BIOGRAPHICAL SKETCH

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NAME **MAXIM, PETER G.**	POSITION TITLE Assistant Professor of Radiation Oncology
eRA COMMONS USER NAME (credential, e.g., agency login) MAXIM.PETER	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
Technical University, Berlin, Germany	B.S.	1990-1994	Physics
Technical University, Berlin, Germany	M.Sc..	1994-1997	Applied Physics
Humboldt University, Berlin, Germany	Ph.D	1998-2003	Biophysics
Stanford University, Stanford, CA	Postdoc	2003-2005	Molecular Imaging

A. Personal Statement

As a physicist in the Department of Radiation Oncology, I have been responsible for the validation and clinical implementation of our treatment planning software that equipped me with the skills necessary for the proposed project. Additionally, I have clinically implemented different respiratory management techniques and developed quality assurance procedures for organ motion management. I also assisted my colleagues in building an active clinical and research program of four-dimensional metabolic image-guided radiation therapy and stereotactic ablative radiotherapy (SABR) for lung cancer. In addition I have commissioned major diagnostic and therapeutic equipment in our department and served as PI on institutional grants and co-investigator on several clinical trials.

B. Positions and Honors

Professional Experience

1994-1996 Course Tutor, Department of Solid State Physics, Technical University, Berlin Germany
1997-1998 Research Assistant, Department of Biophysics, Humboldt University, Berlin, Germany
1999-2003 Research Assistant, Department of Radiation Oncology, Stanford University, Stanford
2005–2006 Radiation Physicist I, Department of Radiation Oncology, Stanford University, Stanford
2006-2007 Clinical Instructor, Department of Radiation Oncology, Stanford University, Stanford
2007-2008 Acting Assistant Professor, Department of Radiation Oncology, Stanford University, Stanford
2008-present Assistant Professor, Department of Radiation Oncology, Stanford University, Stanford

Honors

1998 Nachwuchs Foerderungs Gesetz (Berlin, Germany), Young Investigator Fellowship
2000 German Academic Exchange Program (DAAD, Berlin, Germany), Fellowship
2004 Academy of Molecular Imaging, Young Investigator Travel Scholarship
2006 Stanford Cancer Center, Orsak Innovation Fund
2009 Teacher of the Year Award (2008-2009), Association of Residents in Radiation Oncology

C. Selected Peer-reviewed Publications (Selected from 37 peer-reviewed publications)

1. Benaron DA, Parachikov IH, Friedland S, Soetkino R., Brock-Utne J., van der Starre P.J., Nezhat C., Terris M.K., **Maxim PG**, Carson J.J.L., Razavi M.K., Gladstone H.B., Fincher E.F., Hsu C.P., Clark F.L., Cheong W.F., Duckworth J.L., Stevenson D.K., Continuous, noninvasive, and localized microvascular tissue oximetry using visible light spectroscopy, Anesthesiology 100 (6): 1469-1475 JUN 2004
2. **Maxim PG**, Carson JJL, Ning S, Knox SJ, Boyer LA, Enhanced Radiosensitaziation of Tirapazamine after Electric Pulse Treatment, Radiation Research 162 (2) 185-193 July 2004
3. **Maxim PG**, Carson JJL, Benaron DA, Loo BW, Xing L, Boyer AL, Friedland S, Optical detection of tumors in vivo by visible light tissue oximetry, Technol. Cancer Res. Treat. 2005 Jun;4(3):227-34
4. Friedland S, **Maxim PG**, Soetikno R, Absence of Ischemia in Telangiectasias of Chronic Radiation Proctopathy, Endoscopy 38 (5): 488-492 May 2006

