

**ACVR Residency Training Program Application Form:**

Louisiana State University School of Veterinary Medicine Veterinary Clinical Sciences
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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 program is designed to provide high-quality, in-depth clinical training in the areas of veterinary diagnostic imaging which will allow the resident to develop knowledge and clinical proficiency in the field. The program will provide an in-depth understanding of diagnostic radiology, ultrasonography and computed tomography as well as knowledge of the general principles and applications of nuclear medicine and, magnetic resonance imaging. The principles of radiation safety and biology and radiotherapy will be given. The training program will aim to produce veterinary radiologists proficient in the use of current imaging techniques for examination of a wide variety of diseases in animals, with regard for radiation safety, with an understanding of developing techniques, digital radiography, and the ability to contribute to the discipline through participation in research, congresses and publications. The resident will be expected to meet the training requirements of the ACVR required to take the ACVR board examination. Upon completion of the program and examinations the successful candidate will be able to pursue career goals in academia, industry or private specialty practice.
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**III. Training period:**

What is the total length of the training program in months? 48 months
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All of the required supervised training is completed in the first 36 months of the residency and will be accomplished on site. Six of the first 36 months of training are scheduled for research and writing, elective subspecialty training, outside rotations and studying for the written and practical board examinations. Four weeks of vacation are granted annually and is included in the elective weeks. The fourth year of training is scheduled the same as the first 3 years and allows time for an optional Masters degree through the Louisiana State University Graduate Studies Program according to the trainee's personal profile and goals.
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If this is a 4 year program, during what year will the resident be eligible to take the
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<p>ACVR Preliminary Exam? 3<sup>rd</sup> year (September).</p> <p>If the resident is not eligible to take the exam during the beginning of the 3<sup>rd</sup> year (September), please state the reason.</p>
<p>What is the total duration of supervised clinical training in the program? 30 months</p>
<p>What are the responsibilities of the resident in the remaining non-clinical portion of the program?</p> <p>This time is scheduled for research and writing, elective subspecialty training, outside rotations and studying for the written board exam. This can also be used for vacation, conferences and optional Masters degree program.</p>

**IV. Direction and Supervision:**

**Program Director:**

<p>Nathalie Rademacher, Dr.med.vet, DECVDI/DACVR</p>
<p>What percentage of this individual's time is committed to clinical service and teaching of residents? 50%</p>

**Faculty:**

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

Roentgen diagnosis:

<p>Faculty: Abbigail Granger</p>
<p>Percentage clinical service: 50%</p>

Diagnostic ultrasound:

<p>Faculty: Nathalie Rademacher</p>
<p>Percentage clinical service: 50%</p>

Computed Tomography

<p>Faculty: Nathalie Rademacher</p>
<p>Percentage clinical service: 50%</p>

Magnetic Resonance Imaging:

<p>Faculty: Lorrie Gaschen</p>
<p>Percentage clinical service: 50%</p>

Nuclear Medicine:

<p>Faculty: Abbigail Granger,</p>
<p>Percentage clinical service: 50%</p>

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.

## SHORT CURRICULUM VITAE

Nathalie Rademacher, Dr.med.vet.

### Current Position

Assistant Professor Diagnostic Imaging  
Department of Veterinary Clinical Sciences  
Louisiana State University

### Education:

2007 Visiting Clinical Instructor Diagnostic Imaging, Louisiana State University  
2002-2006 Residency Diagnostic Imaging, University of Zurich, Switzerland  
2002 Internship, Private Small Animal Referral Centre Tenniken, Switzerland  
2001 Dr.med.vet., Graduate Student, University of Berne, Switzerland  
2000 Graduation med.vet. University of Giessen, Germany

### Board certification

2010 American College of Veterinary Radiology  
2007 European College of Diagnostic Imaging

### Teaching Experience Diagnostic Imaging

Louisiana State University 2007-2010  
4 hours per year year 1 students, Principles Diag.Imaging I and II  
10 hours per year of didactic teaching years 2-4 veterinary students  
Average 25 weeks teaching year 4 students, clinical year  
12 hours of graduate courses in diagnostic imaging

Resident training: 1 resident Louisiana State University (2009-present)

Imaging Interns: 5 Interns (2007- present)

