

ACVR RO Residency Training Program Re-Approval Application

Submission Date 2018-01-29 15:30:28

Date of Application 01-19-2018

Date of Initial Program Approval 01-30-1999

Date of Last Re-Approval 01-30-2015

Your Name Alain Theon

Your Email Address aptheon@ucdavis.edu

Your Address University of California-Davis, Veterinary Teaching Hospital
1 Garrod Drive
Davis
CA
95616

Program Director(s): (Must be a Diplomate of ACVR Recognized Veterinary Specialty of Radiation Oncology)

First Name	Last Name	Title/Credentials	Email	Phone #	Number of weeks per year faculty member is available to resident on a daily basis	Fax #
Alain	Theon	DrVetMed, MS, PhD	aptheon@ucdavis.edu	530-752-3599	47	530-754-2268

Do you have additional ACVR-RO in support of the program? yes

Additional Radiation Oncologists in support of the program (Diplomate of ACVR recognized Veterinary Specialty of Radiation Oncology):

First Name	Last Name	Title/Credentials	Number of weeks per year faculty member is available to resident on a daily basis	Faculty Member on site (yes or no)?
Michael	Kent	DVM, MS	32	Yes
Katherine	Hansen	DVM	47	Yes

If applicable, upload CVs of the Program Director and any supporting Radiation Oncologists:

[Hansen biosketch 2018.pdf](#)
[theon MIV CV.pdf](#)
[Kent MIV CV.pdf](#)

Do you have a radiation oncology resident in training at this time?

Yes

Residents

First Name	Last Name	Dates of Training
Heather	Ashcraft	8/1/2017-7/31/2019

Application is made for (check one):

Standard Program

Primary Site:

William R. Pritchard Veterinary Medical Teaching Hospital

Hospital/University:

UC Davis

Department:

Veterinary Surgical and Radiological Sciences

Address:

1 Shield Avenue
Davis
CA
95616

What is the total length of the training program?

24

Number of months dedicated solely to radiation oncology training (excluding time on Medical Oncology service, Radiology/Imaging, etc.)

19 months

Advanced Degree:

	Yes	No	Optional
Masters	-	✓	-
PhD	-	✓	-

Upload calendar of resident's activities (24 or 36 month) including required rotations and vacation:

[Calendar Resident.docx](#)

**Diagnostic Radiologist(s):
(Must be Diplomate(s) of the
ACVR or ECVDI):**

First Name	Last Name	Title/Credentials	Number of weeks per year a boarded radiology diplomate is available to resident on a daily basis	Faculty Member on site (yes or no)?
Erik	Wisner	DVM, MS	14	Yes
Rachel	Pollard	DVM, PhD	12	Yes
Kathryn	Phillips	DVM	34	Yes
Allison	Zwigenberger	DVM, MS	24	Yes
Eric	Johnson	DVM	34	Yes
Mathieu	Spriet	DVM, MS	24	Yes
Derek	Cissell	DVM, PhD	24	Yes

Upload CVs of diagnostic radiologists listed:

[Zwigenberger MIV CV.pdf](#)
[Cissell CV.pdf](#)
[Johnson MIV CV.pdf](#)
[Phillips MIV CV 2018.pdf](#)
[Pollard MIV CV.pdf](#)
[Spriet MIV CV.pdf](#)
[Wisner MIV CV.pdf](#)

Medical Oncologist(s): (Must be Diplomate(s) of the ACVIM, Specialty of Oncology:

First Name	Last Name	Title/Credentials	Number of weeks per year an ACVIM-Oncology Diplomate is available to resident on a daily basis	Faculty Member on site (yes or no)?
Katherine	Skorupski	DVM	30	Yes
Robert	Rebhun	DVM, PhD	11	Yes
Jenna	Burton	DVM, MS	30	yes
Jennifer	Willcox	DVM	30	Yes

Upload CVs of medical oncologists listed:

[Willcox MIV CV 2018.pdf](#)
[JHB CV 4.20.17.pdf](#)
[Skorupski CV For Promotion-2.pdf](#)
[rr.CV.12.18.2017.pdf](#)