5. Lee P, Weerasuriya DK, Lavori PW, Quon A, Hara W, **Maxim PG**, Le Q-T, Wakelee HA, Donington JS, Graves EE, Loo BW, Metabolic tumor Burden Predicts for Disease Progression in Lung Cancers, Int J Radiat Oncol Biol Phys. 2007 Oct 1;69(2):328-33
6. **Maxim PG**, Shirazi H, Thorndyke B, Loo BW, Luxton G, Le Q, Quantification of Motion for Different Thoracic Locations using 4DCT; Implications for Radiation Treatment Planning, Int J Radiat Oncol Biol Phys. 2007 Dec 1;69(5):1395-401
7. Minn AY, Schellenberg D, **Maxim PG**, Goodman KA, Chang D, Koong AC, Pancreatic tumor motion on a single planning 4D-CT does not correlate with intrafraction tumor motion during treatment, Am J Clin Oncol, 2009 Aug, 32(4):364
8. Cherry EM, **Maxim PG**, Eaton JK, Particle size, magnetic field, and blood velocity effects on particle retention in magnetic drug targeting. Med Phys. 2010; 37 (1): 175-82
9. Daly ME, Le QT, **Maxim PG***, Loo BW, Kaplan MJ, Fishbein N, Pinto H, Chang DT, Intensity-Modulated Radiotherapy in the Treatment of Oropharyngeal Cancer: Clinical Outcomes and Patterns of Failure, Int J Radiat Oncol Biol Phys. 2010; 76 (5): 1339-46
10. King CR†, **Maxim PG†**, Hsu A, Kapp DS, Incidental Testicular Irradiation from Prostate IMRT: It All Adds Up, Int J Radiat Oncol Biol Phys. 2010; 77 (2): 484-9 († equally contributing authors)
11. Daly ME, Le QT, Jain AK, **Maxim PG**, Hsu A, Loo BW, Kaplan MJ, Fischbein NJ, Colevas AD, Pinto H, Chang DT, Intensity-modulated radiotherapy for locally advanced cancers of the larynx and hypopharynx,. Head Neck. 2011, Head Neck, 2011,33 (1)
12. Daly ME, Le QT, Kozak MM, **Maxim PG**, Murphy JD, Hsu A, Loo BW, Kaplan MJ, Fischbein NJ, Chang DT, Intensity–Modulated Radiotherapy for Oral Cavity Squamous Cell Carcinoma: Patterns of Failure and Predictors for Local Control, Int J Radiat Oncol Biol Phys. 2011 Aug 1;80(5):1412-22
13. Hong JC, Yu Y, Rao AK, Dieterich S, **Maxim PG**, Le QT, Diehn M, Sze DY, Kothary N, Loo BW, High retention and safety of percutaneously implanted endovascular embolization coils as fiducial markers for image-guided stereotactic ablative radiotherapy of pulmonary tumors, Int J Radiat Oncol Biol Phys. 2011 Sep 1;81(1):85-90
14. **Maxim PG**, Loo BW, Murphy JD, Chu KP, Hsu A, Le QT On-Board Imaging Validation of An Optically Guided Stereotactic Radiosurgery Positioning System For Conventionally Fractionated Radiotherapy of Paranasal Sinus and Skull Base Cancers, Int J Radiat Oncol Biol Phys. 2011 Nov 15;81(4):1153-9
15. Murphy JD, La TH, Chu K, Quon A, Fischbein NJ**, Maxim PG**, Graves EE, Loo BW, Le QT, Postradiation Metabolic Tumor Volume Predicts Outcome in Head-and-Neck Cancer. Int J Radiat Oncol Biol Phys. 2011 Jun 1;80(2):514-21
16. Cui G, Gopalan S, Yamamoto T, Berger J, **Maxim PG**, Keall PJ, Commissioning and quality assurance for a respiratory training system based on audiovisual biofeedback. J Appl Clin Med Phys. 2010; 11 (4):3262
17. Schellenberg D, Christman-Skieller C, Chun CL, Columbo LA, Ford JM, Fischer GA, Kunz PL, Van Dam J, Quon A, Desser TS, Norton J, Hsu A, **Maxim PG**, Xing L, Goodman KA, Chang DT, Koong AC, Single-Fraction Stereotactic Body Radiation Therapy and Sequential Gemcitabine for the Treatment of Locally Advanced Pancreatic Cancer. Int J Radiat Oncol Biol Phys, 2011, accepted
18. Johnston E, Diehn M, Murphy JD, Loo BW and **Maxim PG.** Reducing 4D CT artifacts using optimized sorting based on anatomic similarity, Med Phys, 38, 2424-2429, 2011
19. Kozak MM, Murphy JD, Schipper ML, Donington JS, Zhou L, Whyte RI, Shrager JB, Hoang CD, Bazan J, **Maxim PG**, Graves EE, Diehn M, Hara WY, Quon A, Le Q, Wakelee HA, Loo BW. 2011. Tumor volume as an imaging-based predictor of outcome in preoperative chemoradiotherapy and surgery for locally advanced non-small cell lung cancer. J Thorac Oncol, 2011, 6(5):920-6.
20. Schellenberg D, Kim J, Christman-Skieller C, Chun CL, Columbo LA, Ford JM, Fisher GA, Kunz PL, Van Dam J, Quon A, Desser TS, Norton J, Hsu A, **Maxim PG**, Xing L, Goodman KA, Chang DT, Koong AC, Single-fraction stereotactic body radiation therapy and sequential gemcitabine for the treatment of locally advanced pancreatic, Int J Radiat Oncol Biol Phys. 2011, 81(1):181-8
21. Murphy JD, Chisholm KM, Daly ME, Wiegner EA, Truong D, Iagaru A**, Maxim PG**, Loo BW, Graves EE, Kaplan MJ, Kong C, Le QT, Correlation between metabolic tumor volume and pathologic tumor volume in squamous cell carcinoma of the oral cavity, Radiother Oncol., 2011, 101(3):356-61.
22. Chu KP, Murphy JD, La TH, Krakow TE, Iagaru A, Graves EE, Hsu A, **Maxim PG**, Loo BW, Chang DT, Le, Prognostic Value of Metabolic Tumor volume and Velocity of Predicting Outcomes in Head and Neck Cancers, Int J Radiat Oncol Biol Phys, 2012, 41(1):223-35

