Thursday, June 29, 2023

ACVR - RO New Residency Program Application

Please review the Radiation Oncology (RO) Residency Program Essentials Training Standards and Requirements document prior to completing this form.

The following documents will be needed to complete the application:

- CVs (current within 1 year and a maximum of 2 pages each) for radiation oncology, diagnostic imaging, and medical oncology Diplomates involved in the training program
    - As a reminder, CVs will be publicly available on ACVR's website. We encourage you to **NOT** include personal information on the CVs that are uploaded with your application.
- Syllabi for coursework in medical physics, cancer biology, and radiation biology (including internal and external courses)
- Letters of agreement from cooperating institutions
- Letter of agreement from medical physics support for clinical training
- Resident calendar that includes the following:
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    - 24 months of RO-specific activities (primary case responsibility, treatment planning, 1 week/year of radiation therapist activities)
    - 8 weeks of medical oncology
    - 4 weeks of diagnostic imaging
    - 40 hours of medical physics
    - 40 hours of clinical pathology
    - 80 hours of anesthesia in minimum 1-week blocks
    - 2 weeks of neurology
    - 2-week minimum off-clinic time per year (study, research, etc) not including vacation
    - Vacation time as mandated by state/institution
    - Required outrotations at cooperating institutions
- Resident evaluation forms

Submission Date	Thursday, March 7, 2024
Your Name	Dah-Renn Fu
Your Address	601 Vernon L. Tharp Street Columbus, Ohio, 43210
Your Email Address	fu.977@osu.edu

Radiation Oncologists in support of the program (Must be Diplomate(s) of the ACVR):

First Name	Last Name	Title/Credentials	Email	Phone	Number of weeks per year Diplomate is available to supervise* the resident
Dah-Renn	Fu	BVM, MVM, PhD, MS, DACVR (RO)	fu.977@osu.edu	614-292-3551	37
Eric	Green	DVM, DACVR (Radiology & Radiation Oncology)	green.689@osu.edu	614-292-3551	15

*Resident supervision is defined as being available on-site 40 hours/week (defined as a 4- or 5-day work week to equal a minimum of 40 hours) to support the resident in radiation oncology-related activities including patient consultation/management, review of treatment plans, position verification and participation in daily case-based rounds.

Which of the Radiation Oncology Diplomates listed above will serve as the Residency Director? This individual will be the primary contact for the residency program and will be responsible for completing all necessary forms/reviews and notifying the RO RSEC of any changes to the program. The Residency Director must be a Diplomate of the ACVR and must be located at the primary training institution.

Dah-Renn Fu

Please confirm that during the minimum 24 months of RO-specific activities, a Supervising Diplomate will be present on site to supervise the resident as defined above for 40 hours/week (4-5 days).

Yes

A standard residency program is one that meets all of the residency program requirements set forth in the ACVR-RO Residency Essentials Training Standards document. An alternative or amended program is designed for one specific individual/resident and satisfactorily meets all of the residency program requirements, but is completed in an extended timeline (more than 3 years but fewer than 5 years).

This application is made for (check one):	Standard Program
What is the total length of the training program?	36 months
Number of months dedicated solely to radiation oncology-specific activities as defined in the ACVR-RO Residency Essentials Training Standards document (RO-specific activities include primary case responsibility, treatment planning, 1 week/yr of therapist activities):	26 months
Primary Site:	The Ohio State University
Hospital/University:	The Ohio State University Veterinary Medical Center
Department:	Veterinary Clinical Sciences
Address	601 Vernon L. Tharp Street Columbus, Ohio, 43210

Advanced Degree and Research/Publication Requirement

Masters	No
PhD	No
Research Project	Yes
Publication	Optional

Documentation of residency completion is required to obtain Diplomate status. Is receipt of residency certificate dependent on completion of advanced degree/research/publication?	No

It is required that a residency in veterinary radiation oncology provide the trainee with experience in formulation of radiation treatment plans, dose calculation, and treatment administration for veterinary patients with cancer. This includes generation of both manual and computer-based treatment plans for megavoltage external beam irradiation. External beam planning experience must include both forward and inverse planning, even if only one of those types is utilized for treatment at the primary facility. Does the program fulfill these requirements?

