

# ACVR Diagnostic Imaging Residency Training Program Application

This application is required for institutions desiring ACVR accreditation of a new residency training program and for institutions requesting re-accreditation of an existing program. Before beginning the application process, all applicants should review the most recent version of the [ACVR Residency Program Essential Training Standards and Requirements](#) (RPE) document (accessed from the Essentials Homepage) in detail. Use the RPE as a reference when completing the application form, as the contents you provide herein will be evaluated by the Residency Standards and Evaluation Committee (RSEC) against the published RPE standards. This application form follows the headings of the RPE. All terms used in this application have same definitions as those in the RPE, and no information provided in the application form itself will supersede that published in the RPE. During the application review process, the Chair or Assistant Chair of the RSEC may contact the applicant for additional information or clarification.

*\*Note: If you wish to save your submission and complete it later, click the save button located at the bottom of the pages. You will be emailed a link to complete your form at a later date.*

## ACVR Residency Training Program Application

### Program Summary

The Residency Director of the program is expected to be the primary applicant and contact person for this application. The Residency Director must be located at the primary training institution.

<b>Institution Name</b>	Kansas State University College of Veterinary Medicine
<b>Residency Program Director Name</b>	David Biller
<b>Residency Program Director Email</b>	biller@vet.ksu.edu

### Program Type

**What type of residency program is being requested?**

Traditional Residency Program

**If approved, what is the proposed start date of this residency program?**

Sunday, January 31, 2021

### Objectives

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

- Advanced training in diagnostic imaging
  - Develop skills in diagnostic imaging to include: diagnostic and special radiographic procedures; ultrasound; CT; MRI; nuclear imaging.
- To provide instruction in the basic principles of radiobiology, radiation physics, radiation protection, radiation dosimetry, radiation safety, radiological anatomy and physiology, and pathologic physiology.
- Training in clinical investigation
- Training in scientific writing and literature evaluation
- Training in didactic teaching and scientific presentations
- Preparation for certification examination by the American College of Veterinary Radiology
- Develop skills for communication with clients and referring veterinarians

## Training Period

What is the total length of the training program? 36

What is the anticipated length of supervised clinical training a resident will experience during this program? 30

Will the resident(s) in this program be eligible to take the ACVR Preliminary Exam in September of their third year? ☒ Yes

What are the responsibilities of the resident(s) during non-clinical portions of the program?

6 months non-clinical portion of program

6 months non-clinical portion of program

1) Vacation,

2) Planning, completion and presentation of a research project.

3) Preparation for boards

4) Externships (ie. Cardiology, exotics)

This is determined on an individual basis. Past has included opportunities for equine or seeing more MRI (neuro cases).

## ACVR Residency Training Program Application

### Direction and Supervision

When calculating time commitment in this section, you may consider a 100% (full time) duty schedule to consist of 48 weeks per year with 8 hours per day or 40 hours per week.

### Residency Director

Please review the Residency Director requirements and responsibilities in the [ACVR Residency Program Essential Training Standards and Requirements](#) (RPE) document. Note that the Residency Director will be required to provide at least 24 weeks of clinical duty per year in primary support of residents in this program and to meet all other qualifications of a Supervising Diplomate.

Is the applicant Residency Director for this program prepared to meet these requirements? ☒ Yes

What percentage of the Residency Director's time is committed to clinical service at the primary training institution? 60

How many weeks per year will the Residency Director be on clinical service and teaching residents at the primary training institution? 31

## ACVR Residency Training Program Application

### Additional Training Diplomates

Please review the definitions and responsibilities of [Supervising Diplomate and Supporting Diplomate](#) in the RPE document. Note that Supervising Diplomates will be required to provide at least

10 weeks of clinical duty in primary support of residents in this program, and are expected to participate in all facets of residency training. Supporting Diplomates aid in residency training, but provide support that is limited, as by modality (e.g. only works in ultrasound), time commitment (e.g. clinical duty < 10 weeks per year), or other constraints that prevent them from qualifying as a Supervising Diplomate.

Provide a copy of affiliation agreements with any diplomates that are located at an external institution (see Affiliation Agreement item at the end of this section).