23. Daly ME, Kapp DS, **Maxim PG**, Welton ML, Tran PT; Koong AC, Chang DT, Orthovoltage intraoperative radiotherapy for locally advanced and recurrent colorectal cancer. Dis Colon Rectum, 2012, 55(6):695-702
24. Trakul N, Koong AC, **Maxim PG**, Chang DT, Modern radiation therapy techniques for pancreatic cancer. Gastroenterol Clin North Am. 2012 Mar;41(1):223-35
25. Atwood T, Hsu A, Ogara MM, Luba DG, Tamler BJ, DiSario JA and **Maxim PG**, Radiotherapy Dose Perturbations of Esophageal Stents Examined in an Experimental Model, Int J Radiat Oncol Biol Phys. 2012 Apr 1;82(5):1659-64
26. Trakul N, Chang CN, Harris J, Chapman C, Rao A, Shen J, Quinlan-Davidson S, Filion EJ, Wakelee HA, Colevas AD, Whyte RI, Dieterich S, **Maxim PG**, Hristov D, Tran P, Le QT, Loo BW Jr, Diehn M, Tumor Volume-Adapted Dosing in Stereotactic Ablative Radiotherapy of Lung Tumors. Int J Radiat Oncol Biol Phys. 2012, 84(1): 231-7.
27. Cui G, Jew B, Yamamoto T, Hong JC, Loo BW and **Maxim PG**, *An automated method based on image similarity to quantify motion artifacts in cine four dimensional computed tomography images,* J. Appl. Clin. Med. Phys. 2012, 13(6)
28. Jarvis L, **Maxim PG**, Horst K, Deep Inspiration Breath Hold Reduces Dose to the Left Ventricle and Proximal Left Anterior Descending Artery during Radiotherapy for Left-Sided Breast Cancers, Journal of Cancer Therapy, 2012, 3, 673-679
29. Abelson JA, Murphy JD, Trakul N, **Maxim PG***, Graves EG, Le QT, Diehn M, Loo BW, *Metabolic imaging metrics correlate with survival in early stage lung cancer treated with stereotactic ablative radiotherapy*, Lung Cancer, 2012, 78(3): 219-24
30. Trakul N, Harris JP, Le QT, Hara WY, **Maxim PG**, Loo BW Jr, Diehn M, Stereotactic ablative radiotherapy for reirradiation of locally recurrent tumors, J Thorac Oncol. 2012; 7(9): 1462-5
31. Liu MS; Eclov NCW, Trakul N, Murphy J, Diehn M; Le QT, Dieterich S, **Maxim PG*,** Loo BW*, Clinical impact of dose overestimation by effective path length calculation in stereotactic ablative radiotherapy of lung tumors, Practical Radiation Oncology, 2012, accepted.
32. Hong JC, Eclov NCW, Yao Y, Rao AK, Dieterich S, Le QT, Diehn M, Sze, DY, Loo BW, Kothary N, **Maxim PG**, Analysis of migration of implanted markers for image-guided lung tumor stereotactic ablative radiotherapy, J. Appl. Clin. Med. Phys. 2012, accepted.
33. Shultz, BD, Jang SS, Hanlon AK, Diehn M, Loo BW, **Maxim, PG**, *The effect of arm position on the dosimetry of thoracic stereotactic ablative radiotherapy using volumetric modulated arc therapy*, Practical Radiation Oncology, 2013, accepted

