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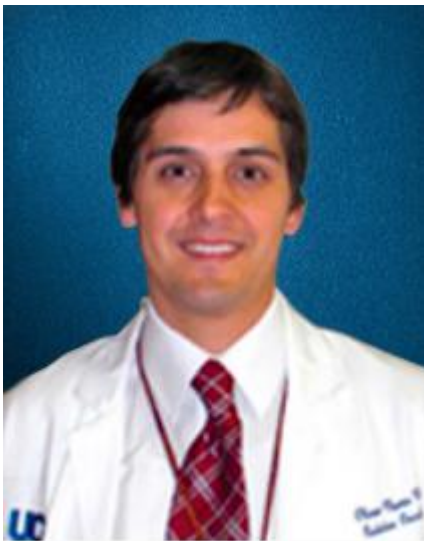
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## Olivier Morin

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### Olivier Morin, Ph.D.

**Assistant Professor**  
**Division of Physics**  
**Department of Radiation Oncology**



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Dr. Morin has developed and implemented tools of image guidance to improve the treatment efficiency and reduce the side effects of radiation treatment. He specializes in imaging (CT, Cone-Beam CT, MV fluoroscopy and MR) applied for better targeting of brain tumors and advanced patient positioning. Dr. Morin developed the use of in-room CT imaging for emergency/palliative treatment as well as for adaptive techniques. Dr. Morin is actively involved in the CNS group with focus on SRS/SBRT technique on modern linear accelerators

and Gamma Knife.

Dr. Morin leads the Radiation Oncology Informatics lab with the goal to use the wealth of information at UCSF to help define the best treatment approach and to assure quality. Patients treated at UCSF are currently added to an extensive patient registry that will produce multi-criteria analysis of diagnosis and predictive care. Such registry will enable the group to compare treatment techniques/modalities, efficacy, cost and quality of life for a number of patient metrics..

Dr. Morin's research is focused on developing and implementing tools of image guidance (patient alignment, tracking and dose verification) to improve the efficiency and reduce the side effects of radiation treatment. He specializes in medical imaging (CT, Cone-Beam CT, MV fluoroscopy, MR and PET) applied to the field of Radiation Oncology. Dr. Morin did his doctoral work on the development and clinical implementation of megavoltage cone-beam CT (MVCBCT).

Dr. Morin's current research activities include:

- (1) Clinical utilization of megavoltage cone-beam CT for patient alignment. This includes a research protocol comparing three imaging methods for the alignment of lung patients for external beam radiation treatment. A total of 30 patients will be enrolled in this study. The study will help implement a more accurate method for alignment of these patients.
- (2) Clinical utilization of megavoltage cone-beam CT for emergency treatment. The objective of this work is to image, plan and treat emergency cases while leaving patients on the treatment couch. This requires correction and calibration of CT images and the development of tools for rapid planning and dose verification. The feasibility of this project has been demonstrated and should start clinical evaluation soon after the clinical integration of Artiste.
- (3) Utilization of megavoltage fluoroscopy (MV cine) for assessment and correction of intra-fraction motion. MV cine is also studied for the application of gated treatment of lung and pelvis patients.
- (4) Utilization of electronic portal imaging devices for improved quality assurance of intensity modulation radiation treatment. This includes using the detector for verification of leaf position and accurate monitor units.

## Education

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1999-2003	Laval University, Québec, Canada	BSE	Engineering Physics
2003-2007	University of California, Berkeley/University of California, San Francisco	PhD	Bioengineering

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2005	Haas School of Business, University of California Berkeley	MBA certificate	Management of New Technology
2008-2010	University of California, San Francisco, CA	Medical Physics Resident	Radiation Oncology

