

ACVR Residency Training Program Application

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Institution Name: Iowa State University

Succinctly state the objectives of the training program.

1. to master the art and science of veterinary diagnostic image interpretation in all core areas, to be able to logically correlate all imaging findings and clinical data in order to formulate accurate conclusions which, in turn, may provide direction for case management and to appreciate the economic and emotional factors related to the health care of veterinary patients.
2. to provide advanced training in clinical problem solving and diagnostic and therapeutic techniques in the field of veterinary diagnostic imaging.
3. to provide a firm understanding of the underlying radiation physics and anatomic basis of veterinary diagnostic imaging.
4. to develop expertise in interpersonal communications for proper colleague and client relationships.
5. to allow the resident an opportunity to develop didactic and tutorial teaching skills as they participate in the educational training of veterinary students.
6. to constantly pursue academic enrichment.
7. to provide experience in scientific and clinical case presentation through the seminar and house officer rounds programs.
8. to allow the resident the opportunity to complete a residency research project, gaining experience in designing and conducting a clinical research project, to draft the results in a manuscript suitable for publication, to obtain instruction and guidance in manuscript writing and submission for publication in refereed journals and to present the research findings to an audience of peers in the second or third year of the program.
9. to satisfy all requirements to sit both the certifying and qualifying examinations of the American College of Veterinary Radiology

What is the total length of the training program?

36 months

What are the responsibilities of the resident in the remaining non-clinical portion of the program?

1. 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.
2. to successfully complete participation in radiation physics and radiation biology one-on-one course instruction in year one.
3. to participate in instructional delivery of normal anatomy of veterinary diagnostic imaging to first year veterinary students, as well as physics and radiation safety to fourth year veterinary students.
4. to participate in required Seminar/Rounds
5. to successfully complete participation in 3 week external rotation in year two at the University of Missouri-Columbia with emphasis on Veterinary Nuclear Medicine.
6. to successfully complete participation in 2 week external rotation at the New Bolton Center with emphasis on Large Animal Ultrasound OR a 3 week internal rotation at ISU with emphasis on Large Animal Ultrasound in year two.
7. To successfully complete participation in 3 week internal rotation in year three with the ISU Cardiology service with emphasis on echocardiography.

Who is the Director of Residency training?

Kristina Miles, DVM, MS, DACVR

What percentage of this individual's time is committed to clinical service and teaching of residents?

Approx. 70 %

Roentgen diagnosis

Kristina Miles, DVM, MS, DACVR 70 %

Diagnostic ultrasound	Elizabeth Riedesel, DVM, DACVR
Computed Tomography	Kristina Miles, DVM, MS, DACVR 70 %
Magnetic Resonance Imaging	Elizabeth Riedesel, DVM, DACVR 65 %
Nuclear Medicine	Kristina Miles, DVM, MS, DACVR 70 %
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ACVIM	Albert Jergens
ACVIM	David Wong
ACVS	Karl Kraus
ACVS	Stephanie Caston
ACVP	Amanda Fales-Williams
ACVP	Austin Viall
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Briefly describe how the program meets the facility requirements.

