

ACVR Residency Training Program Application Form:

Institution Name

University of Missouri

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.

II. Objectives:

Succinctly state the objectives of the training program.

To prepare candidates for the practice of veterinary radiology in a state of art environment by supervised and mentored experience in all generally recognized imaging modalities; promote clinical and preclinical research in the imaging sciences; provide didactic training in the areas of research, radiation biology, radiation safety, radiation therapy and nuclear oncology; train residents in the presentation of educational material to students and practicing veterinarians; develop concise and accurate reporting skills and prepare the candidates to sit for the American College of Veterinary Radiology certifying examination

III. Training period:What is the total length of the training program in months? **48 months**

If this is a 4 year program, during what year will the resident be eligible to take the ACVR Preliminary Exam? If the resident is not eligible to take the exam during the beginning of the 3rd year (September), please state the reason.

The resident may, at their discretion and with the permission of the residency director, take the Preliminary Examination during September of their 3rd year. (Typical starting date is July 15, 2014. All formal coursework must be completed prior to sitting this examination

What is the total duration of supervised clinical training in the program? **42 months**

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

Performance of required research projects and writing of papers and thesis under faculty guidance, vacations, independent study and opportunity to visit other

training centers and preparation for board examination.

IV. Direction and Supervision:

Program Director:

Who is the Director of Residency training?
Jimmy C. Lattimer DVM, MS, DACVR (radiology and radiation oncology)

What percentage of this individual's time is committed to clinical service and teaching of residents? **Currently 95% clinical service. We have had major faculty losses this year with the departure of Drs. Britt (September), Masseur (March), and Haller (August). Dr. Cook now has only a 10% clinical appointment. Dr. Lattimer has committed to be full time on clinics and has reduce his teaching load for the time until addition faculty comes on board.**

For those times when Dr. Lattimer or Dr. Cook cannot be present, the University has hired as locum and consultants ACVR Dipolmates such as Dr. Steven Kneller and Dr. Jessie Nagy to provide coverage for resident training.

Dr. Jodi Matheson DVM, MS, DACVR has signed a contract to begin work at the University of Missouri on or before June 6th 2016. 80% clinical appointment

Faculty:

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

Roentgen diagnosis:

Faculty: **Jimmy C. Lattimer DVM, MS, DACVR, DACVRO**

Percentage clinical service: 95%

Diagnostic ultrasound:

Faculty: **Jimmy C. Lattimer DVM, MS, DACVR, DACVRO**

Percentage clinical service: 95%

Computed Tomography

Faculty: **Jimmy C. Lattimer DVM, MS, DACVR, DACVRO**

Percentage clinical service: 95%

Magnetic Resonance Imaging:

Faculty: **Jimmy C. Lattimer DVM, MS, DACVR, DACVRO**

Percentage clinical service: 95%

Nuclear Medicine:

Faculty: **Jimmy C. Lattimer DVM, MS, DACVR, DACVRO**

Percentage clinical service: 95%

Dr. Matheson will likely assume a lead role in Ultrasound and Roentgen Diagnosis after she becomes settled at the University of Missouri.

List the names and percentage clinical commitment of additional imaging faculty in the program, and their area(s) of instructional responsibility. For each imaging faculty in the program please provide a one page CV documenting their expertise in the area(s) of assigned responsibility.

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

ACVIM

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| Carolyn J. Henry DVM, MS, Dipl. ACVIM (Oncology) |
| Leah Cohn DVM, PhD, Dipl. ACVIM (Internal Medicine) |
| Carol Reinero DVM, MS, Dipl. ACVIM (Internal Medicine) |
| Kim Selting DVM, MS, Dipl. ACVIM (Oncology), Dipl. ACVR (radiation onc) |
| Jeffrey N. Bryan DVM, PhD, Dipl. ACVIM (Oncology) |
| Sandra Bechtel DVM, MS, Dipl. ACVIM (Oncology) |
| Dennis O'Brien DVM, PhD, Dipl. ACVIM (Neurology) |
| Joan Coats DVM, MS, Dipl. ACVIM (Neurology) |
| Dr. Marie Kerl DVM, Dipl. ACVIM (Internal Medicine) Dipl. ACVECC |
| Philip Johnson MRCVS, Dipl. ACVIM (equine) |
| Charles Maitz DVM, Ph.D. Dipl. ACVR (radiation oncology) |
| Tara J. Ehling DVM, Dipl. ACVR (radiation oncology) |

ACVS

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| Derek Fox DVM, PhD Dipl. ACVS (orthopedics) |
| Tony Mann DVM, MS Dipl. ACVS, Dipl. ACVECC (soft tissue) |
| Joanne Kramer DVM, Dipl. ACVS (equine) |

ACVP

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| Gayle C. Johnson DVM, MS, Ph.D. Dipl. ACVP |
| Linda M. Berent DVM, Ph.D., Dipl. ACVP |

V. Affiliation agreement:

If all of the training will not be accomplished on-site, please attach a copy of the affiliations agreement(s). Include the scope of the training and amount of time the resident will be away from the home institution.

