



Wednesday, January 29, 2020

ACVR Residency Training Program Application

This document is to act as a guide for institutions desiring ACVR accreditation of their residency training program. It should be used in concert with the requirements set out in the ACVR Essentials of Residency Training document and it follows the headings of that document. It is intended to streamline the application process and help define what information the RSEC needs to evaluate the program. All terms used in this application have same definitions as defined in the Essentials.

Institution Name:

Mississippi State University

Email

aplumley@cvm.msstate.edu



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Objectives:**Succinctly state the objectives of the training program.**

- 1) Train residents to a level of competence sufficient to achieve board certification in diagnostic imaging
- 2) 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
- 3) Provide experience in teaching, research, and service for residents
- 4) Guide residents in the pursuit of a graduate degree (Masters)

- 5) Train residents in diagnostic imaging skills, medical logic, and professional team interaction



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Training Period:

What is the total length of the training program?

3 years

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

Residents prepare for and lead regular (weekly) 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 neuroimaging rounds given monthly by the neurology faculty and gross pathology rounds given each Friday afternoon by the pathologists. 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 both at a college-wide seminar and at an ACVR scientific meeting. Residents are also encouraged to submit case reports for publication.



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Direction and Supervision:

Program Director:

Who is the Director of Residency training?

Alison Lee

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

75%

Faculty:

Please list the faculty member of the program accepting PRIMARY responsibility for training in each of the following core areas:

Roentgen diagnosis

Alison Lee 75%

Diagnostic ultrasound

Alison Lee 75%

Computed Tomography

Alison Lee 75%

Magnetic Resonance Imaging

Alison Lee 75%

Nuclear Medicine

Alison Lee 75%

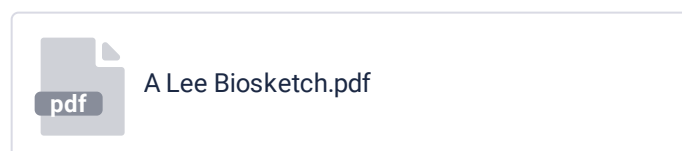


List the names and percentage clinical commitment of additional imaging faculty in the program, and their area(s) of instructional responsibility.

Mississippi State University is working in collaboration with VetCT to contribute to residency training. VetCT is available all weeks that Dr. Lee is not scheduled for clinical service (and no locum radiologist is scheduled). Radiologists with VetCT are available to meet with residents via video conference for two two-hour periods daily, and are available via a chat function from 8am-5pm daily Monday-Friday for consultation on cases. The teleconference feature is used both for rounds activities and daily case support. In addition, radiologists with VetCT over-read and provide critique on all cases reported on by residents during these weeks. Radiologists with VetCT also participate in Journal Club and Known Case Conference activities during these weeks. Participating DACVRs include Dr. Heather Chalmers and Dr. Kip Berry.

In addition, Mississippi State University has hired locum radiologists to help fill additional weeks that Dr. Lee is not on the clinic floor. These DACVRs include: Dr. Wade Won, Dr. Samantha Loeber, Dr. Adrien Hespel, and Dr. Erica Munsell.

Using the button below, please provide a one page CV documenting their expertise in the area(s) of assigned responsibility for each imaging faculty in the program.



For each speciality colleges listed below pleas list at least two Diplomates of these colleges who can be expected to regularly interact with radiology residents:

ACVIM

Andrew Mackin

ACVIM

Todd Archer

ACVS

Michael Jaffe

ACVS

Betsy Swanson

ACVP

Tim Morgan

ACVP

Alicia Olivier

Affiliation Agreement:

Using the button below, provide a copy of the affiliation agreement(s) in place if all of the training will not be accomplished on-site. Include the scope of the training and amount of time the resident will be away from the home institution.



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Facilities:

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 Vertix large animal suite
- Sound Fusion Equine DR PLUS system (with Canon 710 wireless DR panel 14"x17")
- Poskom VET-20BT HYBRID Battery Portable X-ray Generator (1600W, 20mA, 90kV)
- Vet-Ray portable X-Ray unit
- Sony Thermal Printer—Digital Film Imager UP-DF500

- OEC 9600 C-Arm Unit

Ultrasound

- GE Healthcare Logiq S8 –B-mode, M-mode, color flow Doppler, PW Doppler, and CW Doppler
- 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 Premier Imaging, an affiliate of Mississippi State University

MRI

- 3T GE Signa located at Premier Imaging

PACS

- eUnity PACS with Qris reporting program
- Four radiologist workstations
- Four single-monitor technologist workstations
- Web-based viewing capabilities



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Clinical Resources:

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

12,000

What is the annual imaging caseload?

