other specialty services of the hospital are also possible including focused experience in anatomic pathology, dermatology, ophthalmology, anesthesiology, emergency medicine, and oncology. Elective rotations are suited to meet the individual resident needs and interests.

2. **Teaching**

Teaching skills are developed in the clinic and in lectures prepared for fellow residents, faculty members, and veterinary students. Faculty support and critique are provided. In addition, residents are involved in

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physical examination and diagnostic testing laboratories, give presentations at clinical problem conferences, and may present didactic lectures to junior and senior veterinary students as approved by the residency committee members.

Additional organized rounds and seminars in support of the resident clinical and teaching programs include Small Animal Medicine Rounds, monthly Radiology – Pathology rounds, monthly Evidence Based Medicine rounds, weekly Student Grand Rounds, weekly Small Animal Medicine Journal Club and Textbook Review Session, and biweekly Anatomic Pathology Rounds. Residents also attend and present in weekly morbidity and mortality rounds and weekly pathophysiology rounds. The rounds and seminars are tailored to assist residents in literature review and board preparation and to expose them to a broad range of clinical and academic experiences. Rounds schedules are subject to change.

3. Research

All residents at the Iowa State University Veterinary Medical Center are required to complete a research project. The form of such projects is highly variable and may include retrospective or prospective clinical or non-clinical studies. All projects involve a literature search, with subsequent development of a hypothesis and appropriate methodology to answer a scientific question. Residents present their projects with results and conclusions to the faculty in their second or third year. A limited amount of time for completion of the research project is scheduled during “off-clinic” weeks.

The identification, outline and anticipated schedule for completion of the research project is required in December of the first year of the residency.

The project must be completed during the residency and be submitted for presentation in poster or oral abstract form at one of the annual ACVIM meetings or another approved national meeting. A manuscript on the project must be prepared and submitted for publication to an approved peer reviewed journal in the event that the project is not accepted for presentation. Internal funding may be available on an annual basis to support resident projects. The completion of this research project with a manuscript suitable for publication is mandatory. Failure to complete this will result in withholding of the residency certificate.

Projects must obviously be realistic in terms of achievable goals and financial feasibility. Time necessary for completion of the project should be taken into account when planning rotations and schedules. Good planning done well in advance is clearly critical. The project is intended to be an entry into the world of scientific investigation and leads to well-trained residents who are equipped to make significant contributions to veterinary medicine. The resident should work initially with their resident advisor to identify potential projects. All of the internal medicine faculty may work with the residents on research projects.

The research project outlined in the ISU residency document (per ACVIM GIG) is required for every resident to complete during the program.

The research offerings from ACVIM (training sessions as recently described) are not acceptable substitutes for the research project. The ACVIM research offerings may be taken in addition to the primary project once it is completed.

4. Graduate Degree Program

A combined residency/graduate program leading to a Master of Science degree is currently available at Iowa State University. Only MS degrees having VCS as a major are currently available. Residents must **declare interest** in a masters program within the first 6 months of the residency. Residents must be **enrolled in the ISU Graduate College** with all appropriate paperwork completed by January 1 of the first

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year of the residency. The **POS committee must be formed and approved** by January 1 of the first year of the residency. A list of graduate courses must be presented to the POS committee for approval by March 1 of the first year. The **research project must be identified and approved** by the committee by June 1 of the first year of the residency.

If these deadlines are not met, then a graduate program cannot be pursued during the residency. Both thesis and non-thesis options are available and will require that a manuscript(s) suitable for publication be produced for successful completion of the masters program.

A graduate committee should be identified within the first six months of the program. This committee should have at least two members of Veterinary Clinical Sciences faculty. Faculty members from other sections in the College and University may also serve as graduate committee members and are encouraged.

For those candidates concurrently enrolled in the graduate college, successful completion of each year of the residency will include documentation of appropriate progress being made in the graduate program. Residents that enroll in concurrent graduate programs may have a small alteration in their on clinic schedule time; however, emergency duty obligations will not differ from residents in non-graduate programs. Residents interested in this option need to organize their graduate studies such that they are compatible with the primary goal of preparing the candidate for board certification in internal medicine. The class schedule must be approved by the Resident Advisor and the POS committee and the schedule should be submitted to all members of the Residency Committee prior to the onset of the semester.