D. Research Support

Ongoing Support:

Stanford-Varian Master Research Agreement (PI: Le) 1/01/2011-12/31/2013 0% effort
Role: Co-investigator **$25,000.00**
Title: "*Phase II trial of tumor volume and location adapted stereotactic ablative radiotherapy of pulmonary tumors using gated RapidArc with FFF and anatomically optimized coached breath hold*"
This is a master research agreement between Varian Medical Systems and the Department of Radiation Oncology at Stanford to support research on novel radiation therapy technologies. Professor Maxim is co-investigator on a sub-project with the aims of evaluating the safety of a tumor volume adapted dosing approach to stereotactic ablative radiotherapy of lung tumors, and using audio-visual biofeedback to coach patients to perform breath holds that optimize the tumor position in relation to sensitive normal organs.
Role: Co-investigator

Stanford University - Cardiovascular Institute (PI: Maxim) 9/01/2011-10/31/2012 0% effort
Role: PI **$25,000.00**
Title: "*Dose Escalation Study for Stereotactic Radiotherapy for Renal Sympathetic Ablation*"
This is a Stanford University internal fund awarded to Dr. Maxim. The goal of the study is to evaluate the safety and efficacy of stereotactic body radiation therapy for the treatment of refractory hypertension.

Walter H Coulter Foundation (PI: Maxim) 4/2/2012-4/1/2013 0% effort
Role: PI **$50,000.00**

Title: "*Pluridirectional High-energy Agile Scanning Electron Radiotherapy (PHASER): a novel design for radiation treatment of cancer*"
The aim of this study is to assess experimentally the biological effectiveness of extremely rapid delivery of radiation therapy and of very high-energy electron therapy in live tumor models.

Department of Defense - LC110221 - (PI: Maxim) 09/01/2012-08/31/2014 8% effort
Role: PI **$400,000.00**
Title: "*Improving the Diagnostic Specificity of CT for Early Detection of Lung Cancer: 4D CT-Based Pulmonary Nodule Elastometry*"
The aim of this study is to develop an early lung cancer detection method based on pulmonary nodule elastometry derived from high-resolution 4D CT image.

Department of Defense - LC110246 – (PI: Loo) 01/09/2012-08/31/2015 1% effort
Role: Co-Investigator **$400,000**
Title: "EF5 PET of Tumor Hypoxia: A Predictive Imaging Biomarker of Response to Stereotactic Ablative Radiotherapy (SABR) for Early Lung Cancer"
The aim of the study is the validation of EF5 PET imaging as a marker of hypoxia and prognosis in SABR for lung tumors.

Bio-X Interdisciplinary Initiative Program – (PI: Maxim) 10/01/2012-09/30/2014 0% effort
Role: PI **$150,000**
Title: Pluridirectional High-energy Agile Scanning Electron Radiotherapy (PHASER): a novel design for radiation treatment of cancer
The aim of this study is to determine optimal parameters for the PHASER by using Monte Carlo simulations and the experimental validation of the simulation using the NLCTA at SLAC.
Role: PI

Department of Defense – LC 120541 – (PI: Maxim) 09/2013-08/2014 2% effort
Role: PI **$100,000**
Title: Very High Dose Rate Radiobiology and Radiation Therapy for Lung Cancer
The aim of this study is to assess experimentally the biological effectiveness of extremely rapid delivery of radiation therapy and of very high-energy electron therapy in live tumor models.

Department of Defense – LC120229- (PI: Maxim) 06/2013-05/2015 10% effort
Role: PI **$350,000**
Title: Pluridirectional High-Energy Agile Scanning Electron Radiotherapy (PHASER): Extremely Rapid Treatment for Early Lung Cancer
The aim of this study is to determine optimal parameters for the PHASER by using Monte Carlo simulations and the experimental validation of the simulation using the NLCTA at SLAC.

Coulter H Wallace Foundation (PI: Maxim) 05/2013-04/2014 0% effort
Role: PI **$100,000**
Title: Pluridirectional High-Energy Agile Scanning Electron Radiotherapy (PHASER)
The aim of this grant is secure IP of the PHASER concept.

Overlap:

None