



RESIDENCY TRAINING PROGRAM REGISTRATION
2019-2020
CARDIOLOGY

Part One

New applications for ACVIM Residency Training Programs must be received by the Residency Training Committee (RTC) 90 days prior to any residents beginning training. Before completing this form, please review the general and specific requirements for Cardiology Residency Training Programs in the ACVIM Certification Manual (CM). The current version of the CM is available on the ACVIM website at www.ACVIM.org.

Prior to making significant changes in a residency training program, approval of the ACVIM and Cardiology RTC must be obtained. The Candidate and/or Program Director must notify ACVIM, in writing before the changes are made to ensure that the proposed changes are approved. Significant changes could include, but are not limited to the following: changes in Program Director or advisors, transferring from one program to another, alterations in program duration, locations of secondary site training, switching to a 'dual board' program or enrolling in an institutional graduate program.

Notice: The data collected in this form is necessary both for the ACVIM to maintain its accreditation as a Registered Veterinary Specialty Organization and also is required for renewal of the residency training program. Some of the data collected is required of every specialty and some is specific to the specialty of Cardiology.

For multi-site residency programs: To ensure uniformity of training and compliance with current CM requirements, training programs that include multiple sites must provide detailed information regarding supervision and facilities available at each specific site(s). Multi-site programs, if any, will be addressed by the Program Director in Part Two.

Program Director Name:

Must be an active Diplomate of ACVIM in the Specialty of Cardiology or an approved ECVIM Diplomate in Cardiology

Program Director's Contact Information:

Work Phone:	<input type="text" value="(540) 231-4621"/>
Mobile Phone:	<input type="text"/>
E-mail:	<input type="text" value="abbottj@vt.edu"/>
Mailing Address:	<input type="text" value="SA Clin. Sci., VA-MD CVM
205 Duckpond Dr., Virginia Tech
Blacksburg, VA 24061-0442"/>

1. Location of Sponsoring Institution (Primary Site of Residency Training Program):

Primary Site Location:	Length of Training Program:
<input type="text" value="Virginia Tech"/>	<input type="text" value="3 year"/>

2. Resident Advisor(s): Must be a Diplomate of ACVIM in the Specialty of Cardiology or an approved ECVIM Diplomate in Cardiology. There is no restriction on the number of Resident Advisors; however, each Resident Advisor can supervise up to two residents concurrently.

<input type="text" value="Jonathan Abbott"/>
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3. Supervising Diplomate(s) on-site: Must be an active Diplomate of ACVIM in the Specialty of Cardiology or an approved ECVIM Diplomate in Cardiology.

<input type="text" value="Jonathan Abbott - Cardiology
Sunshine Lahmers - Cardiology
Michele Borgarelli - ECVIM-Cardiology"/>

4. Diplomates of ACVIM responsible for supervision of clinical training who specialize in areas other than Cardiology. If off-site, please explain the situation, and the method of providing direct contact with the resident.

Name and Specialty	Comments

5. Residents currently participating in your training program, along with the beginning date of the program, expected ending date of the program, and designated resident advisor. All current residents and incoming residents (if known) should be listed here. Unless specifically approved, in advance, by the CRTCC, the ratio of cardiology residents to on-site Cardiology Diplomates who are actively involved in resident training cannot exceed 2 to 1.

Resident Name	Start date (mm/dd/yyyy)	End Date (mm/dd/yyyy)	Resident Advisor Name*
Giulio Menciotti	7.15.17	7.15.20	(Jonathan Abbott)
Hyeong Jeong	7.15.19	7.15.22	(TBD)



American College of **Veterinary** Internal Medicine

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Part Two

Part Two of the Cardiology Residency Training Program addresses general features that apply to all current residents. These questions will be used to provide the Residency Training and Credentials Committees with information needed to judge the structure, quality, scope, and consistency of training provided. (Part Three must be completed and submitted for each resident.)

Current Date:

Program Director Name:

(Must be a Diplomate of ACVIM in the Specialty of Cardiology or an approved ECVIM Diplomate in Cardiology)

Name of Sponsoring Institution (Residency Training Program):

1. Please list **all Diplomates of the American College of Veterinary Pathology and the European College of Veterinary Pathology** in the areas of clinical pathology or gross/histopathology associated with residency training. If off-site, please explain the situation, and the method of providing direct contact with the resident.

Name of Diplomate(s)	Clinical or Gross	ACVP or ECVP	Comments
Dr. Tom Cecere	Gross	ACVP	
Dr. Kevin Lahmers	Gross	ACVP	
Dr. Tany LeRoith	Gross	ACVP	
Dr. Kurt Zimmerman	Clinical and Gross	ACVP	
Dr. Sarah Barrett Dr. Katie M. Boes	Clinical Clinical	ACVP ACVP	

2. Please list **all Diplomates of the American College of Veterinary Radiology and European College of Veterinary Diagnostic Imaging** associated with residency training. If off-site, please explain the situation, and the arrangements for direct contact with the resident.

Name of Diplomate(s)	ACVR or ECVDI	Comments
Dr. Gergory B. Daniel	ACVR	Dr. Daniel currently serving as Interim Dean.
Dr. Kembra Clapp	ACVR	
Dr. Martha Larson	ACVR	

3. Please list **all Diplomates of the American College or equivalent European colleges of Dermatology, Surgery, Ophthalmology, Anesthesiology, ECC, clinical nutrition, clinical pharmacology, and/or theriogenology** associated with residency training. . If off-site, please explain the situation and the arrangements provided for contact with the resident.

Name of Diplomate(s)	Specialty	Comments
Dr. Jennifer Davis - ACVP	Clinical Pharmacology	
Dr. Jeff Wilcke - ACVP	Clinical Pharmacology	
Dr. David Moore - ACLAM	Laboratory Animal	
Dr. Ian Herring - ACVO	Ophthalmology	

Dr. Megan Shepherd - ACVN Dr. Terry Swecker – ACVN Dr. Sabrina Barry - ACVS Dr. Otto Lanz – ACVS Dr. Sherrie Clark - ACT Dr. Julie Cecere - ACT Dr. Natalia Guerrero – ACVA Dr. Noah Pavlisko - ACVA Dr. Jeffrey Wilson - ACVA Dr. Heng Tham - ACVD	Nutrition Nutrition Surgery Surgery Theriogenology Theriogenology Anesthesiology Anesthesiology Aneshthesthesiology Dermatology	
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4. Please indicate the availability of the following facilities or equipment. Indicate if these are available on-site at the primary training site, or at a different location. (In the Location column, indicate on-site for primary location or the name of the facility where the equipment is located if off-site.) For facilities that are not on-site, please describe the situation and availability in the space at the end of this section. See CM 5.D for details.

	Available?		Location of equipment? (On-site or list site name)
	Yes	No	
a) Blood pressure equipment (must be on site)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
b) Cardiac catheterization capability (must be on-site)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
c) Echocardiography equipment (must be on-site)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
d) Fluoroscopy (must be on site)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
e) Pacemaker interrogation (must be on site or available off-site)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
f) Standard radiological equipment (must be on-site)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
g) Electrocardiography (must be on-site)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
hi) Brainstem Auditory Evoked Response Equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
i) Clinical Pathology capabilities: (includes CBC, serum chemistries, blood gases, urinalysis, cytology, parasitology, microbiology, endocrinology, anatomic and histopathology)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
j) Colloid oncotic pressure measurement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
k) Computed Tomography	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
l) Electroencephalography	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
m) Electromyography	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
n) Endoscopy equipment			
GI equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Bronchoscopy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Cystoscopy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Rhinoscopy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Laparoscopy	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
o) Hemodialysis capability	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Private Practice - MD
p) Intensive Care Facility – 24 hours	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
q) Magnetic Resonance Imaging	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
r) Nuclear Medicine [access is desirable]	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
s) Radiation Therapy Facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Available NCSU, UT and Springfield VA
t) Serum osmolality measurement	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
u) Total parenteral nutrition capability	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
v) Ultra sonographic equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
w) Urethral pressure profile & cystometrography	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

- x) Computerized Medical Records w/Searching Capabilities
- y Medical Library w/Literature Searching Capabilities
- z) Veterinary Library w/Literature Searching Capabilities

<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	

If any of the above equipment or facilities are available off-site, please explain how the resident can access them for case management, research, or study.

Equipment or facilities required for practise of cardiology are all on-site.

5. Clinical caseload information (this information should reflect the caseload of the prior 12 months at the primary site)

Total Cardiology caseload per year:	600
Number of echocardiographic examinations per year:	
6. Number of cardiac catheterizations per year:	750 echos / 20 cath

Didactic Learning Opportunities and Research Requirements: In recognition of the importance of scientific discovery as a critical mission of the ACVIM, all Residency Training Programs shall include an assessment period or instruction and/or participation in creative scholarship which will foster an appreciation of, competency in, and contribution to the knowledge base of their respective specialty and which will support their development as clinician scientists. This requirement is fulfilled through satisfactory completion of A, B and one of C [See CM 5.E and 5.F]:

- A. Journal Club: Critical review of literature, minimum of eighty (80) hours during the program. Describe how this requirement is met or exceeded.

Cardiology residents participate in a small animal internal medicine journal club. The club meets weekly for 35 minutes. On a rotating basis, participants present papers that have recently been published in the refereed literature. Recent is defined as publication in the past two years. The presenter and attendees critically analyze study design, data analysis, and presentation of results. Participation in this journal club comprises approximately 85 hours during the course of the three-year program. There is, in addition to the journal club, a seminar/discussion series that is presented by faculty in small animal internal medicine, cardiology and neurology. Sixty-minute seminars are presented weekly. For approximately 25% of these seminars, readings from the refereed literature are assigned and then critically analyzed during the meeting of the seminar group.

- B. Cardiology-focused Educational Experiences: Minimum of one hundred fifty (150) hours during the program. Describe how this requirement is met or exceeded. [See CM 5.E.2]

Supervising Diplomates of the Specialty of Cardiology participate with trainees in all of the experiences listed below:

Cardiology Journal Club: Residents or graduate students present recently published peer-reviewed papers in cardiovascular science. The presenter and attendees critically analyze study design, data analysis, and presentation of results. This journal club meets on a weekly basis.

Clinical Case Conference (ECG/Echo/Hemodynamic Rounds): Each conference consists of hour-long meetings that will provide a forum for detailed consideration of clinical cases. Case material will be selected in order to illustrate specific diagnostic or pathophysiologic principles. These sessions will be distinct from routine case rounds intended to optimize case management and are scheduled on a weekly basis, but "Topic Rounds" (see below) substitute for this experience on an occasional basis as determined by the interests of the resident and faculty.

Topics in Cardiovascular Medicine (Topic Rounds/ "Book Club") consist of one-hour discussions of cardiovascular anatomy, physiology, pharmacology, pathophysiology, therapeutic management and related topics. Readings, which may consist of journal articles or textbook chapters, will be assigned in advance of meetings. The order of presentation as well as the specific topics of discussion is subject to change depending on resident interest, aptitude and questions that may arise during meetings.

The incomplete bibliography below will be supplemented by articles from the refereed literature and may be modified based on resident or advisor interest or perception of knowledge deficits on the part of the resident:

Pediatric Cardiology, 3rd ed. Anderson RH, Baker, E.J., Macartney, F.J., Rigby, M.L., Shinebourne, E.A., Tynan,

M., ed. Edinburgh: Churchill Livingstone/Elsevier; 2010.

Adams' Heart Disease in Infants, Children and Adolescents, 5th ed. Emmanouilides GC, Riemenschneider, T.A., Allen, H.D., Gutgesell, H.P., ed. Moss and Blatimore: Williams and Wilkins; 1995:70-105.

Feigenbaum's Echocardiography 6th ed. Feigenbaum H, Armstrong WF, Ryan T. 2005 Lippincott/Williams& Wilkins.

Braunwald's Heart Disease: A Textbook of Cardiovascular Medicine, Libby, Bonow, Zipes, Mann 9th ed. 2012 Saunders/ Elsevier.

Heart Physiology: From Cell to Circulation 4th ed. Opie LH. 2003 Lippincott/Williams& Wilkins.

Drugs for the Heart. 8th ed. Opie LH and Gersh BJ. 2013 Saunders/Elsevier.

Principles and Practice of Echocardiography, 2nd ed. Weyman AE, ed. Philadelphia: Lea and Febiger; 1994:282-301.

Cardiac Electrophysiology: From Cell to Bedside 4th ed. Zipes DP and Jalife J. 2004 Saunders/Elsevier.

- C. Successful completion of any one of the options listed below. Describe how this will be fulfilled or exceeded in the individual trainee's specific application.
1. Successful completion of at least two (2) of the following three (3) short courses/workshops offered by ACVIM either on-line or at the Forum:
 - A. Critical evaluation of veterinary medical/biomedical literature
 - B. Grant Writing
 - C. Study, design and participation in clinical trials
 2. Documented submission of a grant proposal (by advisor letter)
 3. Acceptance and presentation at a scientific meeting of an abstract (oral or poster) of original work
 4. Documented completion (by advisor letter) of a prospective or retrospective research program pertinent to the candidate's specialty
 5. Documented completion (by advisor letter) of graduate course work in biostatistics, research methods, and/or research ethics.

The resident enrolls in the VMCVM Biomedical and Veterinary Sciences Graduate (BMVS) program; completion of a research project and course work intended to lead to the Master of Science (MS) degree is mandatory. Through activities that fulfill the requirements of the graduate program, the candidate will complete task B.4*. The resident is encouraged to present the findings of their research at the ACVIM forum.

*Our current resident, Giulio Menciotti, completed a PhD [thesis title: Advanced Echocardiographic Imaging in Dogs with Myxomatous Valvular Disease] with our group, immediately prior to beginning the training program. He will complete an MS degree during the residency, but some course requirements that typically are part of the VMCVM-BMVS program will be waived.

Note: Letters of documentation by advisors will need to accompany the final submission of the Resident Logs to the Residency Training Committee in order to qualify for a resident certificate.

Please note, any Program Director or Candidate that significantly changes or alters this Residency Training Program before completion must notify ACVIM, in writing, before the changes are made to ensure that the proposed changes are approved.

Significant changes could include, but are not limited to:

- transferring from one program to another
- alterations in program duration
- switching to a 'dual board' program
- enrolling in an institutional graduate program
- change of Program Director or Resident Advisor

As Program Director, I verify that I have read the Certification Manual and that the above information is an accurate reflection of this Residency Training Program.