**Excluding the Residency Director, please list all training diplomates who will act as Supervising Diplomates of this residency program. Indicate the approximate number of hours per year each supervisor will be scheduled on clinical duty with primary support of residents and, if applicable, any specific areas of instructional responsibility (e.g. trains mostly in small animal, trains mostly in MRI, etc). If a 'Supervising Diplomate' position will be comprised of multiple radiologists, please list the cohort as a single entity or institution for this question (e.g. "teleradiologists" or private institution name)**

Name: Mackenzie Hallman

Hours/Year: 760

Specific Areas and/or Limitations of Instructional Responsibility: All areas

Name: Clay Hallman

Hours/Year: 1,040

Specific Areas and/or Limitations of Instructional Responsibility: All areas

Name: Nicky Cassel

Hours/Year: 1,040

Specific Areas and/or Limitations of Instructional Responsibility: All areas

**If any Supervising Diplomate position is comprised of >1 radiologist, list each individual member of the Supervising cohort here. Indicate the approximate percentage of hours each individual will contribute to the total cohort hours listed above as well as any specific areas of instructional responsibility and/or limitations in the scope of supervision (e.g. does not participate in ultrasound instruction; only trains residents in large animal, etc).**

Name: David Biller

% of Hours: 75

Specific Areas of Instructional Responsibility: all areas

Name: Clay Hallman

% of Hours: 50

Specific Areas of Instructional Responsibility: all areas

Name: Nicky Cassel

% of Hours: 50

Specific Areas of Instructional Responsibility: all areas

Name: Mackenzie Hallman

% of Hours: 25

Specific Areas of Instructional Responsibility: all areas

**Please list all training diplomates who will act as Supporting Diplomates of this residency program. Indicate how many hours per year each Supporting Diplomat will be scheduled on clinical duty with primary support of residents and any specific areas of instructional responsibility and/or limitations in the scope of this support (e.g. only trains residents in ultrasound, does not participate in large animal training, does not finalize imaging reports, etc).**

Name: David Biller

Hours/Year: 40

Specific Areas of Instructional Responsibility: all

In addition to ACVR/ECVDI Diplomates, the program must arrange for the resident(s) to have direct access to specialists in other areas. Please identify one member in each of the specialty colleges listed below that has agreed to support this program through clinical activity that allows regular interactions between the specialist and the diagnostic imaging residents (e.g. discussion of diagnostic work up, imaging findings, or patient outcomes, and/or participation in interdisciplinary rounds, etc). Indicate whether the specialist is located on-site at the primary institution at an external institution. Provide a copy of affiliation agreements with any non-ACVR/ECVDI diplomates that are located at an external institution (see Affiliation Agreement section at the end of this application). Upon completion of this application, the below individuals will receive an email requesting acknowledgement of their support of your residency program.

**ACVIM Member Name** Ken Harkin, DVM, DACVIM

**ACVIM Member Institution** KSU CVM

**ACVIM Member Email** harkin@vet.k-state.edu

**ACVS Member Name** Jim Roush, DVM, DACVS

**ACVS Member Institution** KSU CVM

**ACVS Member Email** roushjk@vet.k-state.edu

ACVP Member Name	Brad Njaa, DVM, ACVP
ACVP Member Institution	KSU CVM
ACVP Member Email	blnjaa@vet.k-state.edu

## ACVR Residency Training Program Application

### Resident:Supervising Diplomate Ratio

The number of residents in the program cannot exceed twice the number of Supervising Diplomates **on-site**. Remote Supervising Diplomates will not count when calculating the maximum residents allowed in a given program.

What is the maximum number of imaging interns you will have enrolled in this training program at any given time?

5

## ACVR Residency Training Program Application

### Facilities

Review the Facility Requirements listed in the RPE document. Note also that residents should have opportunities to be involved with image acquisition and protocol set-up.

Does this residency training program provide on-site access to modern equipment for the following modalities?

Digital or Computed Radiography	Yes
Fluoroscopy	Yes
Ultrasound with Doppler Capability	Yes
MRI	Yes
Fan-beam CT	Yes
Nuclear scintigraphy	Yes

**Briefly describe how this program meets the facility requirements, including the specific type of CT and MRI units available. Explain how your program will train residents in modalities for which equipment is not located on site, providing affiliation agreements if applicable. (see Affiliation Agreement item at the end of this section)**

The radiology facilities include a main reading area (5 diagnostic work stations), a second smaller reading area with a diagnostic work station. A separate area in the ultrasound room used exclusively for ultrasound interpretation. There is 1 small animal diagnostic radiology room with Agfa DR. There is a shared large and small animal diagnostic room with Agfa DR and Eklin DR portable xray unit and overhead X-ray tube. There is a small animal diagnostic room with a digital fluoroscopy unit that can also use the AGFA DR.

We have a second equine diagnostic imaging area in a separate building (Equine performance testing center) with an Eklin DR unit.

We have one room used for nuclear medicine. We have a Siemens gamma camera with NucLear Mac computer.

We have one CT room with a GE 16 slice machine. We have an MRI room with a 3 Tesla Cannon MRI. We have large animal tables for both MRI and CT. We have an ultrasound room with 2 units (one is Toshiba Aplio 500 and the second ultrasound machine is Cannon Aplio 800). We have Carestream PAC system that's connected to ultrasound, nuclear medicine, CT, MR, and all DR units.