VI. Facilities:

Briefly describe how the program meets the facility requirements.

Facilities include the following:

Two general purpose x-ray rooms in small animal radiology,

Room one is a 640 mA, 150 kVp high frequency floor mounted x-ray machine with

direct (Csl) digital image capture.

Room two is a 200 mA 125 kVp high frequency machine w/ floor mounted tube stand Direct (Csl) digital image capture.

Ultrasound room with GE Logiq 9 and GE Logiq E ultrasound machines
Both machines have 5 probes up to 14 MHz & multiple scanning modes

Special Procedures/Catheterization Lab
GE 9900 C-arm with 12 inch Image Intensifier.

Two general purpose x-ray rooms in large animal radiology

Room one is a 400 mA 125 kVp machine w/ suspended tube
Used for extremity radiography, interfaced to direct capture digital radiographic imaging system

Room two is a 400mA 125 kVp machine w/ suspended tube and bucky system
Used for thoracic, spinal and skull radiography and special procedures DDR (Csl) Wireless Panel

Toshiba Aquilion 8 CT scanner with usual accessories (Satellite clinic)

Toshiba Aquilion 64 CT scanner with usual accessories and Equine/Large animal imaging table with a 2500 pound weight limit.

Equistand II Gamma Camera with SPECT. w/ isotope lab

Phillips/ADAC C-PET+ Positron Emission Tomography System.
(will be replaced by Toshiba Celestion PET/CT (16 slice) in 3rd quarter of 2016

Toshiba Vantage Titan 3T MR. This instrument will come with all available software for it as well as a full complement of coils)

Siemens Oncor Sensation Plus dual energy linear accelerator with electrons
RayStation planning software

Varian 21EX dual energy linear accelerator with electrons (satellite clinic)

Four (4) portable high frequency MinXray radiographic units and portable, direct digital image capture system. Fugi CR system

ScilImage RIS/PACS & UVIS electronic medical records systems

QC equipment to support all equipment.

Film and electronic teaching files covering nearly all conditions encountered in our practice which require imaging.

VII. Clinical resources:

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| Indicate the approximate number of patients seen annually by the home institution? |
| What is the annual imaging caseload? 11,000 – 12,000 imaging studies |

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

| | |
|---|------------------------------------|
| Small animals (canine, feline) | 11,000 |
| Large animals (equine and food animals) | 2000 |
| Exotic animals | 40-50 Mostly raptors and dCamelids |

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

| | |
|-----------------------------|--|
| Small Animal Radiology: | approx. 9000 |
| Large Animal Radiology: | approx., 500 |
| Abdominal Ultrasound: | approx., 1800 |
| Computed Tomography: | approx.. 800 |
| Nuclear Medicine: | approx. 150 nuc med and 200 PET |
| Magnetic Resonance Imaging: | approx.. 800 |
| Other (specify): | 100 Fluoroscopy exam/procedures 50 orthopedic US |

VIII. Training content:

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| What percentage of imaging reports are typically available within 48 hours after the examination is conducted in typewritten or electronic form? 90% |
| If your answer is less than 75% please explain how reports are generated and how long it takes for the report to be available for review in typewritten form. NA |
| Of the preliminary reports generated from the imaging caseload what percentage are initially produced by the resident? Approximately 80% |
| What percentage of resident reports are reviewed by the imaging faculty prior to |

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| finalization of the report? 100% (residents do not have verification authority) |
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| 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% currently, will increase as faculty #'s increase |
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Please complete the table below

| | Approximate number of cases in the 30 months clinical experience |
|------------------------------|--|
| Small Animal Radiology: | 9000* |
| Large Animal Radiology: | 400* |
| Abdominal Ultrasound: | 2000* |
| Computed Tomography: | 800* |
| Nuclear Medicine: | 200* |
| Magnetic Resonance Imaging: | 900* |
| Elective (any of above) | |
| Required elective (specify): | |
| Total | 13,300 |