Surgeon(s): (Must be Diplomate(s) of the ACVS:

First Name	Last Name	Title/Credentials	Number of weeks per year an ACVS faculty member is available to resident on a daily basis	Faculty Member on site (yes or no)?
Michelle	Steffey	DVM	16	Yes
Bill	Culp	DVM	20	Yes
Philip	Mayhew	DVM	20	Yes
Ingrid	Balsa	DVM	30	Yes
Michelle	Giuffrida	DVM	20	Yes

**Pathologist(s): (Must be
Diplomate(s) of the ACVP:**

First Name	Last Name	Title/Credentials	Drop down	Number of weeks per year an ACVP faculty member is available to resident on a daily basis	Faculty Member on site (yes or no)?
Verena	Affolter	DVM, PhD	Anatomic Pathology	17	Yes
Brian	Murphy	DVM, PhD	Anatomic Pathology	17	Yes
Kevin	Woolard	DVM, PhD	Anatomic Pathology	17	Yes
Patricia	Pesavento	DVM, PhD	Anatomic Pathology	17	Yes
Peter	Moore	DVM, PhD	Anatomic Pathology	17	Yes
Chuck	Mohr	DVM, PhD	Anatomic Pathology	17	Yes
Kevin	Keel	DVM, PhD	Anatomic Pathology	17	Yes

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

Name	Certifying College/Board	Subspecialty (if applicable)	If offsite, please explain relationship
Mary Christopher, Sean Owens, Shir Gilor, William Vernau, Dori Borjesson	ASCVP	Clinical Pathology	
Lynelle Johnson, Jonathan Dear, Stan Marks, Sean Hulseboch, Jane Sykes, Jodi Westropp, Chen Gilor, Larry Cowgill,	ACVIM	Internal Medicine	
Peter Dickinson, Beverly Sturges, Karen Vernau, Marguerite Knipe	ACVIM	Neurology	
Catherine Gunter-Harrington, Joshua Stern, Lance Visser	ACVIM	Cardiology	
Steve Hollingsworth, David Maggs, Kathryn Good, Sarah Thomasy	ACVO		
Frank Verstraete, Boaz Arzi	AVDC		

Amandeep Chochan, Bruno Pypendop, Robert Brosnan, Carolyn Craig, Linda Barter	ACVA		
Karl Jandrey, Katrina Hoper, Steven Epstein, Jamie Burkitt	ACVECC		
Michelle Hawkins, Joanne Paul-Murphy, David Sanchez-Migallon Guzman	Companion Avian And Exotic Pet		

Please describe the role of the radiation oncology resident and the radiation oncology service in the daily clinical management of patients and clients:

The resident is directly integrated in the oncology service. The resident receives and manages all radiation therapy patients as primary care clinician under the direct supervision of radiation oncology faculty members. This includes management of routine of referred patients, including both secondary and tertiary referrals. Patient case load reflects animals with cancer of all sites, allowing broad exposure to both routine, as well as unusual cancer patients. The resident completes electronic medical records in a timely manner after finishing a treatment or seeing a patient. They are directed to call the rDVM after each new appointment and when there is any marked change in a patient's condition. There are daily morning rounds where progress and toxicities of current radiotherapy patients are reviewed and there are once a week radiation oncology rounds on Friday afternoon to review new patients scheduled for the following week and discuss where all current radiotherapy patients, potential cases and follow-up on previous patients.

During the first year of the program, the resident shares primary case responsibility with the faculty member on duty. The resident gain experiences with diagnosis and treatment of animals with cancer, utilizing the full range of capabilities in a large, well equipped, modern veterinary teaching hospital. Residents will develop skills in evaluating diagnostic images (radiographs; CT and MRI; ultrasound; nuclear medicine). The resident develops an understanding of radiation physics and radiobiology concepts underlying radiation therapy and medical management of companion animals with cancer. The resident is trained in both hand planning and computerized treatment planning for photon and electron therapy. Resident is trained in forward and inverse treatment planning. Resident is involved in computerized planning (Varian Eclipse treatment planning system) and delivering conventional 3D-conformal RT, IG-IMRT, whole-body RT (TBI, TSET) and stereotactic RT (SRS, SBRT) with a Varian TrueBeam Linear accelerator with on-board-imaging. In addition, the resident is trained in surface therapy (Strontium-90 applicator) and systemic therapy (Iodine-131)

During their second year, training builds on the first year with increasing responsibility for patient managements. Some of the rechecks if they are straightforward are seen by the resident alone and reviewed with faculty member. Resident plays direct role in developing computerized radiation treatment plans and patient management. Faculty member reviews medical record, patient treatment plan before implementation and supervise current patient status including side effects and medical management.