The resident will meet twice yearly with the Resident Advisor and Major Professor to review the progress of the graduate program and the impact of the graduate program on the residency. It is the responsibility of the resident to arrange these meetings, preferably in December and June.

Library and other Literature Resources

A wide selection of current journals is available in the library and online. Each resident is required to be familiar with pertinent articles in the current literature. Reasonable expenses for photocopying are defrayed by the Hospital.

Resident Responsibilities

Medicine resident responsibilities consist of patient care, participation in the clinical teaching of senior veterinary students, participation in lectures and laboratories for underclassmen, and possible participation in selected continuing education courses. Responsibilities also include providing back up night and weekend emergency duty (this is shared by all of the small animal residents) as well as providing Medicine backup assistance to the other house officers on emergency duty. Medicine residents are required to:

1. Assist and direct the daily admission, care and monitoring of patients assigned to the medicine service.
2. Provide the highest standard of care and treatment of referral cases under the supervision of the medicine faculty member.
3. Attend rounds, seminars, and meetings as scheduled by the medicine service; active instruction of students is expected.
4. Assist and supervise student patient care including reading daily students' SOAPs.
5. Maintain fluid communication with clients throughout the patient's hospitalization and provide a written case summary on patient discharge.
6. Correspond with referring practitioners by phone on a regular basis during the patient's hospitalization as detailed below and via a written case summary on discharge.
7. Ensure medical records are complete, accurate, and timely.

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8. Provide back up (nights and weekends) medical advice/assistance for other house officers seeing emergencies. This may require the medicine resident to take over emergency case responsibility if it is in the best interest of the patient
9. Provide instruction to veterinary students on the diagnosis and treatment of patients during their clinical rotations.
10. Residents are required to exhibit collegial and respectful interactions and communication with students, house officers, and faculty at all times. The development of appropriate and professional communication skills is of utmost importance. Problems or deficiencies in this area will be noted in writing and discussed with the resident at semiannual reviews or as needed. Repeated problems in this area will result in dismissal of the resident from the training program.

The resident will be involved in the diagnosis and treatment of internal medicine cases under direct faculty supervision and will be responsible to the faculty member with whom he/she is rotating on the medicine service. The resident will be “the clinician of record” on all cases he/she receives and will assume the responsibilities of the attending veterinarian. Residents are expected to consult with their on-duty faculty clinician whenever questions arise. In this way, the resident will be afforded optimal responsibility and will, at the same time, receive continuous feedback on their diagnostic, clinical teaching, and communication skills

Specific Resident Teaching Responsibilities

Each resident has numerous interactions with veterinary students and should realize that they are role models for these students. Professional attire and language, and appropriate interactions with referring veterinarians are expected. Residents must also take care never to use denigrating or insulting language when referring to other veterinarians or to students (within the hospital or a public place). Residents should refer to each other and other veterinarians as “Doctor” while in the hospital and should instruct the students to do the same.

- Residents should allow and encourage students to perform diagnostic procedures on their patients except when the animal is in a life-threatening situation or the procedure would subject the animal to unnecessary pain.
- Students benefit from one-on-one discussions with clinicians about cases, as well as talking with owners. Students should be included in case discussion whenever possible.
- Residents must ensure that students understand the need for accurate completion of appropriate paperwork and forms, timely and ample submission for laboratory testing, correct medication dosing and administration, timely completion of ICU and discharge orders, and appropriate client communication. While these items are the student’s responsibility, the resident must oversee the case to minimize possible mistakes.
- During the final year of the residency, senior residents will be in charge of a medicine receiving service. This requires leading all rounds discussions and overseeing both their cases and the cases received by the other resident.

Referral Case Communication

The vast majority of cases seen in small animal internal medicine are referrals from veterinarians in Iowa and surrounding states. Communication with the referring veterinarian must be made in a timely and professional manner. The referral population provides cases for teaching, professional development, and hospital income.

- When an animal is hospitalized at the Medical Center, the referring veterinarian should receive a phone call on the day of admission to update him/her on the case. When an animal is discharged from the hospital, the referring veterinarian should receive another phone call to update them on the final disposition of the case.

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- Discharge information is written for both the referring veterinarians and the client. A copy of the case summary is faxed, emailed, or mailed to the referring veterinarian **within 24 hours** of patient discharge.
- Copies of laboratory results, biopsy reports, necropsies, etc., should be automatically sent to the referring veterinarian. It is the resident's responsibility to make sure the referring veterinarian receives this information.
- If there is a concern about an interaction with a referring veterinarian or a client is unhappy about the service/outcome of their pet's stay in the hospital, the senior clinician and Hospital Director should be informed as soon as possible.