***As the primary reader of the studies. Since all studies are reviewed in rounds which residents are required to attend and interpretation is finalized in rounds each resident will see and have the opportunity to discuss and participate in the interpretation of nearly all cases performed during their program. This translates to an additional 1700 CT studies, 400 Nuclear Medicine and PET studies and 2000 MRI studies. As well as an additional 20,000 radiographic studies.**

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:

| Topic | Course number | Units |
|---------------|----------------------|--------------|
| Radiobiology: | NSEI 7328 | 3 |

The Physics of:

| | | |
|-----------------------|-----------------|----------|
| Diagnostic Radiology: | VMS 8489 | 1 |
|-----------------------|-----------------|----------|

| | | |
|---|-----------------|----------|
| Nuclear Medicine: | VMS 8487 | 2 |
| Ultrasonography: | VMS 8439 | 2 |
| CT: | VMS 8489 | 1 |
| MRI: | VMS 8489 | 1 |
| <p>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 attached sheets if necessary.</p> <p>In addition to the formal courses indicated above these topics are also reviewed in weekly book review sessions and other informal reviews and in rounds.</p> | | |

IX. Research Environment:

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| Over the last 5 years, what is the average number of peer reviewed publications, on which the IMAGING faculty listed under Direction and Supervision in IV above, are included as authors? 9 |
| What is the number of publications/submissions expected of a resident completing the program? 1-2 |
| If this is an established program, what percentage of residents have made formal research presentations at the annual ACVR or equivalent national meeting? >75% |
| <p>Is an advanced degree a requirement of the training program?</p> <p>Pursuit of a Master of Science in Veterinary Science or Radiological Sciences is required. If the resident candidate is interested and so chooses pursuit of a PhD is also supported through an area program. This requires an additional 1-2 years beyond the residency. We have had one resident choose this option and complete the program successfully to date.</p> |

X. Educational Environment:

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| How many lectures or scientific presentations are expected of each resident during the course of their training? 4 as a minimum Most due substantially more than this. |
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XI. Evaluation 'Evaluation of residents and protection mechanisms':

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| <ul style="list-style-type: none"> At the 6 months reviews did your resident(s) successfully complete their residency training or did any of your resident(s) not adequately complete the last 6 months of training? All have been deemed making adequate progress at each review. List the current members of the residents' review committee. Dr. Lattimer, Dr. Dodam (department Chair) All radiologists have been on review committee in the past. The current situation is temporary. Department Chair serves as |
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an external mediator and advisor.

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

If conflict arises within the section with other residents or faculty the Section head is responsible for mediation. Conflict with personnel in other sections is mediated through the section heads and if necessary through the Department Chair and Hospital Director. If the conflict is with the Section head the Department Chair mediates. Unresolved conflicts may be addressed through the Universities Title IX office if appropriate. The resident has the right to address any situation involving and sort of discrimination through the Title IX office and faculty are required to report any such activity to the Title IX office and the administrative Chair of the Department. Extensive written documentation of deficiency in performance is required to terminate a residents program and this responsibility lies with the department chair.

XII. Teaching File:

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

The teaching file consists of both film and electronically preserved images and comprises several thousand cases. The file is continuously updated and added to. Studies are filed by anatomic area, modality and diagnosis. Full case files are available on all studies except a small number (<1%) which are the result of referral cases. The entire EMR is searchable with links to all radiographic images available to the on line PACS system. This is approximately 100,000 cases.

How is it maintained/updated?

All film studies are filed in the radiology section as outlined above. Links to the electronic files are maintained in a separate folder on the redundant college servers which are password and login protected. Updating or adding to the electronic file is a simple matter of exporting the files from the PACs server and is done during rounds when a case is considered to be of teaching interest and quality. Cases for inclusion are identified during daily rounds with the residents. Knowing the case number allows access to the complete medical record in the online database including the physical findings, clinicopathologic findings, radiographic interpretation and pathological diagnosis.

XIII. Conferences:

On average how many Known Case Conferences are conducted annually? **Approx. 45**

XIV. Literature resources:

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

The Veterinary Medical Library is located in an adjacent building and the J. Otto Lotts Medical Library is located in the Health Sciences Center Complex

approximately ½ mile away on the University of Missouri campus.

XV. Appendix:

(a) 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), check the appropriate box. Complete the table for residents finishing 4 years ago (Year 4), 3 years ago (Year 3), etc.

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

(b) 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.

