

# 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
<b>Residency Program Director Name</b>	Clay Hallman
<b>Residency Program Director Email</b>	hallman@vet.k-state.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?**

Monday, July 8, 2024

### Objectives

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

1. Advanced training in diagnostic imaging. Develop skills in diagnostic imaging to include diagnostic radiology, special radiographic procedures, ultrasound, CT and MRI.
2. Training in clinical investigation.
3. Training in scientific writing and literature evaluation.
4. Training in didactic teaching and scientific presentations.

5. Preparation for Certification Examination by the American College of Veterinary Radiology.
6. Develop communication skills.

## 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?**

1. Preparation for board examination.
2. Scholarly activity such as manuscript preparation for publication and preparation of house officer seminars.
3. Vacation
4. Externships as determined on an individual basis for additional opportunities in areas such as interventional, equine and cardiology.

## 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?** 50

**How many weeks per year will the Residency Director be on clinical service and teaching residents at the primary training institution?** 26

## 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: Nicky Cassel

Hours/Year: 1040

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

Institution: Kansas State University

Name: Mackenzie Hallman

Hours/Year: 760

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

Institution: Kansas State University

Name: Aurelie Brewier

Hours/Year: 1460

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

Institution: Kansas State University

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.

<b>ACVIM Member Name</b>	Ken Harkin
<b>ACVIM Member Institution</b>	Kansas State University
<b>ACVIM Member Email</b>	harkin@vet.k-state.edu
<b>ACVS Member Name</b>	Jim Roush
<b>ACVS Member Institution</b>	Kansas State University
<b>ACVS Member Email</b>	roushjk@vet.k-state.edu
<b>ACVP Member Name</b>	Brandon Plattner
<b>ACVP Member Institution</b>	Kansas State University
<b>ACVP Member Email</b>	blplattner@vet.k-state.edu

## ACVR Residency Training Program Application

### Resident:Supervising Diplomat 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?** 3

## 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?

<b>Digital or Computed Radiography</b>	<input checked="" type="checkbox"/> Yes
<b>Fluoroscopy</b>	<input checked="" type="checkbox"/> Yes
<b>Ultrasound with Doppler Capability</b>	<input checked="" type="checkbox"/> Yes
<b>MRI</b>	<input checked="" type="checkbox"/> Yes

Fan-beam CT

Yes

Nuclear scintigraphy

No

**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)**

Main reading room with 5 diagnostic work stations

Second, small reading area with an additional work station

Additional diagnostic work station in Ultrasound

2 small animal diagnostic radiology suites with Samsung DR, 1 of which also has digital fluoroscopy

Shared large and small animal imaging suite with Agfa DR and portable Ekin DR unit as well as overhead X-ray tube

CT room currently with GE 16 slice machine upgrading to Siemens 128 slice machine by August 2024

3 Tesla Canon MRI

Equine compatible tables in CT and MRI

US has 2 units - Canon Aplio 800, Toshiba Aplio 500

Carestream PAC system connected to all modalities and workstations with voice dictation software

**Please describe how residents will gain experience in image acquisition and protocol set-up for each of these modalities (excluding nuclear medicine).**

N/A - all equipment is on site

## 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.**

22839

**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.**

9335

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

**Small animal radiology**

5682

**Large animal radiology**

661

**Abdominal ultrasound**

1925

<b>Non-abdominal ultrasound</b>	285
<b>Computed tomography</b>	532
<b>Magnetic Resonance Imaging</b>	321
<b>Nuclear scintigraphy</b>	0

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

Small animals (canine, feline): 82

Large animals (equine, bovine, porcine, etc.): 17

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).**

N/A

## 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?**

Yes

**If yes, indicate the maximum number of imaging interns the institution will train concurrently, what percentage of the preliminary reports generated from the imaging caseload will be initially produced by the intern(s), and how this affects the resident imaging report caseload.**

1

<10% and limited to radiographs only - no US or cross-sectional  
This has minimal impact on resident reporting caseload.

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

100

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

48 hours

**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?**

85

**Please describe how after-hours/weekend/holiday cases are handled at the primary institution. How does this affect resident-reported imaging caseload?**

Hospital clinicians have the option to send after-hours radiographic studies out for teleradiology interpretation if a report is desired before the morning of the next business day. Otherwise, residents complete preliminary reports on after hours radiographic cases. Residents and faculty are on-call for other imaging modalities and complete reports in 48 hours or less for those cases.