How will the resident receive training in Medical Oncology? What is the time allotted to this training? Please provide description of formal and informal training experiences as well as description of the resident's role while rotating on a medical oncology service:

The resident spends 4 weeks in the first year and 4 weeks in the second year of training in the Medical Oncology service dealing strictly medical oncology cases and training in safe handling of chemotherapy.

The resident receives new and re-check medical oncology patients under the guidance and supervision of Medical Oncology faculty. During the rotation, the resident functions as a medical oncology resident and has no commitment in radiation Oncology. For safety reasons, the resident must have all chemotherapy dose calculations checked by a faculty member before submission to the pharmacy; this is in addition to the triple-check system used at UCD.

How is resident be trained in diagnostic imaging? What time is allotted for this training? Please provide description of formal and informal training experiences. Please specify if the resident is required to generate imaging reports while on diagnostic imaging rotation:

A two week period per year of training (4 weeks in total) is devoted exclusively to training in diagnostic radiology. During the rotation, the resident interprets and generates written reports of imaging studies performed on patients seen by the radiology service. This period allows the resident involvement in a multitude of imaging modalities including but primarily in CT, MR and radiography. During this period the resident attend daily rounds and participate in the discussion and review of imaging studies, and attend and participate in the weekly case conference provided by the radiology faculty.

In addition, during the residency program, pretreatment images of all potential patients are reviewed and discussed with a radiologist. Follow-up images made of patients having completed radiation therapy are also reviewed with a radiologist

Will the resident be provided with training in anesthesia? If yes, please include a description of the training:

Although our service manages directly anesthesia of our patients, our residency program does not include a rotation in the Anesthesia service. Residents are involved in daily preanesthetic patient assessment and preparation. Residents are involved with our anesthesia technician in developing an anesthesia protocol for each patient, the protocol is then reviewed by a faculty in Anesthesia service prior to implementation. Resident are involved occasionally in induction with drugs that allow endotracheal intubation and post anesthesia recovery. They are involved most of the time in monitoring of cardiovascular, respiratory, and central nervous system either in the treatment room before treatment or through of our remote patient monitoring system during treatment. As part of our hospital policy, residents attend a yearly refresher course provided by ECC service on use of anesthesia equipment, emergency drugs and procedures, as well as an action plan for their use.

How is resident trained in radiation biology? Please provide description of formal and informal training experiences:

Informal radiation biology training is provided while developing treatment plan scheduling according to treatment intent (curative vs palliative), tumor type and location. Discussion of tumor radiosensitivity, radioresponse as well as local control is discussed for each case seen by the Radiation Oncology service.

Radiation biology of radiation side-effects including development and management of early and chronic effects is discussed for each patient.

The resident attends a formal 2-credit (VSR 465) radiation biology course (weekly 2-hour lecture, P/F) offered by the School of Veterinary medicine and taught by Dr Théon (syllabus attached). In addition, the resident attend a series of weekly lectures offered to Radiation Oncology residents at the UCD Comprehensive Cancer Center in Sacramento, CA (syllabus attached).

Once-weekly Radiation Oncology rounds are held that include either review of book chapters in radiobiology, radiation oncology, cancer biology and RO physic texts and journal articles if there are no clinical cases to review

In addition, the resident attends weekly courses entitled "Board Review" offered by the small animal medical and radiation oncology faculty members to cover learning objectives in preparation for board. This is not an official course offered by the School of Veterinary medicine nor a conference but a review presented either by faculty or residents followed by Q and A.

