

# ACVR Residency Training Program Application

<b>Submission Date</b>	2018-01-31 16:17:30
<b>Institution Name:</b>	Erin Brinkman
<b>Succinctly state the objectives of the training program.</b>	<ul style="list-style-type: none"><li>• Train residents to a level of competence sufficient to achieve board certification in diagnostic imaging</li><li>• Offer a program of study that covers all essential aspects of diagnostic medical imaging and allows in-depth study in one or more areas of personal interest</li><li>• Provide experience in teaching, research, and service for residents</li><li>• Guide residents in the pursuit of a graduate degree (Masters)</li><li>• Train residents in diagnostic imaging skills, medical logic, and professional team interaction</li></ul>
<b>What is the total length of the training program?</b>	3 years
<b>What are the responsibilities of the resident in the remaining non-clinical portion of the program?</b>	Residents prepare for and lead regular (semimonthly) board review rounds with the senior radiologists and other faculty. The residents also present case-based topic rounds to 3rd and 4th year clinical veterinary students at least once per week. Residents are strongly encouraged to attend gross pathology rounds given each Friday afternoon. Each resident prepares and delivers lectures each spring in the diagnostic imaging course provided to second-year veterinary students. In the first year of the program, the resident is responsible for at least one lecture. In the 2nd, two lectures, and in the third year, three lectures. During the 36 months of residency and graduate program, each resident participates in a research project, produces a manuscript suitable for publication in a peer-reviewed journal, and presents the results at an ACVR scientific meeting. Residents are also encouraged to submit case reports for publication.
<b>Who is the Director of Residency training?</b>	Erin Brinkman
<b>What percentage of this individual's time is committed to clinical service and teaching of residents?</b>	70%
<b>Roentgen diagnosis</b>	Erin Brinkman 70%
<b>Diagnostic ultrasound</b>	Erin Brinkman 70%
<b>Computed Tomography</b>	Alison Lee 50%
<b>Magnetic Resonance Imaging</b>	Alison Lee 50%
<b>Nuclear Medicine</b>	Erin Brinkman 70%
<b>List the names and percentage clinical commitment of additional imaging faculty in the program, and their area(s) of instructional responsibility.</b>	Jennifer Gambino, part time faculty member with 25% clinical FTE. She does not have a primary area of instructional responsibility but contributes to the instruction of all imaging modalities when in the clinic.

[Alison Lee CV.pdf](#)

**ACVIM** Andrew Mackin

**ACVIM** Todd Archer

**ACVS** Jason Syrcle

**ACVS** Ryan Butler

**ACVP** Tim Morgan

**ACVP** Alicia Olivier

[UT NM agreement.pdf](#)

**Briefly describe how the program meets the facility requirements.**

Radiology

- Summit InnoVet Select (300 mA, 125 kVp) routine small animal service room supported by Fuji CR system
- Vet Vision 600 mA generator with Fuji CR system
- Quantum Q-Rad DRX Digital Radiography Unit
- Siemens Vertex large animal suite
- Sound-Eklin MarkIIIG DR for large animal suite
- Bowie portable X-Ray unit
- Vet-Ray portable X-Ray unit
- Sony Thermal Printer—Digital Film Imager UP-DF500
- OEC 9600 C-Arm Unit

Ultrasound

- Biosound ESAOTE MyLab50—B-mode, M-mode, color flow Doppler, PW Doppler, and CW Doppler

Computed Tomography

- Toshiba Aquilion 16-slice unit for small and large animals
- A 64-slice GE Lightspeed CT scanner is available at the Institute for Neurocognitive Science and Technology (INST)

MRI

- 3T GE Signa located at the MSU INST

PACS

- McKesson PACS
  - o Two radiologist work stations
  - o Three single monitor technologist work stations
  - o Web viewer also available

**Indicate the approximate number of patients seen annually by the home institution?**

12,000

**What is the annual imaging caseload?**

7000

Small Animals (canine, feline): 9,300  
Large Animals (equine and food animals): 2,400  
Exotic Animals: 100

	<p>Small Animal Radiology: 4500  Large Animal Radiology: 520  Abdominal Ultrasound: 800  Computed Tomography: 850  Nuclear Medicine: *outsourced  Magnetic Resonance Imaging: 260  Other (specify): 255 (echocardiography), fluoroscopy (90)</p>
<p><b>Please check which of the following types of imaging cases the residents will have exposure to during the residency:</b></p>	<p>Small Animal Echocardiography  Large Animal Ultrasound  Nonabdominal Small Animal Ultrasound (i.e. cervical, musculoskeletal)  Food Animal  Exotics  Teleradiology/Referral Imaging</p>
<p><b>What percentage of imaging reports are typically available within 48 hours after the examination is conducted in typewritten or electronic form?</b></p>	<p>85-100%</p>
<p><b>Of the preliminary reports generated from the imaging caseload what percentage are initially produced by the resident?</b></p>	<p>75-95%</p>
<p><b>What percentage of the resident reports are reviewed by the imaging faculty prior to finalization of the report?</b></p>	<p>100%</p>
<p><b>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?</b></p>	<p>50-60%</p>
	<p>Small Animal Radiology: 9000  Large Animal Radiology: 700  Abdominal Ultrasound: 3000  Computed Tomography: 950  Nuclear Medicine: Outsourced  Magnetic Resonance Imaging: 450  Elective (any of above): 150 (fluoroscopy)  Required elective (specify): 600 (echocardiography)  Total: 14850</p>
<p><b>Radiobiology</b></p>	<p>CVM 7000 DIS Medical Physics See below</p>
<p><b>Nuclear Medicine</b></p>	<p>CVM DIS 7000 Medical Physics See Below</p>
<p><b>Ultrasonography</b></p>	<p>CVM DIS 7000 Medical Physics See Below</p>

