ACVR | Diagnostic Imaging

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.

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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.

Institution Name   UC Davis

Residency Program Director Name   Kathryn Phillips

Residency Program Director Email   klphilli@ucdavis.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?   Wednesday, January 19, 2022

Objectives

Succinctly state the objectives of the training program.

The residency teaches clinical proficiency, image interpretation and report writing in radiology, ultrasound, computed tomography, magnetic resonance imaging and nuclear medicine. Completion of the training program fulfills the requirements of the American College of Veterinary Radiology, and makes the candidate eligible for Diplomate status. The program prepares the resident for a career in private practice, teleradiology or academic practice.

Training Period

What is the total length of the training program? 48

What is the anticipated length of supervised clinical training a resident will experience during this program? 40

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?

- On call is split between the resident co-hort with the first year residents having an assigned on-call back up resident. On weekends during the day there is always an assigned back up on call resident.
- Research project - the residents are expected to participate in a research project and present it at the house office seminar day and hopefully a scientific conference such as ACVR
- Study for boards

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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? 70

How many weeks per year will the Residency Director be on clinical service and teaching residents at the primary training institution? 36

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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: Mathieu Spriet   Hours/Year: 1040

Specific Areas and/or Limitations of Instructional Responsibility: Equine imaging

Institution: UC Davis

Name: Eric Johnson   Hours/Year: 624

Specific Areas and/or Limitations of Instructional Responsibility: Small animal imaging

Institution: UC Davis

Name: Ehren McLarty   Hours/Year: 1456

Specific Areas and/or Limitations of Instructional Responsibility: All species and all modalities

Institution: UC Davis

Name: Kelsey Brust

Hours/Year: 1456 - Starting July 2022

Specific Areas and/or Limitations of Instructional Responsibility: Small animal imaging

Institution: UC Davis

Name: Allison Zwingenberger

Hours/Year: 416

Specific Areas and/or Limitations of Instructional Responsibility: Small animal imaging

Institution: UC Davis

Please list all training diplomates who will act as Supporting Diplomates of this residency program. Indicate how many hours per year each Supporting Diplomate 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: Erik Wisner   Hours/Year: 320

Specific Areas of Instructional Responsibility: CT/MRI

Institution: UC Davis

Name: Rachel Pollard   Hours/Year: 416

Specific Areas of Instructional Responsibility: Emergency/Weekends

Institution: UC Davis

Name: Antech Imaging services

Hours/Year: 160 hrs

Specific Areas of Instructional Responsibility:
Teleradiology

Institution: Antech Imaging services

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	Carrie Palm
ACVIM Member Institution	UC Davis
ACVIM Member Email	cpalm@ucdavis.edu
ACVS Member Name	Michelle Steffey
ACVS Member Institution	UC Davis
ACVS Member Email	masteffey@ucdavis.edu
ACVP Member Name	Verena Affolter
ACVP Member Institution	UC Davis
ACVP Member Email	vkaffolter@ucdavis.edu

Upload any affiliation agreement(s) with Supervising Diplomates, Supporting Diplomates, or Diplomates in other specialties that are located at external institutions. (see Affiliation Agreement section at the end of this application.) Refer to the RPE document for an explanation of what information should be included in such agreements.

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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?
0

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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)

Small animal radiology Units
•   Two Summit Innovet high frequency radiographic units (install 1/14).
•   Eklin DR detection systems for all units (installed 1/2005 with regular Microsoft software updates)
Large animal radiology Units:
•   2 CPI Indico 150 kV, 1000 mA Generator x-ray tubes maintenance/updated 2020
•   2 Next Sound DR detection systems 2016
•   Vet Rocket portable DR -field service 2016
•   Min-X TR90 90 kV/18.6 mA portable 2016
•   Min-X TR90b 90 kV/10 mA portable 2016
Fluoroscopy:
•   Philips Omni Diagnost Eleva (installed 2005 new software 8/2019)
Ultrasounds:
•   2 Toshiba/Cannon Aplioi700 small animal ultrasound
•   2 Phillips iE33 in CT & SAUS
•   Large animal – Esaote My Lab 2, Esaote my lab 7, Esaote my lab gamma
•   Cardio – 2 Phillips iE33 and Phillips EPIQ7C

CT:
- General Electric Lightspeed 16 slice
- NewTom 5G cone beam 2015

MRI:
- GE 1.5 Tesla HiSpeed magnet GE signa, HDxT 16.0 (software upgrade 12/12)
- Halmarq 0.3 Tesla magnet (install 6/05)

Nuclear medicine:
- Gamma Camera: Enhanced Technologies system, IS2 software, Mirage viewing system.
- PiPET, BrainBiosciences (installed 8/16)
- MiniExplorer United imaging installed 2019

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

The first two weeks of the residency the residents spend with the technologist in small and large animal radiology and ultrasound. During this time they learn how to acquire images, schedule exams, charge for exams and operate PACS. Then they have 2 weeks as second year residents were they work with the technologist acquiring images on the CT and MRI. Starting in the second year the residents run the CT and MRI after hours for emergencies.

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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.	25000
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.	16668

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

Small animal radiology	7636
Large animal radiology	1684
Abdominal ultrasound	4664
Non-abdominal ultrasound	584
Computed tomography	1112

Magnetic Resonance Imaging   868

Nuclear scintigraphy   48

Other (Specify)   PET 56

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

Small animals (canine, feline): 75%

Large animals (equine, bovine, porcine, etc.): 18%

Avian, Exotic, and Wildlife animals: 7 %

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?