How is resident be trained in cancer biology? Please provide a description of formal and informal training experiences:

The resident attends a series of faculty-led weekly oncology seminars (VSR424R and VSR 426R categorized as Discussions in the School curriculum). The seminar list of topics is variable but entails the systematic review of tumor types and molecular oncology in preparation for boards. Dr. Théon runs the large animal section of the series. The journal club provides a review of the veterinary literature and is attended by medical and radiation oncology faculty and residents. Depending on the selected topics, other services including soft tissue surgery, pathology or dentistry are invited to participate. The resident joins medical oncology residents for resident-driven book rounds on cancer biology (The basics science of oncology, Tannock & Hill) and clinical oncology (Small Animal Oncology, Withrow and MacEwen). The resident attends weekly courses entitled "Board Review" offered by the small animal oncology faculty members as described in radiation biology training section. Residents attend "Grand Round" offered by the small animal internal medicine faculty members. Residents when an medical oncology resident present a case and our resident usually presents a case twice a year.

How is resident trained in radiation oncology physics? Please include a description of the medical physics support available at your institution and any role institutional medical physics support may provide in training of the resident:

Training in radiation physics include formal subject matter relevant to fundamental understanding of radiation physics and practice needs including imaging, treatment planning from simulation to treatment, operation of linear accelerator, treatment immobilization, localization and verification. The resident receives an initial orientation in radiation safety, including material to be studied for UC Davis health and safety institutional examination. The resident attends a formal 2-credit (VSR 464) radiation physics course (weekly 2-hour lecture, P/F) offered by the School of Veterinary medicine and taught by Dr. Théon (syllabus attached). In addition, the resident attend a series of bi-weekly lectures offered to Radiation Oncology and Radiation Physics residents by the Medical Physics Department at the UCD Comprehensive Cancer Center in Sacramento, CA (syllabus attached). The resident has weekly access to a medical physicist from Pacific Crest Medical Physics Inc., a group of certified diagnostic and therapeutic radiological physicists who provide support for our Linac, review treatment plans and provide general RO physics rounds with the resident

Please list any formal courses and their instructors included in the residency training curriculum. Please attach syllabi and instructor credentials for each listed course. NOTE: Please ensure syllabi are up-to-date within the last year:

1. Principles of Radiation Physics, Dosimetry and Treatment Planning for Veterinarians – Course director – Alain Théon, DVM, MS, PhD. Two hours a week for one semester. This is a 2 credit graduate course (VSR 464) listed in the Department of Veterinary Surgical and Radiological Sciences.
2. Radiation Oncology Physics Course – Course Coordinator – Sonja Dieterich, Ph.D., Julian Perks, Ph.D. Two hours per week for 34 weeks. Course is designed for MD radiation oncology and Radiation Physics residents at the University of California Davis, Medical Center
3. Radiobiology – Course Coordinator – Andrew Vaughan, Ph.D. Course is designed for MD radiation oncology residents
4. Radiation Biology for Veterinarians – Course director – Alain Théon, DVM, MS, PhD. Two hours a week for one semester. This is a 2 credit graduate course (VSR 465) listed in the Department of Veterinary Surgical and Radiological Sciences

Upload syllabi here:

[Radiobio Schedule 2017-18.doc](#)
[2017-18 Physics Long Course Description Lect Schedule 2017-18.v3-1.doc](#)
[2017-18 Schedule revised.Final.AV 2.doc](#)
[Physics Schedule 2017-18.docx](#)

