ACVR Residency Training Program Application Form:

Oklahoma State University - Center for Veterinary Health Sciences

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:

The residency training program at Oklahoma State University is designed to provide:
1. Advanced clinical training to develop proficient clinical skills in veterinary diagnostic radiography, ultrasonography, CT, MRI, and nuclear imaging.
2. Introduction to literature evaluation, scientific writing, and clinical investigation.
3. Experience in teaching, presenting, and communicating with students and veterinarians.
4. Thorough preparation for examination and certification by the ACVR.

III. Training period:

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the total length of the training program in months?</td>
<td>36 months</td>
</tr>
<tr>
<td>If this is a 4 year program, during what year will the resident be eligible to take the ACVR Preliminary Exam?</td>
<td>If the resident is not eligible to take the exam during the beginning of the 3rd year (September), please state the reason.</td>
</tr>
<tr>
<td>What is the total duration of supervised clinical training in the program?</td>
<td>30 months</td>
</tr>
<tr>
<td>What are the responsibilities of the resident in the remaining non-clinical portion of the program?</td>
<td>This time is designated for research, board preparation, teaching, short course attendance, elective offsite experience and vacation.</td>
</tr>
</tbody>
</table>

IV. Direction and Supervision:

Program Director:

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Who is the Director of Residency training?</td>
<td>Corey R. Wall, DVM, MS, DACVR</td>
</tr>
<tr>
<td>What percentage of this individual’s time is committed to clinical service and teaching of residents?</td>
<td>60%</td>
</tr>
</tbody>
</table>
Faculty:
Please list the faculty member of the program accepting PRIMARY responsibility for training in each of the following core areas:

Roentgen diagnosis:
- Faculty: Mackenzie Hallman
- Percentage clinical service: 70%

Diagnostic ultrasound:
- Faculty: Corey R. Wall
- Percentage clinical service: 60%

Computed Tomography
- Faculty: Mackenzie Hallman
- Percentage clinical service: 70%

Magnetic Resonance Imaging:
- Faculty: Corey R. Wall
- Percentage clinical service: 60%

Nuclear Medicine:
- Faculty: Corey R. Wall
- Percentage clinical service: 60%

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
- Andrew Hanzlicek, Shane Lyon, Laura Nafe
- Todd Holbrook, Lyndi Gilliam

ACVS
- Danielle Dugat
- Daniel Burba, Michael Schoonover

ACVP
- Jerry Ritchey, Melanie Breshears
- James Meinkoth, Anthony Confer

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:

<table>
<thead>
<tr>
<th>Briefly describe how the program meets the facility requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All modalities are connected to an Eklin based PACS system. A primary reading room with, multiple PC based reading stations, is present in the central area of the radiology section. Adjacent to this room there is a designated rounds room with a large overhead monitor which is utilized for student rounds.</td>
</tr>
</tbody>
</table>

Radiography:
There are two small animal suites. One suite is a Summit InnoVet with an Eklin EDR6, while the other suite is a GE Precision 500, which is a dual function unit with DR and fluoroscopy. There is one equine suite, equipped with a CPI Millenia overhead telescoping unit. A portable MinXray unit is also stored and often utilized in this suite. Equine images are acquired with one of two Vet Rocket cannon plates.

Ultrasound:
The ultrasound suite is a designated room adjacent to the reading room, where two ultrasound units that are utilized. A Philips Epic 5 is the main diagnostic machine and a portable Aloca Prosound serves as a student teaching machine.

Cross-Sectional Imaging:
A 4 slice Helical GE light speed is the current CT machine, whereas a GE 1.5T Echospeed is the current MR unit.

Nuc Med:
There is a designated nuclear medicine laboratory with includes an Equistand III Gamma Camera with Mirage/Oasis acquisition software.

VII. Clinical resources:

<table>
<thead>
<tr>
<th>Indicate the approximate number of patients seen annually by the home institution?</th>
</tr>
</thead>
<tbody>
<tr>
<td>17,500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What is the annual imaging caseload?</th>
</tr>
</thead>
<tbody>
<tr>
<td>7,270</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Small animals (canine, feline)</th>
<th>13,400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large animals (equine and food animals)</td>
<td>3,850</td>
</tr>
<tr>
<td>Exotic animals</td>
<td>250</td>
</tr>
</tbody>
</table>
What is the approximate annual imaging caseload of the program in:

<table>
<thead>
<tr>
<th>Service</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Animal Radiology</td>
<td>3840</td>
</tr>
<tr>
<td>Large Animal Radiology</td>
<td>1486</td>
</tr>
<tr>
<td>Abdominal Ultrasound</td>
<td>683</td>
</tr>
<tr>
<td>Computed Tomography</td>
<td>246</td>
</tr>
<tr>
<td>Nuclear Medicine</td>
<td>40</td>
</tr>
<tr>
<td>Magnetic Resonance Imaging</td>
<td>147</td>
</tr>
<tr>
<td>Other (specify): Exotic Radiology</td>
<td>174</td>
</tr>
<tr>
<td>Consults</td>
<td>654</td>
</tr>
</tbody>
</table>

**VIII. Training content:**

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

100%

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.