1. Philips Mult Diagnost Eleva with Flat Detector stationary C-arm (Small Animal Special Procedures) Unit: Installed in a new, dedicated interventional imaging suite in Sept 2011. For procedures requiring the use of dynamic fluoroscopy +/- digital "spot" imaging.
2. Summit Innovet X-ray Unit: This 2004 unit is a versatile, high volume small animal diagnostic X-ray machine. The unit has been modified to provide digital images with installation of a Sound-Eklin EDR-6 sensor. A second new Summit Innovet X-ray unit also installed in March 2011 and is similarly modified with an EDR-6 sensor.
3. Philips Overhead Tube & Grid System (Large Animal X-ray Unit): Purchased in 2003, this 1000 mA tube is linked to an overhead rail system and a wall mounted grid to obtain high quality images in large animals. This unit is linked with a Sound-Eklin Mark V digital sensor.
4. Equine and bovine distal extremities are obtained with a portable Poskum unit linked with a Sound-NEXT digital sensor unit. Purchased in Oct 2016 and supported by a Merge E-Film based PAC system.
5. Toshiba 16-slice Aquilion-LB Computed Tomography scanner: Installed July 2010, this MDCT scanner provides both axial and spiral imaging for small animals (450 pound gantry weight limit). A large animal specialty table with a weight limit of 1800 pounds is available for use with the unit. The MDCT scanner can also interface with a Vital software 3D reconstruction workstation for advanced manipulation of images, such as virtual colonoscopy.
6. Philips Epiq Ultrasound unit: Purchased in Dec. 2015, this unit is used for all small animal abdominal ultrasound exams. A separate Philips Epiq ultrasound unit supports the Cardiology service.
7. Diagnostic Nuclear Scintigraphy unit provided by Enhanced Technologies has been relocated to a new suite with imaging performed using a custom gantry and linked to a Mirage dedicated nuclear imaging computer system.
8. MRI is available on-site utilizing a 1.5 Tesla GE Signa system with EXCITE software for small animals. Utility of the unit is augmented with a non-ferrous Shanks pneumatic table for large animal patients.
9. A Philips Veradius mobile C-arm unit delivered February 2011 provides additional small animal post-operative and cardiology imaging support within the sterile small animal surgical suites.
10. Two wall mounted dental X-ray tubes and Schick digital sensor system provide small animal digital dental images to the Merge E-Film PACS.
11. Dragon Naturally Speaking voice recognition software system allows dictation of imaging reports directly into the electronic medical record.
12. A Fuji PAC system has been purchased and is in final stages of pre-implementation prior to replacing the Merge E-Film PACS.
13. All LVMC Diagnostic Imaging services have been re-located in Iowa State University's new facility beginning Feb. 2011. The Lloyd Veterinary Medical Center's Hixon-Lied Small Animal Hospital Phase II project was completed July 2012, combining the SA and Equine/LA (2008) facilities.

What is the annual imaging caseload?

9,237

Small Animals (canine, feline): 85.5 %
Large Animals (equine and food animals): 12%
Exotic Animals: 2.5%

Small Animal Radiology: 7,902
Large Animal Radiology: 1,105
Abdominal Ultrasound: 1,163
Computed Tomography: 495
Nuclear Medicine: 33
Magnetic Resonance Imaging: 319
Other (specify): New Bolton LA Ultrasound & ISU Cardiac Ultrasound = 100

What percentage of imaging reports are typically available within 48 hours after the examination is conducted in typewritten or electronic form?	90 %+
Of the preliminary reports generated from the imaging caseload what percentage are initially produced by the resident?	95 %
What percentage of the resident reports are reviewed by the imaging faculty prior to finalization of the report?	100 %
When preliminary resident reports are reviewed and edited by the imaging faculty responsible for training, what percentage of the time are two or more faculty present?	70 %
	<p>Small Animal Radiology: 8,297 Large Animal Radiology: 1,160 Abdominal Ultrasound: 1,221 Computed Tomography: 520 Nuclear Medicine: 35 Magnetic Resonance Imaging: 335 Elective (any of above): Required elective (specify): 150 (combined UMC Nuc Med, ISU LA US & ISU Cardiac US Total: 11,718</p>
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Over the last five years, what is the average number of peer reviewed publications, on which the IMAGING faculty listed under Direction and Supervision in IV, are included as authors?	2/yr
What is the number of publications/submissions expected of a resident completing the program?	One
If this is an established program, what percentage of residents have made formal research presentations at the annual ACVR or equivalent national meeting?	50 %

