



Dr. Cunha received a Ph.D. in experimental particle physics from the University of California, Santa Barbara. His thesis work was done as a member of the BaBar collaboration based at the Stanford Linear Accelerator Center in Palo Alto, California.

Department of Radiation Oncology

Professor of Radiation Oncology (<https://radonc.ucsf.edu>)

Adam M. Cunha, PhD
Assistant Professor

Physics Faculty



Dr. Descovich is an Associate Professor in Residence in the UCSF Department of Radiation Oncology. She received her Medical Physics Ph.D. from the University of Liverpool, UK where she focused on gamma ray tracking detectors to study the behavior of radioactive nuclei. Dr. Descovich is board certified by the American Board of Radiology and specializes in the physics of stereotactic radiosurgery (SRS) and stereotactic body radiation therapy (SBRT) and has been the lead physicist responsible for the COBT, the radiotherapy program since the installation of the CyberKnife VS at UCSF in 2010. Her research interests include target tracking and advanced SBRT treatment planning for robotic radiosurgery.

Martina Descovich, PhD [5]
Associate Professor
Tim Solberg, PhD [1]
Professor and Vice Chair



Chris J. Diederich, PhD ^[4]
Professor

Dr. Diederich is a Professor In Residence in the Radiation Oncology Department at UCSF. He is also a Professor in the UC Berkeley - UCSF Graduate Program in Bioengineering. He is Director of Clinical Hyperthermia Physics, with expertise in treatment planning and delivery of ultrasound and microwave hyperthermia, and has been active in hyperthermia at UCSF since 1990. Dr. Diederich's primary research activities include the design and development of ultrasound devices, support systems, and procedures for applying image-guided hyperthermia and high-temperature thermal therapy, targeted drug delivery, and ultrasonic or thermal stimulation of biological or immunological effects for enhanced therapy.



Bruce Faddegon, PhD ^[5]
Professor

Dr. Faddegon is a Professor in Residence certified in radiotherapy physics. His clinical focus is external beam radiotherapy with x-rays, electrons and protons. On the research side, having contributed in the success of the widely used BEAM code for x-ray and electron therapy simulation, Dr. Faddegon is now a key developer of the TOPAS code, finding wide use in research, development and clinical applications in particle therapy. His NIH funded research focus is currently on physical and biological simulation of particle therapy, including biologically based treatment planning and improved range accuracy. His accolades include second author on the second most cited paper in the journal Medical Physics (Med Phys 22:503, 1995) and the Farrington Daniels Award for the best paper on dosimetry in the journal Medical Physics (Med Phys 17:773, 1990).



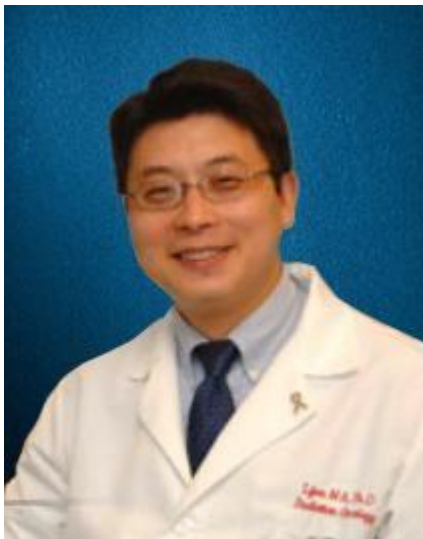
Emily Hirata, PhD [6]
Assistant Professor

Dr. Hirata is an Assistant Professor and Chief of Clinical Physics at the UCSF Department of Radiation Oncology. She received her Ph.D. in Biomedical Sciences from the University of Hawaii. She is certified by the American Board of Radiology in therapeutic radiologic physics, and has served as an accreditation surveyor for the American College of Radiology. Her clinical interests range from high dose rate brachytherapy and external beam photon radiotherapy, including specialized systems such as TomoTherapy. She is also interested in treatment planning systems, optimization algorithms, and respiration and motion management strategies.



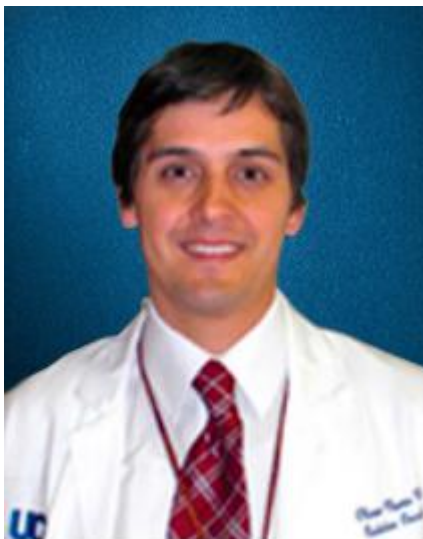
Vasant Kearney, PhD [7]
Assistant Professor

Dr. Kearney is an Assistant Professor in Residence and focuses on clinical workflow automation and optimization through the use of artificial intelligence. Dr. Kearney has extensive algorithmic knowledge in deep learning, computer vision, optimization, and full stack design.