Book Chapter: 1 published BSAVA manual

Refereed publications: 17 since 2005

Scientific abstracts: 10 since 2004

Speaker: 12 International, 15 Local Lectures given

Member Organizations: ECVDI since 2007, EAVDI since 2002, ACVR since 2002, LADIS (ACVR), ELADIS (ECVDI)

Research: PI on 4 Grants, Co-investigator on 8 Grants

Research area: Contrast-enhanced ultrasound, Elastography, Lung ultrasound, CT equine, canine

Committee work: Member of 2 committees at LSU, SCAVMA Advisor

LSU Diagnostic Imaging Club advisor

## SHORT CURRICULUM VITAE

L. Abbigail Granger, DVM

### Current Position

Assistant Professor Diagnostic Imaging  
Department of Veterinary Clinical Sciences  
Louisiana State University

### Education:

2008 – 2011 Residency in Diagnostic Imaging, Kansas State University  
2007 – 2008 Internship, rotating small animal, Mississippi State University  
2003 – 2007 Doctor of Veterinary Medicine, University of Tennessee  
1998 – 2003 Bachelor of Science, University of Memphis, Tennessee

### Board certification

2011 American College of Veterinary Radiology

### Teaching Experience Diagnostic Imaging

Kansas State University 2008 – 2011  
4 lectures, year 1 students, Radiographic Anatomy  
3 lectures, 10 laboratories, year 2 students, Radiology  
Average 50 weeks each year teaching year 4 students, clinical year

Refereed publications: 1 pending minor revisions

Speaker: 3 Local Lectures given

Member Organizations: ACVR since 2008, AVMA since 2007

Research: PI on 1 Grant

Research area: Dynamic and functional CT

## SHORT CURRICULUM VITAE

Lorrie Gaschen, PhD, DVM, Dr.med.vet., Dr.habil.

### Current Position

Professor, Diagnostic Imaging  
Section Chief, Diagnostic Imaging  
Department of Veterinary Clinical Sciences  
Louisiana State University

### Education:

2003 Dr.habil, Vetsuisse Faculty, University of Bern, Switzerland  
2001 PhD, Dept of Medical Imaging, University of Utrecht, Netherlands  
1994-1997 Residency Diagnostic Imaging, University of Bern  
1994 Dr.med.vet., Dept. of Veterinary Clinical Sciences, University of Bern  
1990 DVM, Honors, University of Florida, Gainesville, FL  
1985 BS, University of Florida, Gainesville, FL

### Board Certification

1997 European College of Veterinary Diagnostic Imaging

### Teaching Experience Diagnostic Imaging

University of Bern 2002-2005, 13 different didactic courses given yearly, years 1-4 students

Louisiana State University 2006-2010

Coordinator of Principles of Diagnostic Imaging I and II, year 1 students  
12 hours per year year 1 students, Principles Diag.Imaging I and II  
26 hours per year of didactic teaching years 2-4 veterinary students  
Average 36 weeks teaching year 4 students, clinical year  
44 hours of graduate courses in diagnostic imaging

### Graduate Committees

PhD: 2 Chair, 1 member

Resident Training: 11 residents at University of Bern (2001-2005)

1 resident Louisiana State University (2009-present)

Imaging Intern Training: 5 interns (2007-present)

Book chapters: 2006-present: 8 published, 2 in press, 2 submitted, Editor of BSAVA Manual

Refereed Publications: 48 (26 first or senior author)

Conference Proceedings: 37 invited speaker 2006-present

Scientific Abstracts: 22 since 2006

Speaker: 48 International, 53 National, 78 Local lectures given

Member Organizations: Board of the ECVDI since 2003 (treasurer), President VUS (ACVR),  
Secretary LADIS (ACVR), plus others....

Research: PI on 12 Grants totaling: \$563,299.00 since 2002

Research area: Gastrointestinal Ultrasound, Renal Transplant Imaging, MRI canine and Equine,  
Contrast-enhanced ultrasound.