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** 5500

**Large animal radiology** 700

**Abdominal ultrasound** 1890

**Non-abdominal ultrasound** 270

**Computed tomography** 520

**Magnetic resonance Imaging** 330

**Nuclear scintigraphy** 0

**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.** 2160

**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?**

Yes

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

**Physics of Diagnostic Imaging**

No

**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.**

N/A

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

Yes

**Will the resident(s) in this program attain an advanced degree (MS, PhD) at the conclusion of the program?**

Not required, however MS degree program is available for residents if desired.



# 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)** 20

**How many peer-reviewed publications are expected of a resident completing the program?** 1

**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.**

Residents participate in collaborative projects with other specialties with mentorship from imaging faculty as well as other specialists.

Imaging residents have also, in recent years, had primary authorship roles in prospective and retrospective studies as well as case reports and imaging diagnosis publications with mentorship from 1-2 imaging faculty members.

Departmental and college funds are available to support resident research projects and other scholarly activities.

## Educational Environment

Review the Educational Environment expectations listed in the RPE document.

**Please list and enumerate the formal presentations that are expected of each resident during the course of their training. In general, didactic lectures, departmental seminars, scientific presentations, Continuing Education presentations, and similar are considered "formal". Informal topic rounds, journal club, small group teaching (like student rounds), student labs, and similar events should not be included.**

Residents are expected to produce 2 house officer seminars per year (6 total for the residency).

Residents also give 1-2 didactic lectures per year during their residency in radiographic anatomy, physics, radiation safety, radiography and/or ultrasound.

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

Residents give 1-2 didactic lectures per year during their residency in radiographic anatomy, physics, radiation safety, radiography and/or ultrasound.

Residents participate as co-instructors in radiology labs for second year students and ultrasound wet-labs for third year students.

Residents also participate in clinical teaching with case-based radiographic rounds and ultrasound wet-labs for fourth year veterinary students.

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

A teaching file containing cases of all modalities, body regions and numerous species is maintained on our PACS system. Cases are searchable via key words including diagnoses and imaging findings as well as age, breed, species, etc. Cases are added regularly during review of resident reports. Cloud-based, anonymized teaching cases are also available in 2nd and 4th year teaching files with additions made at least annually during the academic cycle.

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

**Describe the nature and frequency of resident rounds ("other educational events") planned for this program. You may upload an example schedule with the general program schedule that is requested at the end of this application.**

See attached program schedule.

**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.**

Kansas State University maintains an medical library within the Veterinary College with two, dedicated librarians and additional support staff. Through the library, residents have online access to digital textbooks and numerous veterinary and human medical journals.

## **ACVR Residency Training Program Application**

### **Evaluation and Protection of Residents**

**For existing programs, list the names, email contact information, and start/end dates of your current residents.**

Stacy McHaney – 7/14/2021 – 7/11/2024

Lauren Ryon – 7/13/2022 – 7/18/2025

Lorelei Bojorquez - 7/23/2023 - 7/22/2026

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

Yes

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

Clay Hallman

Nicky Cassel

Mackenzie Hallman

Aurelie Brewier

**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.**

In the event that a conflict could not be satisfactorily addressed via direct communication between parties or with involvement of immediate supervisors, Kansas State University Human Capital Services has a dedicated dispute resolution process. Essentially disputes would be communicated in the following order - immediate supervisor, section head, department head, dean, director of employee relations and finally an

appeals board. If conflict is between the resident and an immediate supervisor or section head, direct communication with the department head is encouraged.

## 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: N/A

Number of Residents That Have Not Passed: N/A

**2019**

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: N/A

Number of Residents That Have Not Passed: N/A

## 2018

Number Of Prelim Board Eligible Residents: 2

Number of Residents That Took Prelim Exam: 2

Number of Residents That Passed On 1st Attempt: 2

Number of Residents That Passed After Multiple Attempts: N/A

Number of Residents That Have Not Passed: N/A

## 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: N/A

Number of Residents That Have Not Passed: N/A

## 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: N/A

Number of Residents That Have Not Passed: N/A

## 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: N/A

Number of Residents That Have Not Passed: N/A

## 2019

Number of Certifying Board Eligible Residents: 2

Number of Residents That Took Certifying Exam: 2

Number of Residents That Passed On 1st Attempt: 2

Number of Residents That Passed After Multiple Attempts: N/A

Number of Residents That Have Not Passed: N/A

## 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: N/A

Number of Residents That Have Not Passed: N/A

**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: N/A

Number of Residents That Have Not Passed: N/A

**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: N/A

Number of Residents That Have Not Passed: N/A

## 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



KSU residency schedule.pdf

## 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.