Echocardiography   Yes

Large animal ultrasound   Yes

Nonabdominal small animal ultrasound (i.e. cervical, musculoskeletal)   Yes

Food/fiber animal imaging   Yes

Exotics imaging   Yes

Teleradiology/Referral imaging   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).

At the university the residents see referral images, mainly in large animal imaging. They also get experience of teleradiology by spending one month per year working with Antech Imaging services.

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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?   99

What percentage of the preliminary reports generated from the imaging caseload are initially produced by the resident(s) in this program? 99

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.

Every other year our institution has a large animal ultrasound intern.

What percentage of resident-generated reports are reviewed by training diplomates prior to finalization of the report? 80

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

24 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? 99

Please describe how after-hours/weekend/holidaycases are handled at the primary institution. How does this affectresident-reported imaging caseload?

The residents are responsible for generating reports for weekend and after hours cases. They write all ultrasounds, MRI, & CT's that they are called in for. On weekends, in-between ultrasounds and advanced imaging the on call resident works on writing rad reports from 9AM-noon. Sunday afternoon all the weekend generated reports are rounded on by Dr. Rachel Pollard either with the resident or the reports reviewed and the resident alerted to any major changes made.

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 3900

Large animal radiology 140

Abdominal ultrasound 1800

Non-abdominal ultrasound	100
Computed tomography	555
Magnetic resonance Imaging	430
Nuclear scintigraphy	7
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.	1800
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	Yes
Radiobiology	Yes
Nuclear Medicine	Yes
Ultrasonography	Yes
Computed Tomography	Yes
Magnetic Resonance Imaging	Yes
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.

The residents attend imaging physics taught by Drs. Boone and Bushberg with the radiology residents at the Sacramento UC Med Center. This course covers physics of the all modalities, radiation safety and rad biology.

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?

No

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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)

6

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?

90

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.

Participating in a project is in their residency contract. They are expected to present the project at ACVR and have to present research at the school's house officer seminar day during their residency program. We have two meetings per year going over research up-dates and to discuss residency projects.

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.

Required to do 3 formal presentations.

One will be the House officer seminar day presentation. One will be at a scientific conference such as ACVR and the the residents are coached and give one formal lecture in the first-third year veterinary curriculum.

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

- The residents are asked if they would like to participate in labs and problem based learning in the first through third year veterinary curriculum.
-All of the residents do once every other month case presentations with the Rad Vets club.
- All of the residents teach clinically to fourth year students on radiology and ultrasound rotations.
- Each resident does one formal didactic lecture in the first through third year curriculum.
-All fourth year residents give morning topic rounds to the 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.

Our HIS and RIS systems are completely searchable. The residents can search for key words, diagnoses by pathology or radiology and cross reference them.

How many Known Case Conferences are conducted annually?   37

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.

Mondays from 8-9 - resident journal club
Wednesday 8-9 - board prep and topic rounds -organized by faculty and residents, topics include Echo practice/rounds, rounds with dentistry and oral surgery, rounds with neurology.
Thursdays 5:30-7:30 - KCC

Twice annually we have resident research updates
The second year residents attend physics at the med center.

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.

The residents can access the medical library through their VPN or while on campus, electronically or physically. We also have copies of physics and imaging texts available in the reading rooms. We also have an online accumulation of board prep materials on our residency course page using CANVAS.

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Evaluation and Protection of Residents

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

Angela Gorney 2018-2022 amgorney@ucdavis.edu
Alexandra LaPorte 2018-2022 adlaporte@ucdavis.edu
Jose Guerrero Cota 2019-2023 jmguerrerocota@ucdavis.edu
Robert Slatter 2019-2023 rtslatter@ucdavis.edu
Nicole Yang 2020-2024 niy@ucdavis.edu
Carli Smith 2020-2024 csmit@ucdavis.edu
Anna Vincek 2021-2025 akvincek@ucdavis.edu
Craig Brown 2021-2025 cbro@ucdavis.edu

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

Yes

List the current members of the resident review committee.

Kathryn Phillips, Ehren McLarty, Kelsey Brust, Eric Johnson, Allison Zwingenberger, Mathieu Spriet

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.

The school has a two resident committees - on geared toward mental health and one toward quality of education provided. Both are available for the residents to reach out to about conflicts within our department. We also have once monthly radiology resident and faculty meetings to discuss any concerns.

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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: 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: 0

Number of Residents That Have Not Passed: 0

2019

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: 0

Number of Residents That Have Not Passed: 0

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: 0

Number of Residents That Have Not Passed: 0

2017

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: 0

Number of Residents That Have Not Passed: 0

2016

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: 0

Number of Residents That Have Not Passed: 0

Certifying Board Exam Pass Rate

2020

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: 0

Number of Residents That Have Not Passed: 0

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: 0

Number of Residents That Have Not Passed: 0

2018

Number of Certifying Board Eligible Residents: 3

Number of Residents That Took Certifying Exam: 3

Number of Residents That Passed On 1st Attempt: 1

Number of Residents That Passed After Multiple Attempts: 2

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: 2

Number of Residents That Took Certifying Exam: 2
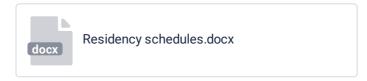
Number of Residents That Passed On 1st Attempt: 2

Number of Residents That Passed After Multiple Attempts: 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

docx   Residency schedules.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.