## Professional Experience

2010-present UCSF Physics Faculty Radiation Oncology

## Awards & Honors

1999	Entrance Fellowship, Awarded on Merit by School of Engineering, Laval University.
2000	Undergraduate Scholarships, Awarded on Merit with Nation-Wide Contest, Natural Sciences and Engineering Research Council of Canada (NSERC).
2001	Undergraduate Summer Student Scholarships, Awarded on Merit with Nation-Wide Contest, Canada's Laboratory of Particle and Nuclear Physics (TRIUMF).
2002	Canadian Student Exchange Fellowship (CANEX), Awarded on Merit by University, University of Toronto.
2002	Undergraduate Scholarships, Awarded on Merit with Nation-Wide Contest, Natural Sciences and Engineering Research Council of Canada (NSERC).
2003	Master Scholarship, Awarded on Merit with Nation-Wide Contest, Natural Sciences and Engineering Research Council of Canada (NSERC).
2004	Graduate Health Sciences Fellowship, Awarded on Merit by Graduate School, University of California San Francisco.
2005	Doctoral Scholarship, Awarded on Merit with Nation-Wide Contest, Natural Sciences and Engineering Research Council of Canada (NSERC).
2006	Student Travel Price, Awarded based on Abstract Quality, Electronic Portal imaging IXth Conference, Melbourne, Australia.
2006	Doctoral Scholarship, Awarded on Merit by Quebec Province Contest, Fond de Recherche en Santé du Québec.
2011	Top 4 Cited (scientific articles published in IJROBP in the last five years). Extracted from Scopus (on Wed Nov 11 06:17:49 GMT 2009)
2012	Medical Physics Editor's pick for May 2012
2014	Nominated to the Board of Innovators and Research. IBA Dosimetry, Germany
2015	Elected President of the Northern California Chapter of the AAPM association

2015	Nominated to the Board of Innovation for RaySearch Laboratories, Stockholm, Sweden
2015	Named Chair of the AAPM Task Group Report on "Photon and Proton Dose Calculation using in-room CT"
2015	Named Member of the Scientific Committee of the International Symposium on Electronic Portal Imaging
2016	Named Member of the RayCare Development Team

Recent Significant Publications :

Held M, Kirby N, Morin O, Pouliot J., **Dosimetric aspects of inverse-planned modulated-arc total-body irradiation.** Med Phys. 2012 Aug;39(8):5263-71.

Kirby N, Held M, Morin O, Fogh S, Pouliot J., **Inverse-planned modulated-arc total-body irradiation.** Med Phys. 2012 May;39(5):2761-4.

Faddegon BA, Aubin M, Bani-Hashemi A, Gangadharan B, Gottschalk AR, Morin O, Sawkey D, Wu V, Yom SS., **Comparison of patient megavoltage cone beam CT images acquired with an unflattened beam from a carbon target and a flattened treatment beam.** Med Phys. 2010 Apr;37(4):1737-41.

Aubry JF, Cheung J, Morin O, Beaulieu L, Hsu IC, Pouliot J., **Investigation of geometric distortions on magnetic resonance and cone beam computed tomography images used for planning and verification of high-dose rate brachytherapy cervical cancer treatment.** Brachytherapy. 2010 Jul-Sep;9(3):266-73.

D. Sawkey, M. Lu, O. Morin, M. Aubin, S. S. Yom, A. R. Gottschalk, A. Bani-Hashemi and B. A. Faddegon, **A diamond target for megavoltage cone-beam CT,** Med. Phys. 37, 1246-1253 (2010).

Morin O, Aubry JF, Aubin M, Chen J, Descovich M, Hashemi AB, Pouliot J., **Physical performance and image optimization of megavoltage cone-beam CT.** Med Phys. 2009 Apr;36(4):1421-32.

Aubry JF, Cheung J, Morin O, Gottschalk A, Beaulieu L, Pouliot J., **Correction of megavoltage cone-beam CT images of the pelvic region based on phantom measurements for dose calculation purposes.** J Appl Clin Med Phys. 2009 Jan 27;10(1):2852.

M. Descovich, O. Morin, J. F. Aubry, M. Aubin, J. Chen, A. Bani-Hashemi and J. Pouliot, **Characteristics of megavoltage cone-beam digital tomosynthesis,** Med. Phys. 35, 1310-1316 (2008).

Maltz JS, Gangadharan B, Vidal M, Paidi A, Bose S, Faddegon BA, Aubin M, Morin O, Pouliot J, Zheng Z, Svatos MM, Bani-Hashemi AR. **Focused beam-stop array for the measurement of scatter in megavoltage portal and cone beam CT imaging.** Med Phys.

2008 Jun;35(6):2452-62.

O. Morin, J. Chen, M. Aubin, A. Gillis, J.-F. Aubry, S. Bose, H. Chen, M. Descovich, P. Xia and J. Pouliot, **Dose calculation using megavoltage cone-beam CT**, Int. J. Radiat. Oncol. Biol. Phys. 67, 1201-1210 (2007).

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