

## BIOGRAPHICAL SKETCH

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**NAME:**

Sushakumari (Susha) Pillai

**POSITION TITLE**

Assistant Professor

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**EDUCATION/TRAINING**

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**INSTITUTION & LOCATION****DEGREE****MM/YY****FIELD OF STUDY**

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Sree Narayana College, Kerala, India

B.Sc

03/94

Physics

M.G University, Kerala, India

M.Sc

05/96

Physics

University of Missouri, Columbia, MO

M.S

12/99

Medical Physics

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**Positions and Employment***July 2009 – present*Assistant Professor – Oregon Health & Science University  
Portland, Oregon*July 2005 – June 2009*Assistant Professor – University of Nebraska Medical Center, Omaha-  
Nebraska*May, 2008 – Sept 2008*Interim Chief of Clinical Physics/ Assistant Professor - University of  
Nebraska Medical Center, Omaha- Nebraska*July, 2001–June 2005*

Instructor- University of Nebraska Medical Center, Omaha- Nebraska

*May 2000 – June, 2001*

Medical Physicist – St. Joseph Hospital, Milwaukee- Wisconsin

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**Professional Qualifications and Memberships**

- Certified in Therapeutic Radiological Physics by the ABR in 2004 , Completed ABR MOC exam in Oct 2013
- Full member – AAPM, ASTRO, ACMP
- AAPM Committee Membership: Member of Task Group 182 AAPM Recommendations on Electronic Brachytherapy Quality Management

**Honors and Award**

“2014 Outstanding Physics Teacher” award from Dept of radiation Oncology-Oregon health & Science University.

“2013 Outstanding Physics Teacher” award from Dept of radiation Oncology-Oregon health & Science University

Two time Silver-U award winner from the chancellor of the University of Nebraska Medical Center for the outstanding performance.

### **Poster & Oral Presentations:**

*“Commissioning of OSLDs as an In-vivo Dosimeter in INTRABEAM Radiotherapy for Early Stage Breast Cancer.”* Susha Pillai, Richard Crilly, Wolfram Laub, Oregon Health & Science University, Portland, OR, Med.Physics 40, 209(2013) Poster Presentation at AAPM meeting, 2013.

*“Novel Secondary Quality Assurance Procedure for the INTRABEAM System Ion chamber using commercial OSLDs”* J Keller, W Laub and S.Pillai Oregon health & Science University, Portland, OR Med.Physics 40, 235 (2013) Poster Presentation at AAPM meeting, 2013.

*“Physics & Dosimetry of Intrabeam System: an Intraoperative Brachytherapy platform”* by Susha Pillai & Junan Zhang" Oral Presentation at Region I AAMD Northwest Chapter AAPM spring meeting March 2011.

*“Performance Comparison of In Vivo Dosimeters – TLDs, MOSFETs & OSLDs for Patients Receiving Total Body irradiation”* Susha Pillai, Wolfram Laub, Tony He, Oregon Health & Science University, Portland, OR, Poster Presentation at AAPM meeting, 2011.

*“Evaluation of Eclipse AAA Dose Calculation Accuracy In The Presence of A Titanium Spinal Fixation Device”* Toney He, Wolfram Lau, Susha Pillai, Oregon Health & Science University, Portland, OR, Poster Presentation at AAPM meeting, 2011.

*“Benchmark measurements in heterogeneous phantoms under conditions of electronic disequilibrium ”* S Pillai, TD Solberg, PM Medin, IJ Chetty, University of Nebraska Medical Center, Omaha, NE. Poster Presentation at AAPM meeting, 2007.

*“An evaluation on the influence of MU number and field length on MV-CBCT image quality on a Siemens Oncor linac machine”* H Li, T Solberg, S Pillai, University of Nebraska Medical Center, Omaha, NE. Poster Presentation at AAPM meeting, 2007

*“Analysis of Photon Beam Data from Multiple Institutions: An Argument for Reference Data”*, S Li, P.Medin,S.Pillai and T. Solberg, University of Nebraska Medical Center, Omaha, NE. Med.Phys 33, 1991 (2006) Poster Presentation at AAPM meeting, 2006.