Telephone Consultations

There are numerous requests for telephone consultations from the referring veterinarians. These interactions are very important to the University in that they offer a possibility for referral and as a source of public relations. They also serve as a learning tool for residents. Most calls are from Iowa and the surrounding states. All calls should be returned within 24 hours. If a call is returned and a veterinarian is not available, make sure to leave a message and document on the phone message the date and time you returned the call. Some receptionists will ask you to call again at a specific time. It is generally best to tell them that your schedule is unpredictable and it is better to have the referring veterinarian return your call.

Remember that you cannot diagnose over the telephone. Preface your advice with phrases like "From what you are telling me, I would consider..." or "If I understand you correctly, you might want to..." Keep a record of your telephone consultations with notes you make for 12 months. This is for the possibility of needing legal documentation, and also in case the patient comes in on referral.

There may be some instances where practitioners want an entire continuing education course. There is not enough time to do this. In those cases, offer to email, mail or fax them a review article or send a list of references on the subject.

It is required that all telephone consultations be performed with the same professionalism as all other collegial interactions.

Resident Supervision

One medicine faculty member, board certified in Small Animal Internal Medicine will serve as the Resident Advisor or Supervising Diplomate. This advisor will directly oversee the resident's training and act as a liaison with other faculty members in the College of Veterinary Medicine.

An interim advisor will be assigned by the internal medicine group to help the resident with initial planning and registration with the American College of Veterinary Internal Medicine. The interim advisor may stay on as the permanent advisor, or another member of the internal medicine group may take over as the permanent advisor after 6 months. The Advisor must be consulted and approve requests by faculty for the resident to participate in teaching, research, or other activities. The Advisor will serve on the graduate committee for a Master of Science program for residents choosing this option. The Major Professor should be selected based upon the area of research interest and may be the resident Advisor with approval of the Residency Committee.

Resident Evaluation

The progress of each resident will be evaluated at least twice yearly by the small animal medicine faculty during the first and second years of the residency. Small animal medicine faculty are responsible for guidance of the medicine resident and constructive criticism to aid the service, academic, and professional development of the medicine resident.

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Certificate Requirements

Residency Certificate Requirements

1. Each resident must develop 5 teaching cases emphasizing different organ systems (reviewed and approved by the resident advisor) to be used in small group learning situations. These 5 cases must be completed prior to the completion of the residency.
2. The resident must demonstrate competency in medical skills judged appropriate for a resident's level of professional development.
3. Each resident must submit one first author manuscript to a refereed journal during their 3-year program if they have not already fulfilled the ACVIM publication requirement. Medicine residents are also strongly encouraged to publish interesting cases and/or clinical observations in refereed journals in addition to original scientific material.
4. The resident must present the results and conclusions of their research investigation to the faculty in the second or third year of their training program. Residents are required to present the results of this research effort in poster or oral abstract format at a national meeting such as the annual meeting of the American College of Veterinary Internal Medicine. A manuscript on the project must be prepared and submitted for publication to an approved peer reviewed journal in the event that the project is not accepted for presentation.
5. Residents are responsible for keeping their ACVIM requirements current by noting fulfillment of required obligations and accurate completion of residency training forms. It is the resident's responsibility to be aware of ACVIM timelines and due dates. It is also recommended that residents maintain an updated curriculum vitae, and copies of all manuscripts submitted for publication.
6. The resident must complete all clinical rotations, scheduled emergency duties, and patient medical records.

Certificate of Residency

A certificate of successful residency completion will be awarded at the end of the residency only when stipulated requirements are satisfied, and the resident's faculty members have signed the Documentation of Residency Completion form.

Selection Procedure and Benefits

Resident Selection Procedure

First year residents are recruited from internship programs or private practices. A D.V.M. degree or its equivalent is a prerequisite. Small animal medicine faculty evaluate applications and final selection of the resident is made through the Veterinary Internship and Residency Matching Program. Selection is based on:

1. The individual's curriculum vitae, including college transcripts.
2. A letter of intent containing the applicant's statement of interests and goals.
3. Reference letters from a minimum of three people.
4. Prior veterinary experience.
5. An optional interview.