<p>Is an advanced degree a requirement of the training program?</p>	<p>No</p>
<p>How many lectures or scientific presentations are expected of each resident during the course of their training?</p>	<p>25</p>
<p>Did all of your current resident(s) adequately complete the last six months of training?</p>	<p>Yes</p>
<p>List the current members of the residents' review committee.</p>	<p>Kristina Miles, DVM, MS, DACVR Elizabeth Riedesel, DVM, DACVR</p> <p>House Officer Committee Cheryl Hedlund, DVM, DACVS (Chair)</p>
<p>List the internal mechanisms in place to protect your resident if conflicts arise.</p>	<p>Communication and Conflict Resolution Trees Personnel interactions: Conflict Recognized House Officer (HO) & Other person (staff, intern, resident, faculty) Service 2 Conflict unresolved HO (Service 1) meet with – On-Clinic service (1) faculty & Other person (service 2) meet with – On-clinic service (2) faculty Conflict unresolved On-clinic service (1) faculty & On-clinic service (2) faculty Conflict unresolved Service (1) Leader & Service (2) Leader - Advisor (s) are apprised when deemed appropriate Conflict unresolved Service Leaders & HO Committee Chair HO Committee Discussion Resolution – Protocol established or Unresolved – to Hospital Director</p> <p>Client Complaint via evaluation of service or other means to Hospital Director or other Administrators: Problem Reported Hospital Director to notify HO's service faculty mentor & advisor(s) Problem Investigated Service Faculty mentor(s) meet with HO - Service faculty mentor(s) discuss with advisor(s) Problem Discussed Faculty Advisor(s) meet with HO to discuss - Advisor(s) offer suggestions how to avoid similar problems in the future Advisor(s) Report Episode to HO Program Director - Outcome to Hospital Director Unresolved Problem HO Program Director or Hospital Director reports to HO Committee Chair HO Committee Chair Decision No further action or HO Committee Discussion Resolution Protocol established - Corrective action - Continuation in program discussed Resolution Reported or Unresolved To Department Chair (faculty issues) - To Hospital Director (HO & Hospital issues)</p>

What is the nature and scope of the teaching file available to residents?

1. Teaching files for instruction of fourth year veterinary students. Classic case examples of a wide variety of radiographic & etiologic diagnoses. These film files contain all pertinent case information available, including case outcome or necropsy data.
2. Current integrated electronic medical record allows imaging reports to be searched via numerous parameters. Imaging reports of special interest may also electronically designated to be grouped in the "Teaching File".
3. "Do not discard" hard copy film files are categorized with an anatomic/radiographic coding system. The most recent case numbers, +/- a brief signalment & description, are recorded on an electronic list. Older cases are recorded on a typed index.

How is it maintained/updated?

1. Current imaging reports may be immediately tagged for "Teaching File" through the integrated electronic medical record, or tagged following daily radiology resident group rounds.
2. Hard copy film files are selected for "Do not discard" teaching files through review of film archives as time permits.

On average how many Known Case Conferences are conducted annually?

Once every 3 week cycle (17/year) Cycle consists of KCC, Resident Objectives review and General Literature review

What is the geographic relationship between the nearest medical library and the training program?

The primary medical collection for the ISU Library is located on-site (both paper and electronic collection). Additional materials are available through the main ISU Parks Library on campus (2 miles). Further materials can be obtained through interlibrary loan from the University of Iowa or other locations.

Provide the pass rate for first time, second time, etc for both the preliminary and certifying exams for your residents for the past 5 years. For example, for all residents finishing your program 5 years ago (Year 5): x number passed prelim 1st time, y number passed certifying exam 1st time, z number was unsuccessful.

	Year 5	Year 4	Year 3	Year 2	Year 1
Passed preliminary exam 1st time	1	1	1	1	
Passed preliminary exam 2nd time					
Passed preliminary exam after 2nd time		1			
Passed certifying exam 1st time	1			1	
Passed certifying exam 2nd time			1		
Passed certifying exam after 2nd time					1
Unsuccessful in all attempts				1	1

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