Yes

Comments:

We perform manual point dose calculations, 3-D Conformal planning, IMRT, and VMAT planning via Varian Eclipse TPS. We utilize 6MV photon and 6, 9, 12, and 15 MeV electron treatments. We use MapCheck for QA/plan validation. Every treatment plan is reviewed and evaluated with a DACVR-RO.

It is required that a residency in veterinary radiation oncology provide the trainee with experience in primary case responsibility, including new referrals, ongoing radiation patients, and follow-up visits. This includes receiving patients, clinical rounds, client/referring DVM communications, and medical records keeping. Does the program fulfill these requirements as described on page 12 of the RO Essentials document?

Yes

Comments:

Radiation Oncology is a primary care service within the Integrated Oncology service. The radiation oncology resident assumes primary case responsibility for all patients receiving radiation therapy, radiation therapy patient recheck appointments and those new appointments where radiation therapy will likely by the choice of treatment.

It is required that a residency in veterinary radiation oncology provide the trainee with a minimum of 1 week per year of radiation therapist activities to include daily linear accelerator quality assurance and warm up, patient positioning for treatment planning CT and therapy, radiation delivery (as allowed by the state/province), and acquisition of position verification imaging. Does the program fulfill these requirements?

Yes

Comments:

The resident will be training in machine function, warm-ups, daily QA, and patient positioning in the first 2 weeks of the program. The resident is responsible for assisting the technicians in running daily warm-ups and ongoing treatments as time allows, plus all new setups throughout the residency. A minimum of one week per year is required of additional
therapist activity technical contact time.

How will the resident be trained in radiation biology? Please provide a description of formal and informal training experiences, or indicate time allotted for self-study.

The resident will be trained in Radiation Biology by the program director and the additional Radiation Oncology member through the review of Hall's Radiobiology for the Radiologist and selected chapters in Tannock and Hill's Basics Science of Oncology. The training will be in the form of a weekly 1 hour seminar and will focus on addressing the training objectives defined by ACVR.

Please provide instructors' names and credentials for radiation biology formal and informal training:

Dah-Renn Fu, BVM, MVM, PhD, MS, DAVCR (RO)
Eric Green, DVM, DACVR (DI & RO)

How will the resident be trained in cancer biology? Please provide a description of formal and informal training experiences, or indicate time allotted for self-study.

The resident will be trained in Cancer Biology by the program director, the additional Radiation Oncology member and Medical Oncologists through the review of Tannock and Hill's Basics Science of Oncology and Weinberg's The Biology of Cancer. The training will be in the form of a weekly 1 hour seminar and will focus on addressing the training objectives defined by ACVR.

Please provide instructors' names and credentials for cancer biology formal and informal training:

Dah-Renn Fu, BVM, MVM, PhD, MS, DAVCR (RO)
Eric Green, DVM, DACVR (DI & RO)

How will the resident be trained in medical physics? Please provide a description of formal and informal didactic (non-clinical) experiences, or indicate time allotted for self-study.

The resident will be trained in Radiation Oncology Physics by the program director and the additional Radiation Oncology member through the review of Khan's The Physics of Radiation Therapy. The training will be in the form of a weekly 1 hour seminar and will focus on addressing the training objectives defined by ACVR.

Please provide instructors' names and credentials for didactic (non-clinical) medical physics formal and informal training:

Dah-Renn Fu, BVM, MVM, PhD, MS, DAVCR (RO)
Eric Green, DVM, DACVR (DI & RO)
Dominic Diconstanzo, MS, DABR

Medical physics training requires 1 week or 40 hours of clinical contact with a qualified medical physicist. Please provide a description of the training experience.

Physics support provides in monthly and annual QA. The resident is expected to participate in monthly and annual QA tests with the physicist when they come on site. Medical physics support is provided by a member of the Medical Physics team at the OSU James Cancer Hospital. The medical physicist is responsible for all machine QA, including IMRT plan review and QA. Medical physicist provides critical feedback and advice on all IMRT plans and is experienced in advanced treatment planning design. He will provide the resident informal instruction in the AAPM QA requirements and will serve as a critical resource for Eclipse training.