<p>Will the resident participate in clinical rounds on a daily basis while on clinical rotations?</p>	<p>yes</p>
<p>Is a supervising Radiation Oncology Diplomate available for the majority of rounds?</p>	<p>yes</p>
<p>Are formal conferences, such as clinicopathologic conferences, journal clubs, or seminars held on a weekly basis?</p>	<p>yes</p>
<p>Please provide a description of the conferences, etc., that are provided and the typical schedule. Please specify which conferences are mandatory vs. optional:</p>	<ul style="list-style-type: none"> • Radiation Oncology rounds (weekly): current radiation oncology patients are discussed. The cases discussed include both medical and radiation oncology patients. The rounds are attended by the medical and radiation faculty and residents, as well as veterinary students currently on the rotation. • Radiation chart rounds (weekly): these rounds are attended by the radiation oncology faculty, and the radiation and medical oncology residents. Treatment plans, port films are reviewed as well as treatment set-ups and calculations. • Imaging rounds (weekly): Past cases seen at the teaching hospital are reviewed and participants read the films without prior knowledge of findings. These rounds are also attended by the medical oncology residents. • Grand rounds (weekly): These rounds are run by the internal medicine service and are open to all services at the teaching hospital. It is expected that the radiation oncology resident present one case every four months, which includes the making of a formal powerpoint presentation. • Cytology rounds (weekly): these rounds are held weekly for the medical oncology residents to review cytologic preparations of interest acquired during the week. • Pathology rounds (weekly, optional): these rounds are held by the pathology department and occur weekly. • Case Conference (weekly, optional): there are both large animal and small animal case conferences held weekly during the academic year. • Surgical Oncology Rounds (weekly): rounds run by faculty members in radiation, medical and surgical Oncology as well as pathologists to discuss pending or ongoing. • Cancer Biology Research Seminar: offered weekly by the UC Davis Comprehensive Cancer Center in Sacramento, CA (webinar series) • Journal Club: weekly (Friday) for medical and radiation oncology resident
<p>Is the resident required to give one or more formal presentations at a conference or in an educational setting on a yearly basis?</p>	<p>yes</p>

If yes, please describe these conferences or educational settings:	The resident is required to make a prospective or retrospective scientific presentation at the annual house officers day at the school of veterinary medicine at UC Davis to receive a residency certificate. The resident also do formal case presentations, which includes a power point presentation, four times a year at grand rounds. The radiation resident participate in giving 2 lectures each year to the DVM students in the first year oncology teaching block. Residents are encouraged to present an abstract at ACVR conference during their residency.
How many major veterinary medical or medical meetings is each resident able to or expected to attend during his/her training program?	Two
Please list the meetings attended:	ACVR annual meeting or ASTRO annual meeting VCS annual meeting
Does the training program require a research project?	Yes
Please indicate the number of research projects required:	The resident is expected to do a research project and present it during their 2 year residency at one of the VMTH House Officer Seminar Day
Are one or more publications required as part of the training program?	No
Do you have a megavoltage teletherapy machine available?	Yes
Is the megavoltage teletherapy machine on-site?	Yes
Please specify the manufacturer and model:	Varian TrueBeam
Do you have a multileaf collimator available?	Yes
Is the multileaf collimator on-site?	Yes
Please specify number of leaves and width of leaves:	120, 0.3-0.5cm
Is the on-board portal or CT imaging on-site?	Yes
Please specify type:	kV, MV, CBCT
Do you have a 3D - computer based treatment planning system available?	Yes

Is the 3D - computer based treatment planning system on-site?	Yes
Please specify manufacturer and model:	Varian Eclipse, BrainLab iPlanRT
Do you have a 2D or 2 1/2D computer based treatment planning system available?	No
Do you have intensity modulated radiation therapy available?	Yes
Is intensity modulated radiation therapy on-site?	Yes
Do you have stereotactic radiation therapy or radiosurgery available?	Yes
Is stereotactic radiation therapy or radiosurgery on-site?	Yes
Is strontium-90 plesiotherapy on-site?	Yes
Do you have LDR brachytherapy treatment and planning available?	No
Is LDR brachytherapy treatment and planning available on-site?	No
Do you have HDR brachytherapy treatment and planning available?	No
Is HDR brachytherapy treatment and planning available on-site?	No
Do you have diagnostic radiology/imaging services available?	Yes
Is diagnostic radiology/imaging services available on-site?	Yes

Do you have conventional radiography available?	Yes
Is conventional radiography available on-site?	Yes
Do you have fluoroscopy available?	Yes
Is fluoroscopy available on-site?	Yes
Is ultrasound available?	Yes
Is ultrasound available on-site?	Yes
Is nuclear medicine available?	Yes
Is nuclear medicine available on-site?	Yes
Do you have computed tomography available?	Yes
Do you have magnetic resonance imaging available?	Yes
Do you have magnetic resonance imaging available on-site?	Yes
Do you have positron emission tomography available?	Yes
Do you have positron emission tomography available on-site?	Yes
Do you have an intensive care facility (24 hours) available?	Yes
Do you have an intensive care facility (24 hours) available on-site?	Yes