Lijun Ma, PhD, DABMP,
FAAPM ^[8]
Professor

Dr. Ma's clinical and research focus are CNS stereotactic radiosurgery, hypofractionation modeling, international/national quality assurance and practice guideline developments and precision radiotherapy physics tools. Dr. Ma has served on international executive and editorial boards such as ISRS and Journal of Medical Physics, TCRT, JSRS/SBRT, and has won teaching awards from AARO and service awards from ABR. Dr. Ma is the principal or senior author of over 130 peer-reviewed publications, book chapters and books. Dr. Ma is a holder of several US and international patents for beam technologies relating to breast cancer, prostate cancer and brain tumor radiation therapy.



Olivier Morin, PhD ^[9]
Assistant Professor

Digital medical images have tremendous predictive power. Dr. Morin specializes in quantifying and using radiological features (shape, size, location, texture, etc.) in digital medical images for the creation of prediction models for precision medicine. Clinical data and outcomes are analyzed and correlated to CT, MR and PET radiomics. Dr. Morin is one of the leads of the Radiation Oncology Informatics lab with the goal to use the wealth of information at UCSF to help define the best diagnosis and treatment approach. Dr. Morin is also involved in the development of the next generation of Oncology Information System (RayCare, RaySearch Laboratories) with the goal to implement a modern software environment built to address the current and future challenges of Radiation Oncology. Dr. Morin is also actively involved in the CNS group with focus on SRS/SBRT technique on modern linear accelerators and Gamma Knife.



Angelica Perez-Andujar, PhD
[10]
Assistant Professor

Dr. Angélica Pérez-Andújar devoted many of her years to study the neutron doses that a patient might receive during proton therapy. Working in proton therapy lead her to the area of risk assessment after radiotherapy; specifically, secondary effects due to radiation several years after a patient is treated.



Jessica Scholey, MS [11]
Clinical Instructor

Jessica is a Clinical Instructor in the UCSF Department of Radiation Oncology. She received her master's degree in Medical Physics from the University of Pennsylvania, where she subsequently served as Chief Medical Physics Resident. During this time, her research focused on image-guided radiotherapy, proton pencil beam scanning (commissioning and treatment planning), and functional imaging for sparing normal tissues. Her clinical interests range from external beam photon and proton radiotherapy to high-dose rate brachytherapy. An additional focus includes contributing to a collaborative, team-based environment which encourages high-quality assurance and care in a multidisciplinary academic institution.



Sara St. James, PhD [12]
Assistant Professor

Dr. St. James is an Assistant Professor at the UCSF Department of Radiation Oncology. She received her Ph.D. in Biomedical Engineering from the University of California, Davis and completed the Harvard Medical Physics Residency Program. Her clinical interests include implementing novel treatment planning approaches and standardizing quality assurance measurements and analysis.



Manju, Sharma, PhD [13]
Assistant Professor

Dr. Sharma is an Assistant Professor at the UCSF Department of Radiation Oncology. Before UCSF she worked as an Assistant Professor at the University of Rochester Medical Center (URMC), where she worked on the standardization and improvement of brain stereotactic radiation treatment. At UCSF, Dr. Sharma is interested in standardization and process mapping of clinical workflow. She is also interested in developing adaptive techniques and outcome models for hypo-fractionated treatments.



UCSF Main Site

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Links

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- [14] <https://radonc.ucsf.edu/atchar-sudhyadhom>
- [15] <https://radonc.ucsf.edu/gilmer-valdes>

Dr. Sudhyadhom's clinical concentration is in the area of highly focused therapies such as stereotactic radiosurgery (SRS), stereotactic body radiation therapy (SBRT), and high-dose rate brachytherapy (HDR) and he is currently part of the UCSF CyberKnife group. His research has focused on methods to improve the accuracy of these types of therapies through developments in image guidance methods and small field dosimetry.



Gilmer Valdes, PhD [15]
Assistant Clinical Professor

Dr. Valdes's primary focus in the field of radiation oncology is the development of interactive and interpretable machine learning algorithms and their applications. He comes to our department from the University of Pennsylvania where he helped develop one of the most accurate interpretable machine-learning algorithm to date, MediBoost. This kind of interaction between humans and algorithms can provide more accurate and reliable diagnoses than either method alone.