

ACVR Residency Training Program Application Form:

Institution Name

Ontario Veterinary College, University of Guelph

This document is to act as a guide for institutions desiring ACVR accreditation of their residency training program. It should be used in concert with the requirements set out in the ACVR Essentials of Residency Training document and it follows the headings of that document. It is intended to streamline the application process and help define what information the RSEC needs to evaluate the program. All terms used in this application have same definitions as defined in the Essentials.

II. Objectives:

Succinctly state the objectives of the training program.

1. Provide advanced training and clinical experience in diagnostic radiology, special procedures, ultrasound, MRI, and nuclear imaging.
2. Develop skills in routine diagnostic radiography, special procedures, ultrasound, MRI, CT, and nuclear imaging.
3. Provide instruction (formal and informal) in:
 - a. physics of diagnostic imaging
 - b. radiobiology and radiation safety
 - c. radiation therapy
4. Training in scientific writing, literature evaluation, and methods of clinical evaluation.
5. Gain teaching experience by providing in house continuing education lectures and participating in student film reading laboratories.
6. Provide a basis for a graduate program leading to DVSc.
7. Preparation for certification examination by the American College of Veterinary Radiology.

III. Training period:

What is the total length of the training program in months? 48

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

<p>The resident will be eligible to sit the preliminary exam in September of their fourth year. Due to the requirements of the DVSc program and time taken to perform the research the minimum clinical instruction will not occur by September of the 3rd year.</p>
<p>What is the total duration of supervised clinical training in the program? All of the clinical service will occur under the supervision of a board certified radiologist (34 months minimum).</p>
<p>What are the responsibilities of the resident in the remaining non-clinical portion of the program? Responsibilities include studying, graduate level coursework, a research project with thesis defence, multiple presentations throughout the year, journal club and book reviews, including vacation.</p>

IV. Direction and Supervision:

Program Director:

Who is the Director of Residency training? Alex zur Linden, DVM, DACVR
What percentage of this individual's time is committed to clinical service and teaching of residents? 55%

Faculty:

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

Roentgen diagnosis:

Faculty: Heather Chalmers
Percentage clinical service: 50

Diagnostic ultrasound:

Faculty: Alex zur Linden
Percentage clinical service: 50

Computed Tomography

Faculty: Alex zur Linden
Percentage clinical service: 50

Magnetic Resonance Imaging:

Faculty: Stephanie Nykamp
Percentage clinical service: 10

Nuclear Medicine:

Faculty: Heather Chalmers
Percentage clinical service: 50

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

Dr. Shauna Blois DVM, DVSc
Dr. Alice Defarges DVM, MSc Anthony Abrams-Ogg, DVM, DVSc Paul Woods, DVM Lynn O’Sullivan (cardiology)

ACVS

Dr. Ameet Singh DVM, DVSc
Dr. Michelle Oblak DVM, DVSc Don Trout, DVM, DVSc Judith Konig, DVM, DVSc Noel Moens, DVM Tom Gibson, DVM, DVSc Brigitte Brisson, DVM, DVSc

ACVP

Robert Foster DVM, PhD
Darren Wood, DVM, DVSc Dorothee Bienzle, DVM, PhD

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:

<p>Briefly describe how the program meets the facility requirements.</p> <ul style="list-style-type: none"> . Three small animal x-ray rooms <ul style="list-style-type: none"> a. <i>Room 1</i>: Digital diagnostic radiology/fluoroscopy – GE Precision 500D b. <i>Room 2</i>: General diagnostic radiology/fluoroscopy – Philips Duo Diagnost c. <i>Room 3</i>: General diagnostic radiology room - Sedecal DR 2. Computed Radiography <ul style="list-style-type: none"> - AGFA CR 30-X Plate reader 3. Large animal radiography: <ul style="list-style-type: none"> a. General diagnostic radiography– Philips Super 100 CP radiographic unit b. Minxray-300 Inc. portable radiographic unit (high-frequency generator) c. GE AMX-4 mobile radiographic unit d. Eklin Digital Radiography
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| <p>4. Ultrasound</p> <ul style="list-style-type: none"> a. Phillips IUT 22 – 2D, M-mode, pulsed and color Doppler b. ATL Ultrasound HDI 5000 –2D, M-mode, pulsed and color Doppler c. ATL Ultrasound HDI 3000 –2D, M-mode, pulsed and color Doppler d. GE LogicE - ATL Ultrasound HDI 3000 –2D, M-mode, pulsed and color Doppler e. GE Vivid 9 – cardiology units (2) <p>5. Nuclear Medicine</p> <ul style="list-style-type: none"> • Technicare gamma camera model 438 <ul style="list-style-type: none"> • camera is floor mounted with the Omega equistand • PC based nuclear medicine software (Mirage) for dynamic and static imaging • small animal isolation ward • designated large animal isolation stalls <p>6. Magnetic resonance imaging - GE Sigma Infinity Echospeed Plus with Excite 1.5 Tesla magnet</p> <p>7. Computed Tomography</p> <ul style="list-style-type: none"> • GE Brightspeed 16 slice • AW 4.2 image processing workstation <p>8. Radiation Therapy</p> <ul style="list-style-type: none"> a. Varian linear accelerator |
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VII. Clinical resources:

Indicate the approximate number of patients seen annually by the home institution?
15,800
What is the annual imaging caseload? 7500

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

Small animals (canine, feline)	13,500
Large animals (equine and food animals)	1,300
Exotic animals	100

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

Small Animal Radiology:	4400
Large Animal Radiology:	300

Abdominal Ultrasound:	1500
Computed Tomography:	350
Nuclear Medicine:	80
Magnetic Resonance Imaging:	350
Other (specify):	

VIII. Training content:

<p>What percentage of imaging reports are typically available within 48 hours after the examination is conducted in typewritten or electronic form?</p> <p>95%</p>
<p>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.</p>
<p>Of the preliminary reports generated from the imaging caseload what percentage are initially produced by the resident?</p> <p>The resident generates all of the reports for the service areas that they are assigned to for that week (i.e. if they are on the ultrasound, CT, MRI service they will generate 100% of those reports but no radiology or nuclear medicine reports and visa versa when they are on the radiology and nuclear medicine service).</p>
<p>What percentage of resident reports are reviewed by the imaging faculty prior to finalization of the report?</p> <p>100%</p>
<p>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?</p> <p>75%</p>

Please complete the table below

	Approximate number of cases in the 30 months clinical experience
Small Animal Radiology:	6,500

Large Animal Radiology:	500
Abdominal Ultrasound:	1,700
Computed Tomography:	350
Nuclear Medicine:	80
Magnetic Resonance Imaging:	360
Elective (any of above)	
Required elective (specify):	
Total	9,490

Please indicate the course number and unit assignment residents are required to take to meet the educational objectives for formal instruction as outlined in the Essentials in the following:

Topic	Course number	Units
Radiobiology:	CLIN 6330 Advanced Principles of Diagnostic Imaging	Radiation safety Interactions of radiation and cells

The Physics of:

Diagnostic Radiology:	CLIN 6330 Advanced Radiology I	Production of x-rays Properties of x-rays Technique chart formation Film screen imaging Darkroom processes CR and DR
Nuclear Medicine:	CLIN 6330 Advanced Principles of Diagnostic Imaging	Physics of nuclear medicine Quality control in nuclear medicine
Ultrasonography:	CLIN 6330 Advanced Principles of Diagnostic Imaging	Physics of ultrasound

CT:	CLIN 6370 Neuroimaging	CT physics CT imaging protocols
MRI:	CLIN 6370 Neuroimaging	MRI physics MRI imaging protocols
<p>If your program does not offer formal courses in any or all of these topics please indicate how these educational objectives for each are met. Use attached sheets if necessary.</p> <p>Residents also attended the nuclear medicine short course in Tennessee during their first year.</p>		

IX. Research Environment:

<p>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?</p> <p>Average # = 25 papers/all persons/5 years</p>
<p>What is the number of publications/submissions expected of a resident completing the program?</p> <p>A minimum of one paper from the thesis.</p>
<p>If this is an established program, what percentage of residents have made formal research presentations at the annual ACVR or equivalent national meeting?</p> <p>3 residents since 2009 have presented their research.</p>
<p>Is an advanced degree a requirement of the training program?</p> <p>Yes</p>

X. Educational Environment:

<p>How many lectures or scientific presentations are expected of each resident during the course of their training?</p> <p>The resident is expected to give two presentations per year as part of the hospital grand rounds. In addition the resident is expected to present their research at the ACVR conference.</p>

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

<ul style="list-style-type: none"> • At the 6 months reviews did your resident(s) successfully complete their residency training or did any of your resident(s) not adequately complete the last 6 months of training? • List the current members of the residents' review committee. • List the internal mechanisms in place to protect your resident if conflicts arise.