Of the preliminary reports generated from the imaging caseload what percentage are initially produced by the resident?

**Depending on the experience level of the resident within the program and number of residents scheduled the expected range is from 25-100%**

What percentage of resident reports are reviewed by the imaging faculty prior to finalization of the report?

100%

When preliminary resident reports are reviewed and edited by the imaging faculty responsible for training, what percentage of the time are two or more faculty present?

25-50%
Please complete the table below

<table>
<thead>
<tr>
<th>Small Animal Radiology:</th>
<th>Approximate number of cases in the 30 months clinical experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Animal Radiology:</td>
<td>5,000</td>
</tr>
<tr>
<td>Large Animal Radiology:</td>
<td>1,500</td>
</tr>
<tr>
<td>Abdominal Ultrasound:</td>
<td>1025</td>
</tr>
<tr>
<td>Computed Tomography:</td>
<td>375</td>
</tr>
<tr>
<td>Nuclear Medicine:</td>
<td>60</td>
</tr>
<tr>
<td>Magnetic Resonance Imaging:</td>
<td>225</td>
</tr>
<tr>
<td>Elective (any of above)</td>
<td></td>
</tr>
<tr>
<td>Required elective (specify):</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,185</strong></td>
</tr>
</tbody>
</table>

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:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Course number</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiobiology:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Physics of:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostic Radiology:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuclear Medicine:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ultrasonography:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MRI:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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. **No formal didactic training will be required. Residents will have assigned study topics during incremental periods the first two years of the program. These topics will be obtained from the “Qualifying Study Guide & Resource List”, and each topic**
will be assessed by an in depth mock exam.

IX. Research Environment:

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?

Corey R Wall: 9 peer reviewed publications
Mackenzie Hallman: 4 peer reviewed publications

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

**One case report, case series, or retrospective study as a first author or co-author.**

**One manuscript originating from the resident’s research project as a first author.**

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

N/A

Is an advanced degree a requirement of the training program?

No

X. Educational Environment:

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

1st year: 1 House Officer seminar
2nd year: 1 House Officer seminar
1 Anatomy lecture to 1st yr veterinary students
1 Phi Zeta day presentation
3rd year: 1 House Officer seminar
1 Lecture in the core 2nd yr veterinary students didactic radiology course
Abstract presentation at a national conference

XI. Evaluation 'Evaluation of residents and protection mechanisms':

- 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? N/A

- List the current members of the residents' review committee.
  
  Corey R. Wall, Mackenzie Hallman, & Daniel Burba (Department Head)
XII. Teaching File:

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

The radiology section maintains a digital teaching file through MIRC software.
The radiology section maintains an additional digital Excel spreadsheet of cases with teaching value for cases located on the server.
Historic film based teaching cases are maintained and searchable through established spreadsheets.

How is it maintained/updated?
The radiology teaching list is updated during rounds on a weekly basis.
The MIRC teaching file is updated yearly.

XIII. Conferences:

On average how many Known Case Conferences are conducted annually? 30

XIV. Literature resources:

What is the geographic relationship between the nearest medical library and the training program?
The “Center for Veterinary Health Sciences Library” is in the building adjacent to the teaching hospital.

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.

<table>
<thead>
<tr>
<th>Passed preliminary exam 1st time</th>
<th>Year 5</th>
<th>Year 4</th>
<th>Year 3</th>
<th>Year 2</th>
<th>Year 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passed preliminary exam 1st time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passed preliminary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(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.

**Base Residency Schedule**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinics</td>
<td>47 Weeks</td>
<td>38 Weeks</td>
<td>45 Weeks</td>
</tr>
<tr>
<td>Research</td>
<td>3 Weeks</td>
<td>4 Weeks</td>
<td></td>
</tr>
<tr>
<td>Board Prep</td>
<td></td>
<td>8 Weeks</td>
<td></td>
</tr>
<tr>
<td>Vacation</td>
<td>2 Weeks</td>
<td>2 Weeks</td>
<td>2 Weeks</td>
</tr>
<tr>
<td>Elective/Short Course</td>
<td>Elective weeks are flexible to the year taken</td>
<td>(5 weeks total )</td>
<td></td>
</tr>
</tbody>
</table>

Oklahoma State University has a very centralized radiology service allowing ready access for both participating in and viewing of diagnostic imaging studies of all species. At least one radiologist is in support of the clinical radiology service each day. The daily flow of cases at Oklahoma State University is also variable, with daily scheduling taking place to meet the pressing clinical needs. With that in mind the guidelines listed below in the “schedule of expectations and objectives” will be utilized in scheduling residents their clinical duties.