Committee work: Chair of 3 committees at LSU, member of 3 others

LSU Diagnostic Imaging Club founder and advisor

Honors: Faculty Service award 2011, LSU

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

Frederic Gaschen, Dipl. ACVIM-SAIM, DECVIM-CA, Professor
Kirk Ryan, Dipl. ACVIM-SAIM, Assistant Professor
Mark J. Acierno, DVM, Dipl. ACVIM-SAIM, Associate Professor
Amy M. Grooters, BA, DVM, Dipl. ACVIM-SAIM, Professor
Tracy Gieger, DVM, Dipl. ACVIM-SAIM and Oncology, DACVR-Radiation oncology, Assistant Professor
Bonnie Brugman, DVM, Dipl. ACVIM Oncology, Assistant Professor
Kejiro Shiomitsu, BVSc, Dipl. ACVR-Radiation oncology, Assistant Professor
Romain Pariaut, DEDV, Dipl. ACVIM (Cardiology), Assistant Professor
Corinne Reynolds, Dipl. ACVIM (Cardiology), Assistant Professor
Rebecca S. McConnico, DVM, PhD, Dip ACVIM LA, Professor
Susan C. Eades, DVM, PhD, Dipl. ACVIM LA, Professor
Ann Chapman, DVM, MS, Dipl.ACVM, Assistant Professor
Frank Andrews, DVM, MS, Dipl. ACVIM

## ACVS

Daniel J. Burba, DVM, Dipl. ACVS (Equine), Professor
Colin Mitchell, BVM&S, Dipl. ACVS (Equine), Assistant Professor
Laura Riggs, DVM, PhD, Dipl. ACVS (Equine), Assistant Professor
Charles C. McCauley, DVM, Dipl. ACVS (Equine), Assistant Professor
John Mauterer, DVM, Dipl. ACVS, Visiting Clinical Instructor
Katrin Saile, DVM, Dipl. ACVS, Assistant Professor
Daniel Odgen, BVM&S, board eligible, Assistant Professor
Julia Sumner, DVM, board eligible, Assistant Professor
Duane Robinson, DVM, PhD, board eligible, Assistant Professor

## ACVP

Doo-Youn Cho, DVM PhD, Professor
Leslie McLaughlin, BA, DVM, Assistant Professor
Stephen D. Gaunt, DVM, Dipl. ACVP, Professor
Rudy Bauer, DVM, Dipl. ACVP, Associate Professor
Dawn E. Evans, DVM, Dipl. ACVP, Associate Professor
E. Clay Hodgins, DVM, Dipl. ACVP, Clinical Professor
Daniel B. Paulsen, DVM, PhD, Dipl. ACVP, Professor
Nobuko Wakamatsu, DVM, Dipl.ACVP, Assistant Professor

**V. Affiliation agreement: NA**

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:****Radiographic equipment:**

The section has two small animal suites and one large animal suite.

- Siemens special procedures suite: 800 mA tube with digital fluoroscopy
- Siemens: 500 mA tube for routing radiography
- Siemens: 800 mA tube which is ceiling mounted and synchronized to a dedicated ceiling mounted cassette holder.
- Portable unit is available for ambulatory work in the barn for patients in isolation, intra-operative exposures and for non-ambulatory horses (laminitis)

**Ultrasonographic equipment:**

1. Philips iu22 Small Animal ultrasound machine
  - a. Low and high frequency, curved and linear array probes (6 probes)
  - b. Qlab contrast imaging software with dedicated contrast probes
2. Mylab 50 ultrasound unit with two high frequency linear tendon probes, 2-5 MHz phased array probe for cardiac imaging and 2-5 MHz and 5-10 MHz curved for abdominal and thoracic work in horses and small animals

**CT equipment:**

GE Lightspeed 16-slice CT unit: Equipped for equine with a dedicated table and 3-D GE Workstation for all reconstruction work

**Nuclear medicine equipment:**

Rectangular format gamma camera with Mirage software mounted on a custom frame with motor operated hoist in a dedicated room for equine and small animal imaging.