7,000

Indicate in percentages the approximate breakdown of the patient population according to species.

Type a question

Small Animals (canine, feline): 9,300

Large Animals (equine and food animals): 2,400

Exotic Animals: 100

What is the approximate annual imaging caseload of the program in:

Type a question

Small Animal Radiology: 4,500

Large Animal Radiology: 520

Abdominal Ultrasound: 800

Computed Tomography: 850

Nuclear Medicine: None (outsourced)

Magnetic Resonance Imaging: 260

Other (specify): 255 (echocardiography), fluoroscopy (90)

Please check which of the following types of imaging cases the residents will have exposure to during the residency:

Small Animal Echocardiography

Large Animal Ultrasound

Nonabdominal Small Animal Ultrasound (i.e. cervical, musculoskeletal)

Food Animal

Exotics

Teleradiology/Referral Imaging



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Training Content:

What percentage of imaging reports are typically available within 48 hours after the examination is conducted in typewritten or electronic form?

95-100%

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?

10%

For each category below, approximate the number of cases a single resident will be involved in the interpretation of during the course of the entire program.

Type a question

Small Animal Radiology: 9,000

Large Animal Radiology: 700

Abdominal Ultrasound: 3,000

Computed Tomography: 950

Nuclear Medicine: outsourced

Magnetic Resonance Imaging: 450

Elective (any of above): 150 (fluoroscopy)

Required elective (specify): 600 (echocardiography)

Total: 14,850

Please indicate the course number and unit assignment residents are required to take to meet the educational objectives for formal instruction as outlined in the Essentials in the following:

Radiobiology

CVM 8201 Medical Physics I 2

Nuclear Medicine

CVM 8201 Medical Physics I 2

Ultrasonography

CVM 8201 Medical Physics I 2

CT

CVM 8202 Medical Physics II 2

MRI

CVM 8202 Medical Physics II 2

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.

Radiobiology and the physics of diagnostic radiology, nuclear medicine, and ultrasonography are covered in a course taught by Dr. Lee. The course is entitled Medical Physics I and is a 2-credit hour class. 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.

CT and MRI are covered in a second didactic course taken after completion of Medical Physics I. The course is entitled Medical Physics II and is a 2 credit hour course. The course is based on the text of Bushberg: The Essentials of Medical Imaging.

As part of both of these classes, the residents are given weekly assignments, regular examinations, and a cumulative final examination.

Research Environment:

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?

13/5 years; ~3/year

What is the number of publications/submissions expected of a resident completing the program?

at least 1 prospective study with publication in a peer-reviewed journal; preferably publication of a case report as well

If this is an established program, what percentage of residents have made formal research presentations at the annual ACVR or



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equivalent national meeting?

100%

Is an advanced degree a requirement of the training program?

Yes, the program requires a thesis master's degree



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Educational Environment:

How many lectures or scientific presentations are expected of each resident during the course of their training?

Three didactic lectures for veterinary students, one required college-wide seminar, and one required national scientific meeting (ACVR).



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Evaluation 'Evaluation of residents and protection mechanisms':

Did all of your current resident(s) adequately complete the last six months of training?

Yes

List the current members of the residents' review committee.

Alison Lee, DVM, DACVR

Marc Seitz, DVM, DABVP (Canine and Feline Medicine)

Andrew Mackin, DVM, DACVIM

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

There is a chain-of-command structure in place that the resident can use in case of any internal conflict. Briefly, the resident is able to bring the issue to the service chief of radiology and/or the residency director (currently Dr. Lee fills both these positions). If the conflict includes this/these individuals, the resident is able to bring the issue to the head of the Clinical Sciences Department or the Hospital Administrator without repercussions. In addition, the University has multiple mechanisms in place in which the resident can communicate with HR and/or appropriate department heads and deans should an issue arise. These contact channels are outlined in the resident handbook, which is distributed to all residents when they begin the program.



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Teaching File:

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

An archive of approximately 2500 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 with completed reports and, when possible, diagnoses. This searchable document currently contains approximately 6,000 cases and is available to all residents at all times.

How is it maintained/updated?

The radiology faculty and residents all add to the 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. The residency director updates the list monthly and distributes updated lists to residents.



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Conferences:

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

50



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Literature Resources:

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

The MSU College of Veterinary Medicine has a medical library in the same building as the hospital 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 located approximately 1 mile from the hospital. 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.



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Appendix:

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

Provide a clinical schedule for your resident(s). This schedule should provide a weekly or monthly outline of the resident's clinical responsibilities. This may be in the form of a master schedule or duty roster for your entire radiology section if desired. Use the button below.

MSU sample resident calendar.docx