The resident will have daily subjective evaluation when involved in film reading with the faculty. During the first year, formal written evaluations by the faculty will occur at 6 and 12 months. An annual written evaluation will occur at the end of each of the subsequent years. The radiology faculty will provide an analysis of the resident's abilities, capabilities, and productivity. The results of these evaluations will be discussed with the resident by the section chief, residency program director, and the resident's advisor.

Every six months during the first two years of the residency there will be mock written examinations based on the written exam objectives that are not covered in the formal courses. At the end of the second year of the residency there will be a summative examination of the core knowledge. Mock oral exams will occur on a bi-weekly basis throughout the residency program.

Current members of the review committee include Alex zur Linden, Heather Chalmers and Stephanie Nykamp.

XII. Teaching File:

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

There is a film based teaching file that is cataloged by systems. A digital teaching file is also available containing approximately 300 imaging studies at present.

How is it maintained/updated?

The teaching file is updated based on interesting case material presented during imaging rounds.

XIII. Conferences:

On average how many Known Case Conferences are conducted annually?

A minimum of 12 Known Case conferences are conducted annually with the number and frequency increasing the final year of the program.

Weekly rounds with the pathology, oncology, surgery, medicine and cardiology services are available for the resident to participate in. Residents are required to attend the cardiology rounds and strongly encouraged to attend the other service rounds.

XIV. Literature resources:

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

program?

The Ontario Veterinary College Library provides access to all the journals held by the Canadian Institute for Scientific and Technical Information (approximately 17,000 journals). A library of relevant textbooks and journal articles is also maintained in the radiology department.

XV. Appendix:

(a) Provide the pass rate for first time, second time, etc for both the preliminary and certifying exams for your residents for the past 5 years. For example, for all residents finishing your program 5 years ago (Year 5), check the appropriate box. Complete the table for residents finishing 4 years ago (Year 4), 3 years ago (Year 3), etc.

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

(b) Provide a clinical schedule for your resident(s). This schedule should provide a weekly or monthly outline of the resident’s clinical responsibilities. This may be in the form of a master schedule or duty roster for your entire radiology section if desired.

Detailed Yearly Schedule

Residency Schedule

Month	Week #	Year 1	Year 2	Year 3	Year 4		
Mid July	44	R	O	O	U	R = radiology, NM US = ultrasound, CT, MRI O = Off	
	45	R	R	R	R		
	46	R	R	R	R		
	47	R	U	U	O		
	48	R	U	U	O		
	49	R	U	O	O		
	50	R	R	O	O		
	51	R	R	R	O		
	52	R	R	R	O		
	Sept	1	R	U	U		O
		2	R	U	U		O
		3	R	O	O		R
4		R	O	O	R		
5		O	R	R	U		
6		O	R	R	U		
7		O	U	U	O		
8		O	U	U	O		
9		R	O	O	R		
10		R	O	O	R		
11		R	R	R	U		
12		R	R	R	U		
Jan	13	O	U	U	O		
	14	O	U	U	O		
	15	R	O	O	R		
	16	R	O	O	R		
	17	U	R	R	U		
	18	U	R	R	U		
	19	O	U	U	O		
	20	O	U	U	O		
	21	R	O	O	R		
	22	R	O	O	R		
	23	U	R	R	U		
	24	U	R	R	U		
May	25	O	U	U	O		
	26	O	U	U	O		
	27	R	O	O	R		
	28	R	O	O	R		
	29	U	R	R	U		
	30	U	R	R	U		
	31	O	U	U	O		
	32	O	U	U	O		
	33	R	O	O	R		
	34	R	O	O	R		

	35	U	R	R	O		
	36	U	R	R	O		
	37	O	U	U	O		
	38	O	U	U	O		
	39	R	O	O	R		
	40	R	O	O	R		
	41	U	O	R	U		
	42	U	O	R	U		
End of year	43	O	O	U	R		
	Rad	27	17	18	17	Total	79
	US	10	17	17	13		57
	Off	15	18	17	22		72