**MRI equipment:**

- 1.5T Hitachi Echelon, in hospital for small and large animal (with custom equine table)

**Other:**

1. Digital Radiography: All rooms are equipped with the Eklin DR panels: Large format in the small animal rooms and small and large panels in the large animal radiographic suite. All images from all modalities are archived in the Antech Imaging PACS for retrieval and archiving using Efilm software.
2. A total of 4 dual head, 3 megapixel greyscale medical grade monitor workstations for image viewing in the reading room, conference room and MRI in addition to 4 single head conventional color monitors.
3. Overhead projection of images in the reading room for rounds, group discussions, presentations on a cinema-like screen format.
4. Large reading room to accommodate students and residents for rounds
5. Conference room for journal club and book review, case discussions with viewing workstations.
6. 45 image viewing stations with access to the PACS throughout the hospital
7. Radiotherapy: the oncology service maintains a linear accelerator with multi-leaf collimator and treatment planning software.
8. Radioactive iodine therapy ward for treatment of cats with hyperthyroidism.
9. Isolation wards for small and dogs for holding post-nuclear medicine scans.
10. Isolation stalls for horses post nuclear medicine scans.

**VII. Clinical resources:**

Indicate the approximate number of patients seen annually by the home institution? 22,165
What is the annual imaging caseload? 10,100

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

Small animals (canine, feline)	18,649
Large animals (equine and food animals)	2,524
Exotic animals	992

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

Small Animal Radiology:	4700
Large Animal Radiology:	1600
Abdominal Ultrasound:	2300
Computed Tomography:	284
Nuclear Medicine:	75
Magnetic Resonance Imaging:	300
Other (specify):	350 US guided procedures 400 wildlife and exotics 200 Radiotherapy

**VIII. Training content:**

What percentage of imaging reports are typically available within 48 hours after the examination is conducted in typewritten or electronic form? 99% and nearly all reports are available within 24 hours on exam completion.
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. NA

Of the preliminary reports generated from the imaging caseload what percentage are initially produced by the resident? 90%
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? 90% when fully staffed (3 radiologists), 50% with 2 radiologists on staff.

**Please complete the table below**

	Approximate number of cases in the 30 months clinical experience
Small Animal Radiology:	7000
Large Animal Radiology:	950
Abdominal Ultrasound:	1500
Computed Tomography:	500
Nuclear Medicine:	150
Magnetic Resonance Imaging:	300
Elective (any of above)	50
Required elective (specify): RT	15
<b>Total</b>	10,465

**In Diagnostic Imaging**

1. Formal case discussion daily, all modalities
2. Journal Club: residents distribute and prepare in advance the assigned journal articles followed by an open forum discussion.
3. Board Examination review: residents prepare in advance an assigned reading from pertinent texts that follow the syllabus of the ACVR for the board examination covering all topics, including physics, physiology, pathophysiology, anatomy, and all modalities.
4. Neuroimaging rounds: held monthly, these rounds provide an in depth coverage of the veterinary and human literature parallel with case presentations from the hospital examined with myelography, CT and MRI.

**Outside of Diagnostic Imaging**

5. During the 30 months of training, 6 weeks total will be spend in the Cardiology service to cover the basics of echocardiography and principles of interpretation and patterns of disease
6. During the 30 months of training, 6 weeks total will be spend in the Oncology service to cover the basics radiation treatment planning, radiobiology and radio-oncology
7. Resident and Intern Seminar (i.e. all interns and residents of the hospital). These are held weekly on Friday and are formal 1 hour presentations by the residence either to review a subject area in internal medicine, surgery, neurology, exotics, anesthesia, oncology or radiation oncology or to present the resident’s research project or case reports. Both large and small animal is covered.
8. Large Animal House Officer Rounds: 1 hour on Wednesday mornings. Additional large animal topics are covered through presentations by the residents. Either case presentations or mortality and morbidity cases are made. Also, research topics in the Equine Division are presented, occasionally by invited speakers.
9. Dean’s Grand Rounds. 1 hour. Held once a month. Invited speakers covering a variety of topics.
10. Small animal internal medicine rounds. Held once weekly to discuss topics in internal medicine and neurology. The internal medicine group sees numerous neurology cases on a daily basis.
11. Graduate Courses. As part of the graduate studies program, three, three hour long courses are held annually with in depth teaching of specific imaging topics in both small and large animal.

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:

1. 88 hours total covering patterns of disease and principles of interpretation for diagnostic nuclear medicine, large animal ultrasound, MRI, CT are provided to the resident during the training program in weekly rounds.

Topic	Course number	Units
Radiobiology:	1. MDEP 7121: radiation oncology course offered at LSU	1 Semester weekly 2 hours lectures main campus, Course details see below
	2. Tulane Medical School Physics course	60 hours total, course details below

The Physics of:

Diagnostic Radiology:	Tulane Medical School Physics course	60 hours total, course details below
Nuclear Medicine:	Tulane Medical School	60 hours total, course details

	Physics course Nuclear Medicine Short course, University of Tennessee	below 3 days
Ultrasonography:	Tulane Medical School Physics course	60 hours total, course details below
CT:	Tulane Medical School Physics course	60 hours total, course details below
MRI:	Tulane Medical School Physics course	60 hours total, course details below

**MEDP 7121 Radiation Biology**

Instructors: J Fontenot, K Matthews, B Parker, M Price, M Varnes

Description: This course covers topics in radiobiology, including: introductory cell biology and cellular organization; effects of ionizing radiation on cellular, molecular, and organ systems; radiosensitivity, repair, and mediation of radiobiological effects; acute vs. late effects; topics specific to radiotherapy applications; effects of alternative radiation and non-radiation therapies.

Textbook: Hall EJ and Giaccia AJ. **Radiobiology for the Radiologist**, 6th ed. Lippincott Wilkins & Williams, 2005 (ISBN-13: 978-0781741514)

Lectures will meet 2-3 hours per week with lab sessions of 0-6 hours per week (for an expected average of 3 credit hours per week). Each student is expected to read the relevant textbook chapter prior to each lecture.

Homework: Instructors will distribute 1-2 homework assignments per week.

Laboratory: Lab activities and analysis will be completed in assigned groups, but each student must individually prepare a laboratory report for each experiment.

Module 1: Review and Fundamentals: Fundamentals of cell biology and function, Chemistry of radiation action, DNA strand breaks and chromosomal aberrations, Cell survival curves

Module 2: Biology of Radiation Exposure: Radiosensitivity & cell age in mitotic cycle, Repair of radiation damage and dose-rate effect, Oxygen effect and reoxygenation, LET and RBE

Module 3: Acute and Late Effects of Radiation: Acute effects of total-body irradiation, Radioprotectors, Radiation carcinogenesis, Hereditary effects of radiation, Effects of radiation on the embryo and fetus, Doses and risks from low-dose procedures

Module 4: Effects in Radiation Therapy: Radiation cataractogenesis, Dose-response relationships for normal tissues, Clinical response of normal tissues, Model tumor systems, Cell, tissue and tumor kinetics, Time, Dose and fractionation in radiotherapy

Module 5: Alternative Radiation and Other Therapies: Radiosensitizers; hyperbaric O<sub>2</sub>; hypoxic cell sensitizers; hypoxic cytotoxicity, Alternative radiation modalities: high-LET beams; Auger electron therapy; neutron capture therapy, Gene therapy, Chemotherapeutic agents, Hyperthermia

Formal course work is provided by the Tulane Medical School in New Orleans, Louisiana (Part of the Louisiana State University system) in association with the Ochsner Health Group (hospital) in New Orleans. Dr. Jerome Jones MD, ACR, is the course instructor and the course is provided to us in association with the residency program. The course is taken with human radiology residents in that program and the course covers the topics of Radiography, CT, MRI, Neuroimaging, Ultrasound and Nuclear Medicine and Radiobiology. They also visit a radiopharmacy to learn how a molybdenum generator functions. The resident will attend the course in the second half of the first year of the residency.

Course Outline: 60 hours

Text: Huda and Slone "Review of Radiologic Physics", 2<sup>nd</sup> Ed (Lippincot, Williams and Wilkins).

Topics covered in course:

1. Matter and Radiation: Basic Physics, Matter, Radiation, Radionuclides, and Decay Modes
2. X- Ray Production: Generators, X-ray Production Processes, X-ray Tubes, Tube Loading, Diagnostic X-ray Beams
3. X-ray Interactions: Absorption and Scattering, Photoelectric and Compton Effects, Attenuation of Radiation, Radiation Units, Radiation Detectors
4. Analog X-ray Imaging: Film, Intensifying Screens, Scatter Removal, Image Intensifiers, Television, Fluoroscopy
5. Image Quality and Patient Dose: Contrast, resolution, noise, Diagnostic Performance, Patient Doses
6. Digital X-ray Imaging: Computers, Detectors in Digital Imaging, Digital X-ray Imaging, Digital, Dynamic Imaging, PACS
7. Mammography: Diagnosing Breast Cancer, Mammography Imaging Chain, Clinical Imaging, Image Quality and Dose, MQSA, Alternative Breast Imaging
8. Computed Tomography: Basic Physics, Scanner Design, Modern Scanners, Image Quality, Doses
9. Nuclear Medicine: Radiopharmaceuticals, Planar Imaging, Tomography, Quality Control, Image Quality, Dosimetry
10. Radiation Protection: Biological Basis, Radiation Risks, Dose Limits, Protection Methods, Population Doses
11. Ultrasound: Basic Physics, Interaction with Matter, Transducers, Displays, Clinical Aspects, Doppler Ultrasound
12. Magnetic Resonance: Basic Physics, Instrumentation, Imaging, Image Quality, Contrast Agents, Advanced Techniques

## **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?

Lorrie Gaschen: Total of 50 publications

Nathalie Rademacher: Total of 17 publications

Abbigail Granger: Total of 1 publication

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

Residents are required to submit two first-author manuscripts during the residency, one of which must be completed by the second year. One manuscript must originate from the resident's research project, the other a case report or retrospective study. Two manuscripts from the research project are also acceptable. At least one abstract is to be presented at an annual imaging conference meeting. Sufficient time and support is given by the faculty to complete this work and the faculty will aid the resident with developing collaborations and obtaining funding if necessary.

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

Is an advanced degree a requirement of the training program? No

A graduate degree combined with the residency program is available if desired by the resident and applicable.

#### **X. Educational Environment:**

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

The resident will be expected to hold 2 formal intramural lectures per year. At least one lecture at a veterinary congress will be required, usually during the second year of the program.

Depending on the resident's level, they will begin leading the evening student rounds in a formal setting where the student's have the opportunity to discuss the cases they were assigned to as well as interesting cases from the week they have questions on. Residents will also assist in all laboratories in the diagnostic imaging courses of the years 1-3. In their 4th year, they will be expected to give lectures in the years 1-3 courses. This will be no more than 1 lecture per student year.

#### **XI. Evaluation:**

During the program how often is resident performance evaluated in writing?

Formal written evaluation will be carried out every 3 months. Yearly evaluations will be performed using the ACVR resident evaluation progress report form which will be submitted to the Credentials Committee of the School of Veterinary Medicine. A one on one discussion of the results will be carried out with the resident. Where deficiencies are noted, appropriate measures will be taken.

**XII. Teaching File:**

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

A searchable database is available. A teaching file is saved in this database and (currently contains approximately 1500 cases, 1000 electronic, rest film) is maintained for review by residents and students. It consists of large animal, small animal and exotic cases, 60 percent small animal, 30 percent large animal and 10 percent exotic cases. Both normal and abnormal examples are available. CT and MRI cases are included. Large animal cases include appendicular and axial skeleton and thorax. Small animal includes thorax, abdomen, extremities, special procedures, computed tomography and magnetic resonance imaging. Exotics are mainly whole body radiographic studies.

How is it maintained/updated? The cases are updated yearly and the electronic teaching file is updated on a weekly basis.

**XIII. Conferences:**

On average how many Known Case Conferences are conducted annually? 24

**XIV. Literature resources:**

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

The resident has access to the veterinary journals and reference books listed in the reading list of the syllabus. The School of Veterinary Medicine maintains a complete library with up-to-date textbooks and journals in all specialty fields. The main veterinary journals for all specialty fields are also available and most all are available electronically. In addition, the radiology section maintains its own library of the most recent anatomy and diagnostic imaging textbooks. The nearest human medical library is 1 hour away by car.

**XV. Appendix: NA new program application**

(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					
Passed prelim exam 2 <sup>nd</sup> time					
Passed prelim after 2 <sup>nd</sup> time					
Passed certifying exam 1 <sup>st</sup> time					
Passed certifying exam 2 <sup>nd</sup> time					
Passed certifying exam after 2 <sup>nd</sup> 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.