Residency schedule chart

| | Classes | Technical Training | Small An. Radiology | Large An. Radiology | Staff rounds | CT/MRI Training | Ultrasound | Nuclear Medicine | Resident Review & KCC | Monthly Off Clinic Time | Board Prep & Out Rotations |
|----------------------|---------|--------------------|---------------------|---------------------|--------------|-----------------|------------|------------------|-----------------------|-------------------------|----------------------------|
| Year 1 | | | | | | | | | | | |
| July | | XXXX | | | XXXX | | | | XXXX | | |
| August | X | XXXX | | | XXXX | | | | XXXX | | |
| September | XXXX | XXXX | | | XXXX | | | | XXXX | | |
| October | XXXX | | | | XXXX | | XXXX | | XXXX | | |
| November | XXXX | | | | XXXX | | XXXX | | XXXX | | |
| December | XX | | | | XXX | | XXX | | XXX | | |
| January | XX | | XXXX | | XXXX | | | | XXXX | | |
| February | XXXX | | XXXX | | XXXX | | | | XXXX | | |
| March | XXXX | | XXXX | | XXXX | | | | XXXX | | |
| April | XXXX | | XXXX | | XXXX | | | | XXXX | | |
| May | X | | XXXX | | XXXX | | | | XXXX | | |
| June | | | XX | | XX | | | | XX | | |
| Year 2 | | | | | | | | | | | |
| July | | | | XXX | XXXX | XXX | | XXX | XXXX | | X |
| August | X | | | XXX | XXXX | XXX | | XXX | XXXX | | X |
| September | XXXX | | | XXX | XXXX | XXX | | XXX | XXXX | | X |
| October | XXXX | | | XXX | XXXX | XXX | | XXX | XXXX | | X |
| November | XXXX | | | XXX | XXXX | XXX | | XXX | XXXX | | X |
| December | XX | | | XXX | XXX | XXX | | XXX | XXX | | X |
| January | XX | | | XXX | XXXX | XXX | | XXX | XXXX | | X |
| February | XXXX | | XX | | XXXX | | X | | XXXX | | X |
| March | XXXX | | XX | | XXXX | | X | | XXXX | | X |
| April | XXXX | | XX | | XXXX | | XX | | XXXX | | X |
| May | X | | XX | | XXXX | | XX | | XXXX | | X |
| June | | | XX | | XX | | X | | XX | | |
| Year 3 | | | | | | | | | | | |
| July | | | XX | X | XXXX | X | X | X | XXXX | | X |
| August | X | | XX | X | XXXX | X | X | X | XXXX | | X |
| September | XXXX | | XX | X | XXXX | X | X | X | XXXX | | X |
| October | XXXX | | XX | X | XXXX | X | X | X | XXXX | | X |
| November | XXXX | | XX | X | XXXX | X | X | X | XXXX | | X |
| December | XX | | X | X | XXX | X | X | X | XXX | | X |
| January | XX | | XX | X | XXXX | X | X | X | XXXX | | X |
| February | XXXX | | XX | X | XXXX | X | X | X | XXXX | | X |
| March | XXXX | | XX | X | XXXX | X | X | X | XXXX | | X |
| April | XXXX | | XX | X | XXXX | X | X | X | XXXX | | X |
| May | X | | XX | X | XXXX | X | X | X | XXXX | | X |
| June | | | XX | X | XX | X | X | X | XX | | |
| Year 4 | | | | | | | | | | | |
| July | | | XX | X | XXXX | X | X | X | XXXX | | |
| August | | | XX | X | XXXX | X | X | X | XXXX | | |
| September | | | XX | X | XXXX | X | X | X | XXXX | | |
| October | | | XX | X | XXXX | X | X | X | XXXX | | |
| November | | | XX | X | XXXX | X | X | X | XXXX | | |
| December | | | X | X | XXX | X | X | X | XXX | | |
| January | | | X | | XXXX | | X | | XXXX | | XX |
| February | | | | | XXXX | | X | | XXXX | | XXX |
| March | | | | X | XXXX | X | | X | XXXX | | XXX |
| April | | | X | | XXXX | | | | XXXX | | XXX |
| May | | | | X | XXXX | X | | X | XXXX | | XXX |
| June | | | XX | | XX | | | | XXXX | XX | |
| Weeks During Program | | | 72 | 41 ** | 196 | 41 ** | 38 | 41 ** | 196 | 24 | 14 |

x denotes one week of assignment

** Large Animal Radiology, CT/MRI & Nuclear Medicine are scheduled concurrently due to caseload and proximity of these modalities to each other in our hospital.

Note: Each month scheduled as 4 weeks for 48 weeks per year to allow for vacation, meetings, etc.