Medical Physicist(s) in support of clinical training in the residency program

First Name	Last Name	Title/Credentials	Physicist on-site? Y/N
Dominic	Diconstanzo	MS, DABR	Yes
Michael	Degnan	MS, DABR	Yes

A minimum of 1 hour of medical literature review with an ACVR-RO Diplomate is required monthly. Please describe this experience, and any additional formal or informal conferences available to the resident (including journal clubs, seminars, book reviews, etc.) that are not already listed above:

The resident will participate with board-certified medical oncologists and/or radiation oncologists in weekly oncology journal club during the academic year on Wednesday afternoon from 2-3 pm. In addition, the resident will participate in monthly radiation oncology journal club focusing in veterinary radiation therapy literature review with an ACVR-RO diplomate on Friday afternoon. Residents are continuously encouraged to perform a
literature search for papers relevant to specific cases.

The resident is required to present at least 2 lectures or scientific presentations during the course of the residency. Please describe how the program will fulfill this requirement:

The resident will be required to provide a resident seminar in OSU, and a scientific presentation in ACVR annual meeting. The resident will be also expected to provide a radiation therapy rounds for 4th-year integrated oncology rotation students once every other week during the residency.

The program must include an external beam radiation therapy machine in the megavoltage range and 3D computerized radiation treatment-planning capabilities to create treatment plans used for treatment delivery. Residents must have on-site access to treatment planning systems capable of forward and inverse planning even if both types of planning techniques are not deliverable at that institution.

Please list the manufacturer and model of the on-site external beam radiation therapy delivery system:

Varian Edge with 6MV photon and 6, 9, 12, and 15 MeV electrons capability.

Please list the manufacturer and model of the on-site radiation therapy treatment planning system(s). Please indicate whether they are capable of forward or inverse planning, or both, and whether or not they are used clinically to deliver treatments:

Varian Eclipse 3-dimensional treatment planning software

The clinical training requirements in the following six questions, described on pages 15 and 16 of the RO Essentials document can be fulfilled at a cooperating institution if the primary institution lacks resources to accomplish them. Training at cooperating institutions must be supervised by a Supervising or Supporting ACVR-RO Diplomate and a letter of agreement from the cooperating institution is required. The training requirements can be combined into a single minimum 2-week learning experience at the cooperating institution.

The residency program requires hands-on clinical experience to develop expertise and self-sufficiency in manual setups and manual treatment planning with photons. How does the program fulfill this requirement?

Manual point dose calculations with photons are used commonly (on average 1-2 cases/month) for simple sites not requiring computer treatment planning. All clinical setups, portal films, and treatments are performed with a board-certified radiation oncologist in years 1 and 2, with all dose calculations checked by the radiation oncologist. In year 3, the resident is expected to perform these treatments independently, but with port films checked by radiation oncologist before first irradiation.

The residency program requires hands-on clinical experience to develop expertise and self-sufficiency in manual setups and manual treatment planning with electrons. How does the program fulfill this requirement?

Electrons are used with manual calculations for superficial lymph nodes or skin lesions (scars). As with manual calculations of photon, all clinical setups and treatments are performed with a board-certified radiation oncologist in years 1 and 2, with all dose calculations checked by the radiation oncologist. In year 3, the resident is expected to perform these treatments independently, but with clinical setups are checked by radiation oncologist before first irradiation.

The residency program requires hands-on clinical experience with forward planning for 3D conformal radiotherapy (non-IMRT). How does the program fulfill this requirement?

We use Eclipse treatment planning software system. Forward planning for 3D conformal radiotherapy is commonly used at our facility. The resident will be encouraged to create a 3DCRT plan to compare with each IMRT plan. The resident will learn the difference of dose distribution between the forward and inverse planning techniques, and select the most appropriate radiation delivery plan.

The residency program requires hands-on clinical experience with inverse planning for IMRT. How does the program fulfill this requirement?