<b>CT</b>	CVM DIS Medical Physics See Below
<b>MRI</b>	CVM DIS 7000 Medical Physics 3 credit hours
<b>If your program does not offer formal courses in any or all of these topics please indicate how these educational objectives for each are met. Use the button below to upload additional information as necessary.</b>	<p>Radiobiology and the physics of diagnostic radiology, nuclear medicine, ultrasonography, CT, and MRI are covered in a special topics course (CVM 7000 [3]), a course taken for 3 hours of credit over two semesters. The course is entitled Medical Physics. The course is based on the text of Bushberg: The Essentials of Medical Imaging. The educational modules on the RSNA.org website are used as a supplement for the course. Additional texts include Christensen's Physics of Diagnostic Radiology and Kremkau's Sonography Principles and Instruments.</p> <p>A 16-week course that meets twice weekly for three hours provides three hours of credit toward the resident's masters program. The purpose of this course is to provide an in-depth study of radiation physics, radiation biology, and imaging principles. Content includes the physics of radiography, production of radiographic images, and radiation biology and protection. The residents are given weekly assignments, regular examinations, and a cumulative final examination. The content is delivered in real time via Skype by a remote instructor (Suzanne E. Crandal, Ed.D, Ed.S, MHA, R.T.(R).</p>
<b>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?</b>	4-5
<b>What is the number of publications/submissions expected of a resident completing the program?</b>	at least 1 prospective study with publication in a peer-reviewed journal; preferably publication of a case report as well
<b>If this is an established program, what percentage of residents have made formal research presentations at the annual ACVR or equivalent national meeting?</b>	100% of residents who have completed the program. The current second-year resident has already presented research at an equivalent national meeting.
<b>Is an advanced degree a requirement of the training program?</b>	yes
<b>How many lectures or scientific presentations are expected of each resident during the course of their training?</b>	Three didactic lectures for veterinary students, one required college-wide seminar, and one required national scientific meeting (ACVR).
<b>Did all of your current resident(s) adequately complete the last six months of training?</b>	Yes

**List the current members of the residents' review committee.**

Erin Brinkman  
Alison Lee  
Jennifer Gambino

**List the internal mechanisms in place to protect your resident if conflicts arise.**

o If a resident is not performing adequately at the 6 month review, he or she is put on probation. If the deficiency is not corrected, the resident may not be allowed to continue in the program.  
o In addition to the internal evaluation every six months, the residents are also evaluated at the university level yearly as university employees. If the resident's performance is inadequate and properly documented, their employment may be terminated by the university.

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

An archive of approximately 2000 known case film packets is categorized by body system and is available at all times to residents and clinical radiology students. These cases cover canine, feline, equine, bovine, and exotic species such as birds and ferrets. In addition, all imaging studies from 2008 forward are available for review through the hospital's HIS system and PACS. Additionally, as good teaching clinical cases are obtained and reviewed on PACS, the associated patient information is added to an extensive list of teaching cases organized by body systems. This searchable document is currently 133 pages long.

**How is it maintained/updated?**

The radiology faculty and residents are obliged to add to the ever growing list of interesting and known cases. Additionally, the residents are responsible for obtaining follow up information on these cases (definitive diagnosis, outcome, etc.) when available.

**On average how many Known Case Conferences are conducted annually?**

Weekly for 50 weeks per year with rare exception.

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

The MSU College of Veterinary Medicine has a medical library with extensive veterinary medical and medical journals, textbooks, and publications. There is also an extensive list of available electronic journal articles through the main campus library. These articles can be accessed from any computer in the College. Those items not available in our local library may be borrowed via the interlibrary loan system. In addition, personal subscription journals are shared in the diagnostic imaging service, and a rather large library of textbooks is available to imaging faculty and residents.

**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
Passed preliminary exam 2nd time					
Passed preliminary exam after 2nd time		1			
Passed certifying exam 1st time					
Passed certifying exam 2nd time		1			1
Passed certifying exam after 2nd time					
Unsuccessful in all attempts					

[proposed alt res calendar month 6.pdf](#)