# ACVR Residency Training Program Application

## Clinical Resources and Training Content

Review the clinical resource and training content requirements listed in the RPE document

**What is the average annual caseload at the primary institution over the past 3 years? This number will include all patient visits whether or not they contribute to the annual imaging caseload.** 17413

**What is the average annual imaging caseload at the primary institution over the past 3 years? Each body region imaged for a given patient (e.g. thorax, abdomen, spine, etc) will count as a single study.** 7748

What is the average annual imaging caseload at the primary institution over the past 3 years in the following categories?

Small animal radiology	4727
Large animal radiology	374
Abdominal ultrasound	1643
Non-abdominal ultrasound	300
Computed tomography	455
Magnetic Resonance Imaging	0
Nuclear scintigraphy	5
Other (Specify)	MRI 244

**Indicate the approximate species breakdown of the imaging caseload at the primary institution in the following categories:**

- Small animals (canine, feline): 84%
- Large animals (equine, bovine, porcine, etc.): 15%
- Avian, Exotic, and Wildlife animals: 1%

Which of the following types of imaging cases will the resident(s) have direct, on-site exposure to at the primary institution during the residency program?

<b>Echocardiography</b>	Yes
<b>Large animal ultrasound</b>	Yes
<b>Nonabdominal small animal ultrasound (i.e. cervical, musculoskeletal)</b>	Yes
<b>Food/fiber animal imaging</b>	Yes
<b>Exotics imaging</b>	Yes
<b>Teleradiology/Referral imaging</b>	Yes

**Explain how the resident(s) in this program will gain experience in any of the above types of imaging cases that are NOT available at the primary institution. Provide affiliation agreements, if applicable. (see Affiliation Agreement item at the end of this section).**

NA

## ACVR Residency Training Program Application

**What percentage of the total imaging caseload at the primary institution results in a written imaging report being generated by either the residents or the training radiologist diplomates in this program?** 100

**What percentage of the preliminary reports generated from the imaging caseload are initially produced by the resident(s) in this program?** 95

**Does this institution concurrently support the training of diagnostic imaging interns?** No

**What percentage of resident-generated reports are reviewed by training diplomates prior to finalization of the report?** 0

**What is the average turnaround time for resident-generated preliminary reports to be finalized by training diplomates?**

NA. We do not have training diplomates here.

**What percentage of all imaging reports (resident and diplomate generated) is finalized and available to requesting clinicians within 48 hours after the exam is submitted for radiologist consult?** 100

For each category below, calculate the approximate number of cases that a single resident will interpret at the primary institution with radiologist feedback during the course of the entire residency program. These numbers should be calculated using the annual imaging caseload adjusted to include only those with written reports generated by the residents. In general, this number should then be divided by the total number of residents in a program during a given year.

If external rotations for the resident(s) are employed to increase the resident caseload in any given category, please be sure to upload affiliate agreements that include the expected number of reports that residents can expect to generate (with radiologist feedback) for cases in those categories.

**Small animal radiology** 4200

**Large animal radiology** 700

**Abdominal ultrasound** 1300

**Non-abdominal ultrasound** 125

**Computed tomography** 350

**Magnetic resonance Imaging** 120

**Nuclear scintigraphy** 25

**How many ultrasound exams will a single resident perform with radiologist supervision and feedback during the course of the entire program? Scans for which the resident writes a report but does not acquire images are excluded.** 1300

**Do residents in this program have ample hands-on training and practice opportunities to become proficient in the performance of ultrasound guided fine needle aspirates and biopsies?**

No

Please indicate whether this training program includes formal courses in any of the following topics:

**Radiobiology**

No

**Nuclear Medicine**

No

**Ultrasonography**

No

**Computed Tomography**

No



**Magnetic Resonance Imaging**

No

**Other**

No

**Briefly describe the formal courses that are available for the resident(s) in this program by indicating the institution, course title, course number, and credit hours as well as any other relevant information. For any topics for which formal course work is not provided for the resident(s), please explain how educational objectives in these topics will be met.**

We do not have formal courses

We do have

Weekly Journal club

Weekly Book club

Weekly Physics review

**Do residents have access to a majority of the written pathology reports that are generated from patients included in this imaging caseload?**

No

## **ACVR Residency Training Program Application**

### **Research Environment**

Review the Research Requirements listed in the RPE document.