Inverse planning for IMRT radiotherapy is commonly used at our facility and the resident will have ample experience in IMRT treatment planning through the day to day operations. The resident will be encouraged to create several plans with different constraints to compare, and select the most appropriate plan.

The residency program requires hands-on clinical experience in on-board imaging verification with MV or KV CT. How does the program fulfill this requirement?

The Linear Accelerator is equipped with kV OBI capable of cone-beam CT for verifying patients' setup. The resident will be trained for checking the CBCT with a board-certified radiation oncologist.

The residency program requires hands-on clinical experience in on-board imaging verification with kV digital radiographs. How does the program fulfill this requirement?

The Linear Accelerator is equipped with kV OBI capable of digital radiography for verifying patients' setup. The resident will be trained for checking the kV digital radiography with a board-certified radiation oncologist.

The residency program requires hands-on clinical experience in on-board imaging verification with MV portal imaging. How does the program fulfill this requirement?

The Linear Accelerator is equipped with portal vision (MV OBI) for verifying patients' setup. The resident will be trained for checking the MV portal film with a board-certified radiation oncologist.

Radiologist(s) in support of the residency program [Must be Diplomate(s) of the ACVR or ECVDI]

First Name	Last Name	Title/Credentials	Diplomate on-site? Y/N
Eric	Hostnik	DACVR (DI & EDI)	Yes
Rebecca	Urion	DACVR (DI & EDI)	Yes
Amy	Habing	DVM, DACVR	Yes
Kate	Sippel	DVM, DACVR	Yes

The residency program requires at least 26 weeks/year of on-site diagnostic imaging support from a ACVR or ECVDI Diplomate and availability for remote support for at least 45 weeks/year. How will the institution fulfill this requirement?

There is always at least one board-certified radiologist on-site and available to resident support 52 weeks

per year.

How will the resident be trained in diagnostic imaging? Please provide a description of formal and informal training experiences as well as a description of the resident's role while rotating on a diagnostic imaging service:

The radiation oncology resident will spend 4 weeks rotating on the diagnostic imaging service. During this time, the resident will function as a radiology resident and be responsible for dictating radiological studies under the supervision of a board-certified radiologist. Special emphasis will be placed on oncologic imaging and interpretation of ultrasound studies, radiographs, CT and MRI. When not assigned to radiology, the resident will informally interpret and review all imaging procedures performed on prospective radiation oncology patients under the supervision of the program director or boarded radiologist.

The program must have on-site access to modern radiographic equipment, including digital or computed radiography, ultrasound, and CT. Does the institution fulfill this requirement?

The Ohio State University Veterinary Medical Center has on-site Digital radiography (2 small animal radiology machines, fluoroscopy, and 2 dedicated large animal radiology suites), Diagnostic ultrasound machines (3 in-house), Multidetector (128-slice) CT scanner, and MRI (3T Philips Ingenia for small and large animal imaging).

Medical Oncologist(s) in support of the residency program [Must be Diplomate(s) of the ACVIM, Specialty of Oncology]

First Name	Last Name	Title/Credentials	Diplomate on-site? Y/N
Brian	Husbands	DACVIM (Oncology)	Yes
William	Kisseberth	DACVIM (Oncology)	Yes
Shay	Bracha	DACVIM (Oncology)	Yes
Rhonda	Burge	DACVIM (Oncology)	Yes

The residency program requires at least 26 weeks/year of on-site medical oncology support from an ACVIM (Oncology) Diplomate. How will the institution fulfill this requirement?

There is always at least one (usually two) board-certified veterinary medical oncologist on-site and available to resident support 52 weeks per year.

How will the resident receive training in medical oncology? Please provide a description of formal and informal training experiences as well as a description of the resident's role while rotating on a medical oncology service:

The resident spends 8 weeks on the medical oncology service under the direct supervision of a board-certified oncologist and will perform the duties of an oncology resident: primary patient care, owner and referring veterinarian consultation, chemotherapy administration, and patient management and treatment decisions. In OSU Integrated Oncology service (medical, radiation, and surgical oncology), the daily morning board rounds to review the cases for the day, as well as afternoon more detailed discussion of cases includes everyone that is on the clinical service (house officers, fellow, and faculty).