Employment and Benefits

The stipend for residents is approximately \$29,000.00; incremental annual raises are awarded in the second and third year.

Residents accrue annual leave at the rate of 12 hours per month of employment. One day of vacation uses 6 hours of vacation time. This is due to university policy which classifies residents as postdoctoral students. Total vacation time is equivalent to 24 days a year. Annual leave may only be taken/granted for the amount of vacation time

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accrued. Vacation time is to be taken when the resident is not scheduled to be on clinic or emergency duty. If residents are on clinics, and have no in hospital cases or responsibilities and wish to take vacation days on the weekend, then official vacation slips must be turned in as for weekdays. Vacation requests must be made at least 2 weeks in advance of the desired vacation time. Requests must be made on the standard University Leave Form well in advance, and must be reviewed by the Residency Program Coordinator and signed by the Small Animal Medicine Section Chief and the Chair of the Department of Veterinary Clinical Sciences or the Hospital Director. Except in unusual circumstances, approval will not be granted for annual leave during the final 3 weeks of the program.

A cell phone, desk, chair, place for book storage, and 5-drawer filing cabinet are also provided for each resident. A computer system is provided with word processing, spread sheet and presentation programs along with unlimited Internet access and an ISU e-mail account.

Licensure and Faculty

State licensure is required to practice at Iowa State University.

Outside employment is only permitted if approved by the Department Chair and no veterinary practice is permitted within the State of Iowa. The exception to this is speaking engagements.

Faculty in Support of the Small Animal Internal Medicine Residency Program

Internal Medicine

[Claudia J. Baldwin](#), DVM, MS, Diplomate ACVIM (Internal Medicine) - practice limited to consultation

[Albert E. Jergens](#), DVM, PhD, Diplomate ACVIM (Internal Medicine)

[Robert R. King](#), DVM, PhD, Diplomate ACVIM (Internal Medicine); Interim Hospital Director

[Jo Ann Morrison](#), DVM, MS, Diplomate ACVIM (Internal Medicine); Residency Program Director

[Krysta Deitz](#), DVM, MS, Diplomate ACVIM (Internal Medicine)

Dana LeVine, DVM, PhD, Diplomate ACVIM (Internal Medicine)

Anesthesiology

Bonnie Hay Kraus, DVM, Diplomate ACVS, Diplomate ACVA

[Dean H. Riedesel](#), DVM, PhD, Diplomate ACVA

Christopher Kelly, DVM

Jennifer Bornkamp, DVM

Cardiology

[Wendy A. Ware](#), DVM, MS, Diplomate ACVIM (Cardiology)

Primary Care

[Brenda Mulherin](#), DVM

[Bianca Zaffarano](#), DVM

[Linda K. Kauffman](#), DVM

[Susan E. O'Brien](#), DVM

June Olds, DVM

Dermatology

[James O. Noxon](#), DVM, Diplomate ACVIM (Internal Medicine)

Darren Berger, DVM, Diplomate ACVD

[Diana Miller](#), DVM

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Emergency and Critical Care

[Michael Curtis](#), DVM, PhD, Diplomate ACVA

Lisa Olsen, DVM

Neurology

[Rod Bagley](#), DVM, Diplomate ACVIM (SAIM, Neurology) – practice limited to Neurology consultation

Nick Jeffery, BVSc, PhD, Diplomate ECVS, ECVN, SAS, FRCVS (Neurology)

Oncology

[Leslie E. Fox](#), DVM, MS, Diplomate ACVIM (Internal Medicine)

Ophthalmology

Rachel Allbaugh, DVM, MS, Diplomate ACVO

[David Whitley](#), DVM, Diplomate ACVO

Gil Ben-Schlomo, DVM, PhD, Diplomate ACVO

Radiology

[Kristina G. Miles](#), DVM, MS, Diplomate ACVR

[Elizabeth L. Riedesel](#), DVM, Diplomate ACVR

Surgery

Karl Kraus, DVM, MS, Diplomate ACVS

[William D. Hoefle](#), DVM, MS, Diplomate ACVS

[Mary Sarah Bergh](#), DVM, MS, Diplomate ACVS

Alexander Krebs, DVM

Cheryl Hedlund, DVM, MS, Diplomate ACVS

Theriogenology

Swanand Sathe, BVSc, MVSc, MS, Diplomate ACT