**Over the last five years, what is the average number of peer reviewed publications on which the training diplomates (Supervising and Supporting diplomates) of this program are included as authors? (total number of publications in last 5 years among all training diplomates divided by the number of training diplomates)**

10

**How many peer-reviewed publications are expected of a resident completing the program?**

2

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

30

**Briefly describe if/how residents are encouraged to engage in investigative work and what mechanisms are in place for training diplomates to support this work.**

The residents are expected to produce 2 house officer rounds a year (6 during residency). These are usually a product of their research (including prospective and retrospectives). They are mentor by an imaging faculty member (although medicine and surgery faculty have also utilized our residents in scholarship). They can also create an idea of their own for research. They can get funded from small internal department grants as well as outside sources.

## Educational Environment

Review the Educational Environment expectations listed in the RPE document.

**Briefly describe the type and extent of teaching opportunities that are provided to the resident throughout the training program.**

This includes, 2 lectures given in the first year anatomy course on normal anatomy (every year), 1-2 lectures in the didactic radiology course for second year veterinary students (every year) and 2 presentations to the House Officer's rounds per year of their residency.

**Briefly describe the nature and scope of the teaching file available to the resident(s) in this program and how it is maintained/updated.**

The file consists of cases of all organ systems, modalities and species. They are available on the PACS (there is a search mechanism whereby they can find cases of interest). These are updated daily during resident rounds. There is also the student teaching cases (4th and 2nd year teaching files) available. There is computer based teaching cases available through the second year class. Cases are picked by radiologists and residents on a daily basis during resident rounds.

**How many Known Case Conferences are conducted annually?** 48

**Describe how the resident(s) in this program will attain direct and consistent medical library access and/or how they will access research tools and medical literature including the suggested references listed in the ACVR Preliminary Examination study guide.**

All this is made available to them digitally through our library system.

## ACVR Residency Training Program Application

### Evaluation and Protection of Residents

**Did all of your current residents adequately complete the last 6 months of training?**

Yes

**List the current members of the resident review committee.**

David Biller  
Mackenzie Hallman  
Clay Hallman  
Nicky Cassel

**Describe the internal mechanisms in place at your institution to protect the resident(s) if personal or organizational conflicts arise. Include the management hierarchy for residents and procedures by which residents would report workplace misconduct.**

Their mentor (each resident has a selected mentor)  
The Section head (David Biller)  
The Department Resident Committee  
The Department Head

## ACVR Residency Training Program Application

### Appendix

Please provide the following information regarding preliminary and certifying board exam pass rates for residents in your program over the past five years.

### Preliminary Board Exam Pass Rate

## 2020

Number Of Prelim Board Eligible Residents: 1

Number of Residents That Took Prelim Exam: 1

Number of Residents That Passed On 1st Attempt:  
1

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

## 2019

Number Of Prelim Board Eligible Residents: 0

Number of Residents That Took Prelim Exam: 0

Number of Residents That Passed On 1st Attempt:  
0

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

## 2018

Number Of Prelim Board Eligible Residents: 0

Number of Residents That Took Prelim Exam: 0

Number of Residents That Passed On 1st Attempt:  
0

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

**2017**

Number Of Prelim Board Eligible Residents: 1

Number of Residents That Took Prelim Exam: 1

Number of Residents That Passed On 1st Attempt:  
1

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

**2016**

Number Of Prelim Board Eligible Residents: 1

Number of Residents That Took Prelim Exam: 1

Number of Residents That Passed On 1st Attempt:  
1

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

## **Certifying Board Exam Pass Rate**

**2020**

Number of Certifying Board Eligible Residents: 1

Number of Residents That Took Certifying Exam: 1

Number of Residents That Passed On 1st Attempt:  
1

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

## 2019

Number of Certifying Board Eligible Residents: 0

Number of Residents That Took Certifying Exam: 0

Number of Residents That Passed On 1st Attempt:  
0

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

## 2018

Number of Certifying Board Eligible Residents: 1

Number of Residents That Took Certifying Exam: 1

Number of Residents That Passed On 1st Attempt:  
1

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

## 2017

Number of Certifying Board Eligible Residents: 1

Number of Residents That Took Certifying Exam: 1

Number of Residents That Passed On 1st Attempt:  
1

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

2016

Number of Certifying Board Eligible Residents: 1

Number of Residents That Took Certifying Exam: 1

Number of Residents That Passed On 1st Attempt:  
1

Number of Residents That Passed After Multiple  
Attempts: 0

Number of Residents That Have Not Passed: 0

## Program Schedule

Upload a schedule for your residents that outlines their clinical and non-clinical work over the course of the residency program. This may be a master schedule or duty roster for your entire radiology section, if desired. If available, an example weekly or monthly rounds schedule can also be included.

### Program Schedule



schedule residency.docx

## Affiliation Agreements

Upload digital copies of any affiliation agreements that have not been included elsewhere in this document. Refer to the RPE document for an explanation of what information should be included in such agreements.