Surgeon(s) in support of the residency program [Must be Diplomate(s) of the ACVS]

First Name	Last Name	Title/Credentials	Diplomate on-site? Y/N
Laura	Selmic	DECVS, DACVS-SA	Yes
Janis	Lapsley	DACVS-SA	Yes

First Name	Last Name	Title/Credentials	Diplomate on-site? Y/N
Hunter	Piegols	DACVS-SA	Yes
Mary	McLoughlin	DACVS-SA	Yes
Brittney	Carson	DACVS-SA	Yes
Ally	Sterman	DACVS-SA	Yes
Jonathan	Dyce	DACVS-SA	Yes
Nina	Kieves	DACVS-SA, DACVSMR, CCRT	Yes
Audrey	Wanstrath	DACVS-SA	Yes

The residency program requires at least 26 weeks/year of on-site surgical support from an ACVS Diplomate. How will the institution fulfill this requirement?

The board-certified surgeons are readily available for consultation and surgical procedures.

Pathologist(s) in support of the residency program [Must be Diplomate(s) of the ACVP (Anatomic or Clinical Pathology) or ECVP (Clinical Pathology)]

First Name	Last Name	Title/Credentials	Diplomate on-site? Y/N
Ryan	Jennings	DACVP (Anatomic)	Yes
Christopher	Premanandan	DACVP (Anatomic)	Yes
Megan	Schreeg	DACVP (Anatomic)	Yes
Samantha	Evans	DACVP (Clinical)	Yes
Maxey	Wellman	DACVP (Clinical)	Yes

The residency program requires at least 45 weeks/year of anatomic and clinical pathology support by ACVP Diplomates. If not on-site, a letter of support must be submitted. How will the institution fulfill this requirement?

There is at least 1 clinical pathologist and 1 anatomic pathologist on-site and on clinical duty 52 weeks per year. Both have active residency training programs as well and are readily available for consultation and diagnostic tests/necropsy.

At least 1 week or 40 hours in a clinical rotation or rounds with a clinical pathologist are required during the residency program. If off-site, a letter of agreement must be submitted. How will the institution fulfill this requirement?

The resident will participate in clinical pathology rounds which is held one- hour once a week by our clinical pathology service. The resident may also spend 1 week with the clinical pathology service during the residency program.

Anesthesia Specialists in support of the residency program [Must be Diplomate(s) of the ACVAA or ECVAA, or Veterinary Technician Specialists (VTS)]

First Name	Last Name	Title/Credentials	Diplomate on-site? Y/N
Philips	Lerche	DACVAA	Yes

First Name	Last Name	Title/Credentials	Diplomate on-site? Y/N
Carolina	Ricco Pereira	DACVAA	Yes
Turi	Aarnes	DACVAA	Yes

The residency program requires two 1-week (40-hour per week) clinical rotations (80 hours in total) in anesthesia with an Anesthesia Specialist, as defined above. Please provide a description of this training experience and the resident's role on this rotation.

The resident will spend two weeks on the anesthesia service performing the duties of an anesthesia resident under the guidance of a board-certified anesthesiologist. The clinical rotation training includes the evaluation, induction/maintenance/recovery from anesthesia for patients. The resident will focus attention on patients with neoplasia, specifically those involving the head, nasal cavity, neck, brain and thoracic cavity. The resident will also be involved in the daily case rounds and discussions.

Neurologist(s) in support of the residency program [Must be Diplomate(s) of the ACVIM, Specialty of Neurology or ECVN]

First Name	Last Name	Title/Credentials	Diplomate on-site? Y/N
Ronaldo	da Costa	DACVIM (Neurology)	Yes
Patrick	Roynard	DACVIM (Neurology)	Yes

The residency program requires a 2-week clinical rotation supervised by a Diplomate of the ACVIM (Neurology) or ECVN. Please provide a description of the training experience and resident's role on this rotation.