**Schedule of Expectations and Objectives**

**Year One**

1st Quarter (July – October)

- Assist technologists in positioning for and acquiring radiographic studies, troubleshooting equipment, and providing quality control for routine studies, perform all contrast studies
• Review teaching file cases
• Interpretation: small animal abdomen and thorax
2nd quarter (October – December)
- Quality control for radiographic studies, contrast studies
- Begin small animal abdominal ultrasound
- Mock exam #1 (November)
- Assume primary on-call duties with full radiologist back-up
- Interpretation: US, SA abdomen and thorax

3rd quarter (Jan – March)
- Quality control of radiographic studies, contrast studies
- Interpretation: begin small and large animal orthopedic interpretation
- Attend sophomore class radiology lectures and assist in lab
- Create a plan for research project and submit grant proposals
- Mock exam #2 (March)

4th quarter (April – June)
- Continue 3rd quarter clinical duties
- Start research project

Year Two
1st & 2nd Quarters (July – December)
- Begin CT, MR, and NM acquisition with technologists, and interpretation
- Continue with past clinical duties as scheduled.
- Mock exam #3 (July)
- Progress on research project
- Mock exam #4 (November)

3rd – 4th Quarters (Jan – June)
- Continue clinical duties as scheduled
- Mock exam #5 (March)
- Complete research project
- Mock exam #6 (July)

Year Three
1st Quarter (July – Sept)
- Continue clinical duties as scheduled
- Board preparation
- Qualifying board exam

2nd – 4th Quarters (October – June)
- Continue clinical duties as scheduled
- Submit research abstracts & prepare research manuscript
- Continue radiographic, US, and CT/MR interpretations
- Elective rotations
R. Mackenzie Hallman

Contact Information:

5209 N. Hunter’s Ridge
Stillwater, OK 74075
540.577.9161
mohallman@gmail.com

Education & Certification:

2004 Bachelor of Science, Biology
Summa cum Laude
Kansas State University
Manhattan, Kansas

2008 Doctor of Veterinary Medicine
Summa cum Laude
Kansas State University
Manhattan, Kansas

2016 Diplomate, American College of Veterinary Radiologists

Professional Experience:

July 2016 – Present
Assistant Clinical Professor, Diagnostic Imaging/Radiology
Boren Veterinary Teaching Hospital, Oklahoma State University, Stillwater, Oklahoma

July 2013 – July 2016
Resident, Diagnostic Imaging/Radiology
Veterinary Health Center, Kansas State University, Manhattan, Kansas
Faculty advisor: Laura J. Armbrust, DVM, DACVR

May 2010 – July 2013
Associate Veterinarian
Companion Animal Hospital, Selinsgrove, Pennsylvania

July 2009 – May 2010
Emergency Veterinarian
Animal Emergency Center, Watsontown, Pennsylvania

June 2008 – June 2009
Intern, Small Animal Medicine & Surgery
Virginia- Maryland Regional College of Veterinary Medicine, Blacksburg, Virginia

Publications & Grants:


ABBREVIATED CURRICULUM VITAE
Corey R. Wall, DVM, MS

PRESENT POSITION AND ADDRESS:
Title: Diagnostic Imaging - Assistant Professor
Office: Center for Veterinary Health Sciences
Veterinary Teaching Hospital
1 BVMTH
Stillwater, OK 74078-2041

EQUIPMENT AND ADDRESS:
Telephone: 405-744-7000
FAX: 405-744-6265
Email: wallcr@okstate.edu

EDUCATION:
Degree/Training                      Conferring Institution                         Field                      Year
B.S.                                Weber State University                       Zoology                    1995
D.V.M.                               Colorado State University                   Veterinary Medicine        1999
M.S.                                University of Missouri                      Biomedical Science         2010
Internship                          Alameda East Veterinary Hospital          Small Animal Med & Surg    2000
Internship                          Veterinary Specialists of Nevada           Small Animal Surgery       2001
Residency                           University of Missouri                      Diagnostic Imaging         2010

CLINICAL SPECIALTY/BOARD CERTIFICATION:
September 2011 Diplomate, American College of Veterinary Radiology

BIBLIOGRAPHY: