1. Overview:

This American College of Veterinary Radiology residency program has been designed to provide in-depth training in Diagnostic Imaging and related basic and applied sciences. The program has been developed to provide residents with a comprehensive knowledge of diagnostic imaging to diagnose conditions affecting animals. Our program strives to prepare residents for active careers in academia or specialty practice, and the caseload provides an excellent and broad experience over the duration of the residency. The residency will fulfill the training requirements and partially fulfill the requirements for certification by the American College of Veterinary Radiology.

The primary mentors of the training program are faculty of the Department of Veterinary Clinical Sciences (VCS).

Clinical facilities of the Hixson-Lied Small Animal Hospital and Dr. W. Eugene and Linda Lloyd Veterinary Medical Center (Large Animal) will be the primary training location for the ISU portion of the residency.

2. Objectives

2.1 To provide advanced training in clinical problem solving and diagnostic and therapeutic techniques in the specialty field.

2.1.1 To become familiar with diseases afflicting veterinary patients and to be able to logically correlate all clinical data in order to formulate and execute correct treatment plans.

2.1.2 To provide a firm understanding of the underlying pathophysiological basis of disease.

2.1.3 To master the art and science of complete patient care, assess outcomes and to appreciate the economic and emotional factors involved in the health care of animals.

2.1.4 To develop the art of interpersonal communications for proper colleague and client relationships.

2.2 To provide didactic and tutorial teaching training and experience.

2.3 To satisfy the requirements for examination by their specialty college.

2.4 To provide experience in scientific and clinical case presentation through the seminar and house officer rounds program.
2.5 To provide experience in the preparation and submission of scientific articles for publication and/or presentation.

2.6 To provide experience in designing and conducting a clinical research project.

3. **Prerequisites**

3.1 Candidates must have a DVM or an equivalent degree.

3.2 Candidates must have satisfactorily completed at least a one year rotating internship or its equivalent post graduate veterinary experience.

3.3 Candidates must have successfully completed the National Board examination or its equivalent in the certifying country; must be approved to practice veterinary medicine in the United States.

3.4 Candidates must be/become licensed to practice veterinary medicine in the state of Iowa prior to employment

3.5 Candidates must have the goal of specialty board certification.

3.6 Candidates must have a satisfactory moral and ethical standing.

4 **Faculty Advisor**

4.1 The resident will be assigned to a faculty advisor (mentor) who has Diplomate status in their specialty field within the first month of the program. This may be the same or a different person than the Program Director.

4.2 Responsibilities of the advisor/mentor include:

   4.2.1 The advisor will directly oversee the resident’s training and act as a liaison with other faculty members in the College of Veterinary Medicine.

   4.2.2 Direction and coordination of the clinical program

   4.2.3 Advice toward research, publications, and preparation for Specialty Board examinations

   4.2.4 Approval of requests by faculty for the resident to participate in teaching, research or other activities.

   4.2.5 Advising on preparation and reviewing presentation performance of seminars and case rounds.

   4.2.6 Professional guidance.
5. **House Officer Presentations & Rounds Programs**

The VCS Department offers House Officers several educational opportunities to enrich their training programs and obtain teaching experience. Some of these opportunities are in collaboration with other departments within the College. The menu of rounds and seminars is tailored to assist House Officers in literature review and board preparation and to expose them to a broad range of clinical and academic experiences. The weekly VCS Seminar/Rounds Program requires attendance and participation by all House Officers while participation in other rounds is program dependent.

5.1 The **VCS Seminar/Case Presentations Program** is designed to provide House Officers the opportunity to receive and present interesting, unusual, or difficult clinical material utilizing a problem oriented approach to professional colleagues and to develop manuscripts for publication.

5.1.1 All House Officers will participate and give presentations on a rotating basis. These presentations are scheduled by the Chief Resident.

5.1.2 House Officer attendance is required at all sessions. Attendance will be taken at the beginning of each session.

5.1.2.1 Notify the Leader of the House Officer Committee when an absence is anticipated (due to vacation or out-rotations and when due to illness).

5.1.2.2 Excused absences include the following: illness, annual leave, attendance or participation in a continuing education program, presentation of a lecture, scheduled out-rotation or special service requirement per request of the advisor. All other absences are unexcused unless deemed excusable by the House Officer Advisor.

5.1.3 House Officers will be required to present an additional seminar if they have more than one unexcused absence during a program year.

5.1.4 **VCS Case Presentations** are designed to provide House Officers the opportunity to receive and present interesting, unusual, or difficult clinical case material utilizing a problem oriented approach to professional colleagues and to develop manuscripts for publication.

5.1.4.1 All House Officers will a minimum of one case presentation each year of their program.
5.1.4.2 Case selection should be approved by the House Officer’s advisor or mentor well in advance of the presentation.

5.1.4.3 Case presentations should utilize the problem oriented approach, have good follow-up, include a discussion of the pertinent current literature and take approximately 20 minutes to present with an additional 5 minutes for discussion.

5.1.4.4 Members of the audience will complete evaluation forms giving comments on the quality of the presentation with suggestions for improvement. (See appendix 15.6)

5.1.5 **VCS Seminars** are designed to provide House Officers with the opportunity to research and present scientific information and then discuss the topic with professional colleagues.

5.1.5.1 A minimum of one seminar will be prepared and given by each House Officer in each year of their program. Some programs require two seminar presentations each year.

5.1.5.2 Topic selection should be focused and approved by the House Officer’s advisor well in advance of the scheduled presentation date and prior to performing an in-depth literature search.

5.1.5.2.1 Topics might include a literature search in preparation for writing a research grant.

5.1.5.2.2 The presentation may be the results of a research project.

5.1.5.2.3 The topic might be an area of interest or one which will improve your expertise and understanding.

5.1.5.3 Seminar presentations of approximately 40 minutes are expected with an additional 10 minutes available for discussion.

5.1.5.4 Members of the audience will complete evaluation forms giving comments on the quality of the presentation with suggestions for improvement. (See appendix 15.7)
5.2 Seminar/Rounds Schedule and participation requirement:

<table>
<thead>
<tr>
<th>Type</th>
<th>Frequency</th>
<th>Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>VCS Seminar/Case Presentation</td>
<td>weekly (Thursday 8 a.m.)</td>
<td>required</td>
</tr>
<tr>
<td>Service Resident Rounds</td>
<td>per service</td>
<td>required</td>
</tr>
<tr>
<td>Service Rounds w/students</td>
<td>per program</td>
<td>required</td>
</tr>
<tr>
<td>Radiology-Pathology Rounds</td>
<td>monthly (Tuesday 8 a.m.)</td>
<td>required</td>
</tr>
<tr>
<td>Evidence based medicine Rounds</td>
<td>monthly (Tuesday 8 a.m.)</td>
<td>optional</td>
</tr>
<tr>
<td>Morbidity/Mortality Rounds</td>
<td>bimonthly (Tuesday 8 a.m.)</td>
<td>optional</td>
</tr>
<tr>
<td>Student Grand Rounds</td>
<td>weekly (Friday 8 a.m.)</td>
<td>not required</td>
</tr>
<tr>
<td>Journal Club</td>
<td>weekly</td>
<td>required</td>
</tr>
<tr>
<td>Textbook Review Session</td>
<td>weekly</td>
<td>required</td>
</tr>
<tr>
<td>Anatomic Pathology Rounds.</td>
<td>weekly</td>
<td>optional</td>
</tr>
<tr>
<td>Rad-Equine Case Rounds</td>
<td>monthly</td>
<td>required</td>
</tr>
</tbody>
</table>

6.0 Teaching Program

6.1 Throughout the program residents will be viewed as role models by both interns and professional students. They should always present themselves in a professional manner.

6.2 The resident will participate in clinical instruction and evaluation of veterinary students assigned to clinics.

6.3 The resident will participate in preclinical didactic lecture and laboratory instruction as assigned by his/her advisor.

7.0 Board Certification

7.1 An important credential in veterinary medicine is board certification in a specialty area. One of the objectives of the program is to prepare the resident for certification by the American College of Veterinary Radiology

7.2 In order to qualify for examination the resident should refer to the published requirements of the college.

7.3 It is solely the responsibility of the resident to submit any material and fees required by the specialty college for registration, credentials applications or board examinations. (www.ACVR.com)
8.0  Clinical Program – Diagnostic Imaging

- Total length of the training program in months: 36 Months
- Total duration of supervised clinical training in the program: 30 Months
- Responsibilities of the resident in the remaining non-clinical portion of the program:
  1. to complete a residency research project, to draft the results in a manuscript suitable for publication, and to present the research findings to an audience of peers in the second or third year of the program.
  2. to successfully complete course instruction in radiation physics and radiation biology.
  3. to participate in instructional delivery of the normal anatomy of veterinary diagnostic imaging to first year veterinary students.

Below is a description of the 36 months of training.

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Rot: 3 wks. LA ultrasound Diagnostic Imaging Physics &amp; Radiation Biology @ Mercy College of Health Sciences in Des Moines</td>
<td>Required Rot: 2 wks. LA ultrasound @ New Bolton Center in May; 3 wks. radiation oncology &amp; nuclear medicine in Sept @ UMC; 3 d nuclear med course</td>
<td>Required Rot: 3 wks. cardiac ultrasound, site TBA</td>
</tr>
<tr>
<td>30 months (rad, US, CT, MRI, Nuclear medicine)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 months Research/SA/vacation (to include 1 semester course Radiation Physics &amp; Biology)</td>
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</tbody>
</table>

Diagnostic Imaging Objectives/Goals:

1. To master the art and science of veterinary diagnostic image interpretation in all core areas, to be able to logically correlate all imaging findings and clinical data in order to formulate accurate conclusions which, in turn, may provide direction for case management and to appreciate the economic and emotional factors related to the health care of veterinary patients.
2. To provide a firm understanding of the underlying radiation physics and anatomic basis of veterinary diagnostic imaging.
3. To develop expertise in interpersonal communications for proper colleague and client relationships.
4. To allow the resident an opportunity to develop teaching skills as they participate in the educational training of veterinary students.
5. To constantly pursue academic enrichment.
6. To complete a residency research project, to draft the results in a manuscript suitable for publication, to obtain instruction and guidance in manuscript writing and submission for
publication in refereed journals and to present the research findings to an audience of peers in the second or third year of the program.

7. To satisfy all requirements to sit both the written and oral examinations of the American College of Veterinary Radiology

8.1 Year I Resident's Program

8.1.1 Training described above.
8.1.2 The resident will participate in the instruction of clinical students and interns. Participation in CVM student laboratories will be assigned as needed.
8.1.3 The resident will participate in house officer rounds, ward rounds, journal club, special topic conferences, seminars, and other scheduled conferences of the VMC. He/She will attend other scheduled seminars in the CVM as time permits.
8.1.4 The resident will present 1 seminar (to faculty and house officers) on a topic of interest to the resident and 1 case report in VCS Seminar/Rounds
8.1.5 The resident will participate in Known Case Conference approximately every 3 weeks.
8.1.6 The resident may attend a major professional meeting at some point during the program with the advice and approval of his/her faculty advisor and the house officer committee. Expenses will be paid by the resident. The meeting must be scheduled during a non-clinical block.
8.1.7 The resident is encouraged to attend and participate in continuing education meetings sponsored by the CVM or by local and regional veterinary organizations.
8.1.8 The resident must register with the specialty college prior to August 31st and follow their requirements. (www.acvr.org)
8.1.9 The resident is encouraged to prepare a research proposal; review it with his/her faculty mentor, and submit it for funding consideration.
8.1.10 The resident may, with the approval of the resident's advisor and the faculty, participate in clinically relevant graduate courses. Course work must not interfere with the clinical and instructional responsibilities of the resident.

8.2 Year II Resident's Program

8.2.1 Training described above.
8.2.2 The resident will present one seminar and one case report (to faculty and house officers) on a topic of interest to the resident in the VCS Seminar/Rounds session.
8.2.3 The resident will keep a log of cases assessed during external rotations which will be submitted to the residency director following each experience.
8.2.4 The resident should make applications for sitting examinations if applicable.
8.2.5 The resident will begin or continue the research project if funding has been obtained.

8.3 Year III Resident’s Program

8.3.1 Training described above.
8.3.2 The resident will submit one paper suitable for publication to their mentor and the House Officer Chair by June 1.
8.3.3 The resident will present one seminar and one case report (to faculty and house officers) on a topic of interest to the resident in the VCS Seminar/Rounds session.

8.3.4 The resident will keep a log of cases assessed during external rotations which will be submitted to the residency director following each experience.

8.3.5 The resident should make applications for sitting examinations if applicable.

8.4 Year 4 – NA

8.5 Outside Rotations:
Some ancillary clinical experiences will be accomplished off-site.

8.5.1 One semester each of Radiation Physics and Radiation Biology courses – to be completed at the School of Radiographic Technology, School of Allied Health, Mercy College of Health Sciences – Des Moines. Program Chair: Dr. Suzanne Crandall, Ed.D, R.T. (Tuition costs covered by VCS Department.)

8.5.2 Three week Radiation Oncology and Nuclear Medicine External Rotation to be completed at the University of Missouri-Columbia in second year. Faculty Contact: Dr. Jimmy Lattimer, Diplomate, American College of Veterinary Radiology / Radiation Oncology. (Travel and housing costs covered by resident.)

8.5.3 Two week Large Animal Ultrasound External Rotation – to be completed at New Bolton Center Campus, University of Pennsylvania in 2nd year. Faculty Contact: Dr. Virginia Reef, DVM. (Travel and housing costs covered by resident.)

8.5.4 Three day Nuclear Medicine Short Course – to be completed at the University of Tennessee in second year. Faculty Contact: Dr. Federica Morandi, Diplomate, American College of Veterinary Radiology.

9 Research Project
The Department of Veterinary Clinical Sciences requires its residents to participate in scholarly activity such as literature reviews, and basic, applied or clinical research. To that end the resident is encouraged to:

9.1 Design a research project to address a specific question or problem in the discipline

9.2 Write a research grant proposal that may be used to seek funding for the project.
   9.2.1 The anticipated timeline for completion of the proposal should be December of the 1st year.
   9.2.2 Proposals are to be submitted for funding.

9.3 Conduct the research according to the experimental design.
   9.3.1 Research is to be conducted during off-clinic time.
   9.3.2 Completion is expected during the residency.

9.4 Analyze and report the results of the project
   9.4.1 Research is to be presented to the VCS faculty and residents during seminar.

9.5 Publication of these results in a refereed journal is expected.
   9.5.1 A manuscript suitable for publication is to be completed prior to the conclusion of the residency.
10 **Facilities and Equipment**

10.1 The College of Veterinary Medicine Teaching Hospital (VTH) is a fully accredited hospital (AAHA, AALAC) with full AVMA accreditation. The facility encompasses the Iowa State Veterinary Diagnostic Laboratory, an accredited (AAVLD) full service laboratory providing clinical pathology, histopathology, immunohistochemistry, immunology, microbiology, virology and toxicology support. The VTH contains full service small and large animal medicine and surgery facilities.

10.2 **Library and other Literature Resources**

The Veterinary Medical Library, housed within the College of Veterinary Medicine building, contains both human and veterinary textbooks as well as bound serial publications. Parks library on main campus is easily accessible via daily transport of holdings between libraries upon request. An extensive collection of online journal subscriptions is available to the resident free of charge via the Interlibrary Loan/Document Delivery service. Computer-based retrieval systems MEDLINE, CAB and AGRICOLA abstracts are available electronically. A wide selection of current journals is available in the library and online.

10.2.1 Each resident is required to be familiar with pertinent articles in the current literature. Reasonable expenses for photocopying are defrayed by the Hospital.

10.3 Diagnostic Imaging - see appendix 15.9 for details

11 **Evaluation and Reappointment**

11.1 A written critique will be provided at least every 6 months by the advisor or section. The critique will cover:

11.1.1 Professional ability; to include theoretical knowledge and application of that knowledge, clinical skills, tutorial skills, and scholarly activity.

11.1.2 Hospital services; to include communication skills, patient care, medical record quality, emergency duty quality, and adherence to VMC protocol.

11.1.3 Personal characteristics; to include responsibility, initiative, interaction with faculty, staff and students, deportment and leadership

11.2 The resident will meet with his or her advisor to discuss their progress. A summary of the discussion will be signed by both advisor and resident.

11.2.1 In the case of an unsatisfactory performance the advisor and program director will develop an action plan to guide improved performance. The action plan must include the following elements:

11.2.1.1 A list of action items to be accomplished that are detailed, clear, and aligned with a timeline.

11.2.1.2 A specified date for follow-up evaluation.
11.2.1.3 A description of consequences if the action items are not completed by the designated timeline.

11.2.2 House officers that are evaluated as unsatisfactory and are currently working under an action plan are not eligible for a pay increase (usually July 1st). Once the house officer has made significant progress and the action plan marked as successfully completed, they could be eligible for a pay increase (usually January 1st).

11.3 In March of each year, the House Officer Committee will review the year's critiques. Following that review, the committee will make a recommendation to the Head of the Department of Veterinary Clinical Sciences to:
   11.3.1 Continue the appointment for another year with or without probation
   11.3.2 Award a certificate upon satisfactory completion of the program.
   11.3.3 Not to reappoint the resident, with a minimum of 30 days’ notice of termination. At the discretion of the House Officer Committee and in consultation with the resident’s service, guidelines can be formulated that if met, may allow the resident to be re-instated at the end of the specified period.

11.4 The resident will be asked each year to make an assessment of their program with suggestions for improvement. The evaluation form will be handed out in May or June and must be returned before completion of that year in July

12 House Officer Committee
The committee is comprised of a representative of each house officer program, the VCS Head (ex officio), and the Director of the VMC (ex officio). It will be responsible for:

   12.1 The selection of residents from the application pool (with the advice of the faculty of the sponsoring discipline).
   12.2 Annual review of the resident's progress (in the ninth month of each year).
   12.3 Annual recommendation for reappointment of the resident or program completion.
   12.4 Program approval, renewal, oversight and establishment of policy.

13 Employment and Benefits
13.1 Iowa State University residents and interns are classified as adjunct, non-tenure eligible faculty and as such are governed by the faculty handbook (www.provost.iastate.edu/faculty/handbook/current)
13.2 Iowa State University offers a competitive salary and a comprehensive benefit package to house officers. Full faculty benefits are provided, including medical, dental, and professional liability (limited). House officers are encouraged to investigate personal professional liability insurance coverage. (http://www.hrs.iastate.edu/hrs/files/Faculty-Benefit-Summary-2011.pdf )
13.3 The salary for residents is approximately $29,000.00; incremental annual raises may be awarded in the second and third year. The salary (not a stipend) is published in the Directory of Internships and Residencies as published by the American Association of Veterinary Clinicians (www.virmp.org). Salary is payable
in monthly increments. Retirement contributions, social security, federal and state taxes are withheld from each paycheck.

13.4 As employees of the University residents and interns are considered full-time adjunct faculty and earn 16.0 hours per month of vacation/annual leave (192 hours or 24 days/year) and 12.0 hours per month of sick leave.

13.4.1 Annual leave may only be taken/granted for the amount of time accrued.

13.4.2 Annual leave is to be taken when the house officer is not scheduled on clinic or emergency duty. Vacation requests must be made at least 2 weeks in advance of the desired vacation time.

13.4.3 After approval by the House Officer’s advisor, requests must be made on the standard University Leave Form reviewed by the Program Director/Coordinator and signed by the program’s Section Leader and the Chair of the Department of Veterinary Clinical Sciences or the Hospital Director.

13.4.4 Accrued vacation time must be used during the term of the appointment or it will be forfeited upon termination. Vacation must not be used during the final three weeks of the term of the appointment.

13.5 A cell phone, desk, chair, place for book storage, and 5-drawer filing cabinet are also provided for each resident. A computer system is provided with word processing, spread sheet and presentation programs along with unlimited internet access and e-mail.

13.6 The Veterinary Medical Center operates year round. The resident will share with other house officers an emergency duty rotation. The rotation will commit the resident to a share of evening, weekend and holiday duty on a scheduled basis.

13.7 Consultation Policy (Outside Employment)
Concurrent employment of interns and residents at a site other than Iowa State University, College of Veterinary Medicine during their program is allowed provided the activity is approved by the House Officer’s advisor and the program director and a CVM Consultation Request Approval Form is completed and approved by the department chair and the college dean prior to any consulting activities.

13.8 Reappointment to the second, third and fourth year of the residency program is contingent upon satisfactory completion of the previous year's requirements.

14 Applications
14.1 Candidates may apply for the Residency in by completing:
14.1.1 A standard residency online application (V.I.R.M.P. application).
14.1.2 A statement of objectives for the residency and subsequent career goals.
14.1.3 A transcript of his/her academic record.
14.1.4 Three letters of reference from individuals currently familiar with the applicant's professional status.
14.2 Selection is based on:
  14.2.1 The above documents.
  14.2.2 Interviews may be required.

14.3 For more information about this program, please contact Dr. Kristina Miles, Iowa State University, College of Veterinary Medicine, Department of Veterinary Clinical Sciences, 1600 South 16th Street, Ames, Iowa 50011-1250. (Telephone 515-294-4900; email: kmiles@iastate.edu).

14.4 Iowa State University does not discriminate on the basis of race, color, age, religion, national origin, sexual orientation, gender identity, sex, marital status, disability or status as a U.S. veteran. Inquiries can be directed to the Director of Equal Opportunity and Diversity, 3680 Beardshear Hall, (515) 294-7612.

15 Appendices

  15.1 Faculty in support of the Program
  15.2 Code of Conduct & Collegiality
  15.3 Communication Tree
  15.4 Consultation Request
  15.5 House Officer Leave Request (in VCS office)
  15.6 House Officer Rounds Evaluation Form
  15.7 VCS Seminar Evaluation Form
  15.8 House Officer Evaluation Form
  15.9 Diagnostic Imaging Service Information

15.1 Faculty in Support of the Residency Programs:

Residency Program Director: Kristina Miles, DVM, MS, DACVR

Faculty

Listed below are the ISU imaging faculty accepting PRIMARY responsibility for training in each of the following core areas:

Roentgen diagnosis
  Faculty: Elizabeth Riedesel, DVM, DACVR
  Percentage clinical service: Approx. 65 %

Diagnostic ultrasound
Faculty: Kristina Miles, DVM, MS, DACVR
Percentage clinical service: Approx. 70%
Computed Tomography
  Faculty: Elizabeth Riedesel, DVM, DACVR
Magnetic Resonance Imaging
  Faculty: Elizabeth Riedesel, DVM, DACVR
Nuclear Medicine
  Faculty: Kristina Miles, DVM, MS, DACVR

Mini-Curriculum Vitae – Kristina Miles, DVM, MS, Diplomate, ACVR
Resume – Suzanne Elizabeth Crandall, Ed.D., R.T.(R)

Current Residents In-Training:
  Johanna Murray, DVM (2013-2016)
  Jacob Ewing, DVM (2014-2017)
  Eric van Eerde, DVM (2015-2018)

Pathology
  Amanda Fales-Williams, DVM, PhD, Diplo. ACVP
  Jesse Hostetter, DVM, PhD, Diplo. ACVP
  Mark Ackerman, DVM, PhD, Diplo. ACVP

Other Clinical Faculty:
Anesthesiology
  Stefano Di Concetto, DVM, Diplomate ACVAA
  Dean H. Riedesel, DVM, PhD, Diplomate ACVA
  Bonnie H. Kraus, DVM, Diplomate ACVS, Diplomate ACVAA
  Jennifer Bornkamp, DVM
Cardiology
  Jessica Ward, DVM, Diplomate ACVIM (Cardiology)
  Wendy A. Ware, DVM, MS, Diplomate ACVIM (Cardiology)
Dermatology
  Darren Berger, DVM, Diplomate ACVD
  James O. Noxon, DVM, Diplomate ACVIM (Internal Medicine)
  Diana Miller, DVM
Emergency and Critical Care Medicine
  Michael Curtis, DVM, PhD, Diplomate ACVECC
Internal Medicine
  Albert E. Jergens, DVM, PhD, Diplomate ACVIM (Internal Medicine)
  Chad Johannes, DVM, Diplomate ACVIM (Internal Medicine and Oncology)
  Dana LeVine, DVM, PhD, Diplomate ACVIM (Internal Medicine)
  Jean-Sebastien Palerme, DVM, Diplomate ACVIM (Internal Medicine)
  Brett Sponseller, DVM, PhD, Diplomate ACVIM-LA
  Laura van Vertloo, DVM, Diplomate ACVIM (Internal Medicine)
David Wong, DVM, MS, Diplomate ACVIM-LA, ACVECC

**Neurology**
Rodney Bagley, DVM, Diplomate ACVIM (Neurology), Department Chair (practice limited to consultation)
Nicholas Jeffery, BVSc PhD, Diplomate ECVN, ECVS, FRCVS (spinal surgery)

**Oncology**
Leslie E. Fox, DVM, MS, Diplomate ACVIM (Internal Medicine)

**Ophthalmology**
Gil Ben-Shlomo, DVM, PhD, Diplomate ACVO
Rachel Allbaugh, DVM, MS, Diplomate ACVO

**Primary Care**
Bianca Zaffarano, DVM
Brenda Mulherin, DVM, Diplomate AVDC
June Olds, DVM
Bryce Kibbel, DVM
Joyce Carnevale, DVM

**Surgery -SAS**
Karl Kraus, DVM, Diplomate ACVS
Mary Sarah Bergh, DVM, MS, Diplomate ACVS-SA, Diplomate ACV Sports Medicine
Cheryl Hedlund, DVM, MS, Diplomate ACVS
William D. Hoefle, DVM, MS, Diplomate ACVS
Louisa Ho, DVM
James P. Toombs, DVM, MS, Diplomate ACVS

**Surgery – Equine**
Scott McClure, DVM, PhD, Diplomate ACVS
Larry Booth, DVM, MS, Diplomate ACVS
Stephanie Caston, DVM, Diplomate ACVS-LA
Kevin Kersh, DVM, Diplomate ACVS-LA

**Theriogenology**
Swanand Sathe, BVSc. MVSc. MS Diplomate ACT
Tyler Dohlman DVM MS Diplomate ACT
Patrick Phillips DVM Diplomate ACT
Nyomi Galow-Kersch, DVM

15.2 **Code of professional conduct**

A code of conduct is meant to help guide professionals in proper interaction with other professionals. No document can be all inclusive or specific. This list is meant to direct a professional veterinarian, or veterinary student, toward proper conduct and interactions within the hospital and college.

1. Each clinician (faculty, residents, and interns) has numerous interactions with veterinary students and should realize that they are role models for these students. Professional attire and language, and appropriate interactions with referring veterinarians are expected at all times. All clinicians must take care to never use denigrating or insulting language when referring to other veterinarians including referring veterinarians, or to students.
2. Clinicians should refer to each other and other veterinarians as “Doctor” while in the hospital and should instruct students to do the same.

3. All clinicians should strive for the best care for all patients in our hospital. It is inevitable that there will be differences of opinion as to what that best care entails. There is also the possibility that a clinician, for whatever reason, is not caring for a patient to a standard appropriate for this hospital. If a clinician feels that a patient is not cared for appropriately or to a certain standard, then that clinician should discuss their concerns with the attending clinician in a collegial manner (in private venue, not in front of colleagues or students).

4. It is appropriate to collegially discuss the care of cases in case rounds and in the presence of the attending clinician on the case. It is inappropriate to question the care of a patient by another clinician in the presence of clients, students, house officers, referring veterinarians, or attending clinicians outside of case rounds or without the presence of the attending clinician. This is a severe breach of medical ethics and may warrant corrective measures.

5. Students and clinicians come from diverse backgrounds and cultures. It is inappropriate to discuss another professional’s personal life while conducting hospital business.

**College of Veterinary Medicine Collegiality Policy:**

All CVM employees have a responsibility to maintain a positive workplace that is free of discrimination and harassment. Collegial interactions with all co-workers in the CVM are required. Faculty and staff are expected to model safe and fiscally responsible behavior for students, and are expected to be in compliance with established policies of the CVM and Iowa State University (including the ISU Code of Computer Ethics and Acceptable Use, biosafety regulations, OSPA, purchasing, etc.). All faculty and staff are expected to participate in the annual performance evaluation process.
15.3  **Communication/ Conflict Pathway to Resolution:**

15.3.1 Personnel interactions

*Advisors are apprised when deemed appropriate.*
### 15.3.2 Client Complaint via evaluation of service or other means to Hospital Director or other Administrators:

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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<tbody>
<tr>
<td>Problem Reported</td>
<td>Hospital Director to notify House officers service faculty mentor &amp; advisor</td>
</tr>
</tbody>
</table>
| Problem Investigated | Service faculty mentor meets with House Officer  
Service faculty mentor discusses with advisor |
| Problem Discussed | Faculty Advisor meets with House Office to discuss  
Advisor offers suggestions how to avoid similar problems in the future |
| Advisor Reports | Episode to HO Program Director  
Outcome to Hospital Director |
| Unresolved Problem | HO Program Director or Hospital Director reports to HO Committee Leader |
| HO Committee Leader | No Further action or  
Committee Discussion  
• HO Committee Discussion |
| Resolution | Protocol established  
Corrective action taken  
Continuation in program discussed |
| Resolution Reported or Unresolved | To Dept. Head (program' issues)  
To Hospital Director (hospital issues) |
College of Veterinary Medicine
Iowa State University

CONSULTING REQUEST APPROVAL FORM

This form must be approved by the Department Chair/Unit Director and Dean prior to consulting activity.

Name

Date of this Request

Proposed Date of Consulting Activities

Who are you consulting for?

Where will you be consulting?

What is the purpose of the consulting activity?

Reminder: All full-time faculty and P&S staff are required to disclose potential conflicts of interest annually, or whenever their situation changes, whether they think they have a conflict of interest or not. Using the Access Plus system, faculty and P&S staff should go to the Employee tab and click on "COI Disclosure" and fill in the Conflict of Interest Disclosure Form. If you have any questions, please review the COI policy at: www.provost.iastate.edu/COI/

APPROVALS

__________________________________________  ________________________________
Department Chair/Unit Director                    College Dean
15.5 Leave authorization forms are available in the VCS office.

Guidelines for Scheduling Leave:

The procedure for requesting vacation is as follows:
1. Determine the times/days for your absence.
2. Confirm the time and dates with your program director and advisor.
3. Fill out an Absence Request card (sample enclosed) two weeks in advance of your planned vacation day(s).
4. Have the card signed by your program director.
5. Give the card to the person in charge in the Hospital Director’s Office.
6. Inform the reception desk of your absence and the dates.
7. Place a red card in your message slot at the front desk indicating you are not in the clinic.

The procedure for requesting an approved out-rotation is similar:
1. Approved out-rotations are considered authorized leave.
2. Notify advisor and program director well in advance of your intent to participate in an out-rotation.
3. Organize the rotation with an approved program and mentor at the out-rotation location with the assistance of your advisor &/or program director.
4. Obtain final approval of the program director at least four weeks in advance of the rotation.
15.6 VCS House Officer Rounds

Case Presentation Evaluation Form

House Officer: ___________________________________________________________

Date:  ____________Topic:__________________________________________

Evaluator: ___________________________________________________________

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>E = excellent</td>
<td>G = good</td>
</tr>
</tbody>
</table>

**Case Selection**

Complexity of case  

Appropriate case follow-up  

**Content**

Format of presentation (complete, logical, appropriate length)  

Use of problem-oriented approach (data or evidence to support important points)  

Knowledge of subject (well researched, accurate, comfortable, question response)  

Discussion (relevance, good references, accurate)  

Conclusions  

**Delivery**

Clarity of speech (mumbles, clear, pronunciation, vocalized pauses [uh, um, well, so, etc.])  

Rate of delivery (too fast, too slow)  

Eye contact (consistent, entire audience, notes)  

Body language/enthusiasm (nervous, relaxed, self-confidence)  

**Effectiveness of presentation**

Use of visual aids (spelling, wordiness, colors, clarity, appropriate images, organized)  

Professionalism (attire, appropriate humor, self-confident)  

Questions handled appropriately  

**Additional Comments:**

____________________________________________________________________________________

____________________________________________________________________________________
15.7 Seminar evaluation:

VCS Seminar Evaluation

Presenter: ________________________________ Date: _____________________

Audience: ___________________________________________________________

Title/Topic: ____________________________________________________________________________

<table>
<thead>
<tr>
<th>Evaluation Criteria</th>
<th>Points</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Definition of Subject: introduction, importance, clinical significance</td>
<td>0-5 pts</td>
<td>__________</td>
</tr>
<tr>
<td>2. Organization:</td>
<td>0-15 pts</td>
<td>__________</td>
</tr>
<tr>
<td>3. Quality of material, scientific depth</td>
<td>0-15 pts</td>
<td>__________</td>
</tr>
<tr>
<td>4. Presence: Speaking ability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Clarity</td>
<td>0-10 pts</td>
<td>__________</td>
</tr>
<tr>
<td>b. Rate of delivery</td>
<td>0-10 pts</td>
<td>__________</td>
</tr>
<tr>
<td>c. Enthusiasm, expressiveness, mannerisms</td>
<td>0-10 pts</td>
<td>__________</td>
</tr>
<tr>
<td>5. Visual aids: slides &amp; text, images, graphs</td>
<td>0-10 pts</td>
<td>__________</td>
</tr>
<tr>
<td>6. Appropriate summary?</td>
<td>0-5 pts</td>
<td>__________</td>
</tr>
<tr>
<td>7. Presentation consistent with audience level?</td>
<td>0-10 pts</td>
<td>__________</td>
</tr>
<tr>
<td>8. Questions/discussion handled appropriately?</td>
<td>0-10 pts</td>
<td>__________</td>
</tr>
</tbody>
</table>

Total __________

Comments: __________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
___________________________________________________________________________________________
Evaluator: ______________________________

Evaluator: ______________________________

Evaluator: ______________________________
15.8  **House Officer Evaluation Form:**

Person being evaluated: ___________________________ Date of Evaluation: ___________________________

### RATING SCALE

1  (poor):  Below acceptable standards; performance consistently deficient

2  (fair):  Improvement needed to meet acceptable standards; performance is inconsistent

3  (acceptable) Meets acceptable standards; consistent performance of job requirements

<table>
<thead>
<tr>
<th>Rating</th>
<th>Criteria Evaluated</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Dependability:</strong> Reliability, extent to which employee can be counted on to complete assigned tasks, meet position objectives, and have good attendance.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Motivation:</strong> Initiative, interest and “self-starting,” enthusiastic attitude results in a high level of performance. Continued high rate of effective effort.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Communication Skills:</strong> Appropriate and clear presentation of ideas verbally and in writing.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Interpersonal Relations:</strong> Works effectively and harmoniously with others including staff, faculty, and students</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Team Skills:</strong> Advances goals of team above self-interests with supportive, cooperative, and positive behavior.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Planning/Organizing/Problem Solving:</strong> Determines what needs to be done, prioritizes, and plans time wisely. Completes tasks on time.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Work Output:</strong> Meets job standards relative to quality and quantity of work output.</td>
<td></td>
</tr>
<tr>
<td><strong>Judgment:</strong> Displays effective thought, vision, creativity, and reasoning, which results in appropriate action within limits of job responsibility.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Professionalism:</strong> Maintains professional image with appropriate hygiene, appearance, language, ethical and humane behavior.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Adaptability:</strong> Willingly accommodates changing situations and unexpected needs of the position. Supports long-term positive change. Works towards objectives even when frustrated, discouraged, tired, or stressed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Knowledge of Discipline:</strong> Understands the fundamentals, methods, and procedures required in present job</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Technical Skills:</strong> Possesses the technical skills to fulfill the needs of the position. Instills full confidence among colleagues.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Facilities

1. Philips Multidagnost Eleva Stationary Fluoroscopy C-arm (Special Procedures) X-ray Unit: Purchased in 2011, this R&F unit used for special procedures requiring the use of fluoroscopy and/or digital spot films, as well as interventional small animal radiography.

2. Eklin DR digital radiography unit for imaging small animal patients was purchased in 2008 for use with the Philips Clinix R&F unit. DR images are transferred directly to the Merge Efilm PACS.

3. Innovet X-ray Unit: This 2004 unit is a versatile, high volume small animal diagnostic X-ray machine. The unit has been fitted with an Eklin digital imaging sensor system, purchased in 2008, to provide DR images for the Merge Efilm Picture Archiving and Communication System (PACS).

4. Philips Overhead Tube & Grid System (Large Animal X-ray Unit): Purchased in 2003, this 1000 mA tube is linked to an overhead rail system and a wall mounted grid to obtain high quality images in large animals.

5. An Eklin Mark 5 provides DR images to the Merge Efilm PACS from the Philips 1000 mA tube. Also purchased in 2008.

6. Equine and bovine distal extremities are obtained with a portable MinXray HF 8015 unit.

7. Eklin DR-3 digital radiography unit for imaging of equine extremities with the MinXray. Purchased in Sept 2006 and supported by Merge EFilm PACS.

8. Two wall-mounted dental X-ray tubes and Schick digital sensor system provide small animal digital dental images to the Merge Efilm PACS.

9. Toshiba LB (large bore) 16-slice multidetector Computed Tomography unit: installed in July 2010 in a Phase I dedicated site in the Lloyd Veterinary Medical Center (LVMC). This new acquisition includes a VITAL software package, bone densitometry software and a separate Universal Equus large animal CT table capable of integrating with the Toshiba MDCT unit. The Toshiba MDCT unit replaces the current Philips UltraZ Computed Tomography scanner. The UltraZ was purchased in 2002 and provided single slice axial and spiral imaging with a gantry table weight limit of 350 pounds.
10. Philips iU-22 Ultrasound unit: Purchased in Sept. 2005, this unit is used for all small animal abdominal ultrasound exams. A separate Siemens Sequoia ultrasound unit has been obtained for the ISU Cardiology service.

11. Diagnostic Nuclear Scintigraphy is performed with a new Enhanced Technologies system installed in the Phase I Large Animal hospital portion of the LVMC in October 2009. The gamma camera and dedicated nuclear imaging computer operate under a Mirage software system.

12. MRI is available on-site utilizing a 1.5 Tesla GE Signa magnet system with EXCITE software. The magnet was installed in a new, permanent suite in the LVMC in August 2008.

13. Dragon Naturally Speaking voice recognition software system: allows dictation of imaging reports directly into the electronic medical record.

**Clinical Resources**

**Approximate number of patients seen annually by ISU Veterinary Medical Center**

- Small Animal Patients: Approx. 11,762
- Large Animal Patients: Approx. 5,745
- Total Patients: Approx. 17,507

**Annual imaging caseload**

- Small Animal Exams: Approx. 6,982
- Large Animal Exams: Approx. 989
- Total Exams: Approx. 7,971

**Approximate breakdown of the patient population in imaging according to species**

- Small animals (canine, feline): Approx. 4,855
- Large animals (equine and food animals): Approx. 688
- Exotic animals (predominantly raptors): Approx. 50 (ISU Wildlife Care Clinic)

**Approximate annual imaging caseload of the program**

- Small Animal Radiology exams: Approx. 6,982
- Large Animal Radiology exams: Approx. 688
- Abdominal Ultrasound exams: Approx. 1,000
- Computed Tomography exams: Approx. 275
- Nuclear Medicine exams: Approx. 46
- Magnetic Resonance Imaging: Approx. 70
- Other (specify): I-131 Treatment: 20

**Training Content**

Percentage of preliminary reports generated from the imaging caseload by the resident:
- Year One: 55%
- Year Two: 65%
- Year Three: 85%

Percentage of resident reports reviewed by the imaging faculty prior to finalization of the report: 100%

Distribution of the CLINICAL experience the resident receives in full time equivalent months:

<table>
<thead>
<tr>
<th>Topic</th>
<th>Approximate number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Animal Radiology</td>
<td>14</td>
</tr>
<tr>
<td>Large Animal Radiology</td>
<td>3.5</td>
</tr>
<tr>
<td>Abdominal Ultrasound</td>
<td>5.5</td>
</tr>
<tr>
<td>+ Cardiac Ultrasound</td>
<td>0.5</td>
</tr>
<tr>
<td>(ISU-Dr. Wendy Ware, DACVIM)</td>
<td></td>
</tr>
<tr>
<td>Computed Tomography</td>
<td>3</td>
</tr>
<tr>
<td>Nuclear Medicine</td>
<td>0.75</td>
</tr>
<tr>
<td>(+ external rotation at UMC)</td>
<td>0.25</td>
</tr>
<tr>
<td>Magnetic Resonance Imaging</td>
<td>1</td>
</tr>
<tr>
<td>Elective (any of above)</td>
<td>0</td>
</tr>
</tbody>
</table>

Required elective (specify): see below

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Duration</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. large animal ultrasound external rotation (Tuft’s)</td>
<td>3 weeks</td>
<td>150</td>
</tr>
<tr>
<td>b. radiation oncology external rotation (University of Missouri-Columbia)</td>
<td>2 weeks</td>
<td>15</td>
</tr>
<tr>
<td>+ ISU Feline I-131 Therapy Program</td>
<td>1 week</td>
<td>25</td>
</tr>
</tbody>
</table>

**Total**

Course number and unit assignment required to meet the educational objectives for formal instruction

<table>
<thead>
<tr>
<th>Topic</th>
<th>Course Number</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radiobiology:</td>
<td>RAD 215</td>
<td>Mercy College of Health Sciences – Des Moines</td>
</tr>
<tr>
<td>and</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Radiobiology, Radiation Protection, and Risks vs. Benefits
Carl D. Elliston, David J. Brenner and Eric J. Hall

School of Radiologic Technology
8-11 Wednesdays
Spring Semester, Year 1
World Wide Web-Based Education Program of the Radiological Society of North America (RSNA): Web-Rad-Train
http://www.web-rad-train.org

<table>
<thead>
<tr>
<th>Radiation physics:</th>
<th>RAD 205 and Interactions of Radiation with Matter</th>
<th>Methodist Medical Center/Iowa Health – Des Moines</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>School of Radiologic Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8-11 am Wednesdays</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fall Semester, Year 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>World Wide Web-Based Education Program of the Radiological Society of North America (RSNA): Web-Rad-Train</td>
</tr>
</tbody>
</table>

**The Physics of:**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Course Number</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Radiology:</td>
<td>RAD 205</td>
<td>Mercy College of Health Sciences – Des Moines</td>
</tr>
<tr>
<td></td>
<td></td>
<td>School of Radiologic Technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>8-11 am Wednesdays</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fall Semester, Year 1</td>
</tr>
<tr>
<td>Nuclear Medicine:</td>
<td>Nuclear Medicine Short Course</td>
<td>University of Tennessee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Three day Short Course</td>
</tr>
<tr>
<td>Ultrasonography:</td>
<td>The Physics of Ultrasound</td>
<td>Kremkau, Frederick, PhD. Five disc short course series produced by Wake Forest University, Dept. of Radiology</td>
</tr>
<tr>
<td>CT:</td>
<td>CT Technology, Principles &amp; Techniques with an Emphasis on Multidetector CT</td>
<td>CT Lecture Series (Six of thirty-eight lectures) at <a href="http://www.CTisus.com">www.CTisus.com</a> produced by the Advanced Medical Imaging Laboratory (AMIL). AMIL is a multidisciplinary team dedicated to research, education, and the advancement of patient care using medical imaging with a focus on spiral CT and 3D imaging. The AMIL is headed by Elliot K. Fishman, M.D.</td>
</tr>
<tr>
<td></td>
<td>A Symposium Presented by Siemens Medical Systems</td>
<td>In addition to: See MRI listing</td>
</tr>
</tbody>
</table>
External classes and short courses will be supplemented with monthly resident review sessions to assure knowledge-base, understanding and familiarity with the above listed Physics topics.

**Research Environment**

Average number of peer reviewed publications over the last 5 years on which the IMAGING faculty are included as authors: Three

Number of publications/submissions expected of a resident completing the program: One

Advanced degree requirement at ISU to complete radiology residency program: Not at this time

**Educational Environment**

Number of lectures or scientific presentations expected of each resident during the course of their training: Three seminars and 3 case presentations.

**Evaluation**

Resident performance will be evaluated at 3 month intervals the first year, with six month intervals for the remainder of the program.

**Known Case Conference (KCC)**

Known Case Conference discussions will be held approximately every three weeks.

**Literature Resources**

Nearest medical library:
The primary medical collection for the ISU Library is located on-site (both paper and electronic collection). Additional materials are available through the main ISU Parks Library on campus (2 miles). Further materials can be obtained through interlibrary loan from the University of Iowa or other locations.