Do you have clinical pathology capabilities (includes CBC, serum chemistries, blood gases, urinalysis, cytology, parasitology, microbiology and endocrinology) available?	Yes
Do you have clinical pathology capabilities (includes CBC, serum chemistries, blood gases, urinalysis, cytology, parasitology, microbiology and endocrinology) available on-site?	Yes
Do you have a veterinary library with literature searching capabilities available?	Yes
Do you have a veterinary library with literature searching capabilities available on-site?	Yes
Do you have a medical library with literature searching capabilities available?	Yes
Do you have a medical library with literature searching capabilities available on-site?	Yes
Do you have computerized medical records with searching capabilities available?	Yes
Do you have computerized medical records with searching capabilities available on-site?	Yes
Megavoltage Gamma/X-ray teletherapy:	140
LDR brachytherapy:	0
HDR brachytherapy:	0
Radioiodine:	60

Describe procedures for resident record recording of radiation treatment details of all patients.

The resident enters pertinent information, including patient history, diagnostic tests, tumor type, tumor location, tumor stage, dates of treatment, tumor response and acute and late reactions into the hospital electronic medical record for each patient visit. A separate record is kept in ARIA (Varian Medical Systems) by the radiation oncology service for each patient receiving therapy to record treatment plan, set-up instructions, digital portal and setup films (kV, MV and CBCT imaging), plan schedule and appointment schedule. The trainee keeps a log of patients treated through use of the patient database, number of beams, beam configuration, and use of MLC/ dynamic wedges, as well as follow up information.

What procedures are in place to facilitate collection of follow up information of patients treated? What is a standard recheck schedule for patients? In the absence of routine patient rechecks at the facility, is there a system in place to obtain follow-up?

At the completion of a course of external beam radiation therapy it is recommended that patients return for a recheck evaluation at 2 weeks, 1 month, 2, 3, 6, 9, and 12 months. At the time of all rechecks at the VMTH a written comment is made in the radiation record and photographs of the irradiated site are acquired. Data regarding all patients receiving radiation therapy is archived in the VMTH computer database. The radiation oncology resident is required to do complete follow up of their cases during the residency training program including recheck physical examinations, and follow-up phone calls to owners and/or referring veterinarians of patients that do not return to the VMTH for rechecks. Information regarding tumor response, radiation side effects, etc. is recorded in the VMTH electronic database

By what mechanisms and how often will trainees be evaluated? Please comment on radiation therapy specific evaluation as well as general clinical evaluation.

All trainees are formally evaluated by use of the VMTH standard evaluation form (Eval360 system), which is followed by a meeting with the program director. The evaluation schedule is 6 and 12 months in the their 1st year and at the end of their 2nd year

Please upload form used in evaluations.

[Resident eval form.doc](#)

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 at all possible, please provide an address, and any information you have on the status of each individual with respect to the board certification process.

Isabelle Vanhaezebrouck
CHUV Oniris
Ecole Nationale vétérinaire agroalimentaire et de l'Alimentation Nantes
Atlantique
44307 Nantes Cedex France
33-(0)782-695848
isabelle.vanhaezebrouck@oniris-nantes.fr
Finished training 2011, Passed Board Examination in 2011

Katherine S. Hansen
University of California, Davis
School of Veterinary Medicine
Davis, CA 95616
530-752-1393
kshansen@ucdavis.edu
Finished training 2013, Passed Board Examination in 2013

Isabella (Zenker) Pfeiffer
University of Tennessee
College of Veterinary Medicine
2407 River Drive
Knoxville, TN 37996
Finished training 2015, Passed Board Examination in 2015

Cassandra Wilcox
Hope Veterinary Specialists
40 Three Tun Road
Malvern, PA 19355
Finished training 2017, Passed Board Examination in 2017