The resident will spend two weeks on the neurology service performing the duties of a neurology resident under the guidance of a board-certified neurologist. While on the neurology rotation the resident will be the primary clinician for neurology cases, especially neuro-oncology cases, and be responsible for receiving, evaluating, staging, managing and treating neurology cases. The resident will also be involved in the daily case rounds and discussions.

Please list all additional board certified specialists in direct support of the residency program. If offsite, please explain relationship:

Name	Certifying College/Board	Subspecialty (if applicable)	Explain Relationship if offsite
Catherine Langston	ACVIM	Small Animal Internal Medicine	
Julie Byron	ACVIM	Small Animal Internal Medicine	
Valerie Parker	ACVIM	Small Animal Internal Medicine & Nutrition	
Jessica Quimby	ACVIM	Small Animal Internal Medicine	

Name	Certifying College/Board	Subspecialty (if applicable)	Explain Relationship if offsite
Adam Rudinsky	ACVIM	Small Animal Internal Medicine	
Jenessa Winston	ACVIM	Small Animal Internal Medicine	
Karsten Schober	ACVIM	Cardiology	
Jaylyn Rhinehart	ACVIM	Cardiology	
Logan Funk	ACVIM	Cardiology	
Anne Gemensky Metzler	ACVO		
Georgina Newbold	ACVO		
Lynette Cole	ACVD		
Sandra Diaz Vergara	ACVD		
Gwendolen Lorch	ACVD		
Edward Cooper	ACVECC		
Page Yaxley	ACVECC		
Anda Young	ACVECC		
Jiwoong Her	ACVECC		
Margaret Mudge	ACVS, ACVECC	Large Animal	
Hilary Rice	ACVS	Large Animal	

Evaluation of resident performance and progress must be documented every 6 months through appropriate techniques, including faculty appraisal, or oral or written tests, or a combination of these. Institutional resident evaluation forms should be submitted as part of the residency application. How will the program fulfill this requirement?

All residents at OSU are evaluated initially informally at three months and then formally at six months and every six months thereafter. The evaluation form is a standard on-line form required by OSU. All areas on the form are evaluated in the context of each specialty and a comments section is available to address specialty-specific skills.

If applicable, please list the residents who have completed the training program within the last five years, including the year that each individual's training program ended. If possible, provide the status of each individual with respect to the board certification process.

Dr. Jillian Walz - completed 2019 - board certified
Dr. Christopher Bloom - completed 2023

Upload the following information

- CVs (current within 1 year and maximum of 2 pages) for each radiation oncologist, radiologist and medical oncologist involved in the training program
- Resident calendar that includes the following:
  - 24 months of RO-specific activities (primary case responsibility, treatment planning, 1 week/year of radiation therapist activities)
  - 8 weeks of medical oncology
  - 4 weeks of diagnostic imaging
  - 40 hours of medical physics
  - 40 hours of clinical pathology
  - 80 hours of anesthesia in minimum 1-week blocks
  - 2 weeks of neurology
  - 2-week minimum off-clinic time per year (study, research, etc) not including vacation
  - Vacation time as mandated by state/institution
  - Required outrotations at cooperating institution(s)
- Letters of agreement from cooperating institutions
- Letter of agreement from medical physics support for clinical training
- Residency evaluation forms
- Syllabi for any formal or informal coursework

CVs

Bracha NIH-Bio 2023.docx

Burge_CV_2023.docx

Hostnik - biosketch.docx

Kisseberth NIH-Bio 2023.docx

Urion_CV - 2023.pdf

Habing A NIH-Bio 2023.docx

Fu NIH-Bio 2023.docx

Green NIH-Bio 2023.docx

Husbands NIH-Bio 2023.docx

Resident Calendar

Radiation Oncology Reside… .docx

Letter of Agreement from Medical Physics Support for Clinical Training

VetRadoncResidencyLOS-OSU.pdf

Residency Evaluation Forms

Resident Evaluation Form.docx

Syllabi for Coursework

Radibiology for the Radiolo… .docx

Radiation Therapy Physics.docx