*“Frameless Radiosurgery Using Stereoscopic X-ray Guidance: System Characteristics and 2 Year Clinical Experience”*, J.Mullins, S.Li, S. Pillai, P.Medine and T.Solberg University of Nebraska Medical Center, Omaha, NE. Med.Phys 33, 2215 (2006) Poster Presentation at AAPM meeting, 2006.

*“Comparison of IMRT plans with tissue heterogeneity corrections using the Pinnacle<sup>3</sup> and CORVUS treatment planning systems.”* S. Pillai, K.M. Ayyangar, S.Li, R. Nehru, W.Zhen, C.Enke. Poster Presentation at AAPM meeting, 2005.

*“Independent dosimetric validation of Novalis IMRT and Dynamic Conformal plans using PHILIPS Pinnacle<sup>3</sup> Treatment Planning system.”* R. Nehru, R. Foster, P Sourivong, K. Ayyangar, S. Li, S. Pillai, D Djajaputra, A. Fung, R. Thompson, C. Enke. Poster Presentation at AAPM meeting, 2005.

*“Development of 3D planning for obese patients larger than CT FOV using PHILIPS Pinnacle<sup>3</sup> treatment planning system.”* R. Nehru, , M. Headley, K. Ayyangar, R. Thompson, S. Pillai, R. Natarajan, S. Li, C. Poster Presentation at AAPM meeting, 2005

*“Target Localization of Intensity Modulated Radio-surgery Patients Using ExacTrac system”* S Li, K Ayyangar, S Pillai, R Nehru, A Fung, D Djajaputra, R Thompson, N Raman, W Zhen, and C Enke, Med.Phys 32, 2045(2005).

*“Comparison of NOMOS CORVUS and ADAC Pinnacle IMRT planar dose calculations with measurements using MapCheck”;* K.Ayyangar, S.Li, R.Nehru, P.Sourivong, S.Pillai, A,Fung, N,Raman, K.Zhen, R.Thompson and C.Enke, Univ of Nebraska Medical Center, Omaha, NE; Medical Physics 2004, 31(6):1872. Poster Presentation at AAPM meeting, 2004.

*“Prostate Motion and Isocenter Adjustment with BAT Ultrasound Localization”*, Int. J. of Radiation Oncology Biol. Phys. Vol 60 issue 1 Sept 2004 S615-S616. A. Fung, N. V. Raman, W. Zhen, R. B. Thompson, S. Li, R. M. Nehru, S. Pillai, K. M. Ayyangar, C. A. Enke, Radiation oncology, University of Nebraska Medical Center, Omaha,NE 46<sup>th</sup> Annual ASTRO Meeting.

*“An Analysis of the Delivery of IMRT Segments Using the IMPAC Recorded Data”;* K.M. Ayyangari, M. Yoe-Sein, S. Li, S. Pillai, V.S.Chivukula, C.B. Saw, W. Zhen, N. Raman, C. Enke, Univ Nebraska Medical Center, Omaha, NE; Medical Physics 2003, 30(6):1493.Poster Presentation at AAPM meeting, 2003

*“Dose Linearity and Dose Uniformity of Sub-Fields for IMRT”;* C. Saw\*, S. Li, K. Ayyangar, M. Yoe-Sein, S. Pillai, W. Zhen, C. Enke, J. Celi ; Medical Physics 2003, 30(6):1492. Poster Presentation at AAPM meeting, 2003

*“Comparison of a Complex Prostate Plan Using Three IMRT Planning Systems”;* K. Ayyangar\*, S. Li, C. Saw, M. Yoe-Sein, S. Pillai, V. Chivukula, C. Enke, Univ Nebraska Medical Center, Omaha, NE; Medical Physics 2003, 30(6):1487.Oral Presentation at Missouri River Valley Chapter-AAPM meeting, May 2003

*“Emerging Role of Multi-Modality Fusion in Radiation Therapy”* ; S.Pillai, M.S., K. Ayyangar,Ph.D., A. Fung,Ph.D., R. Nehru,Ph.D., M.Headley,B.S., Charles A. Enke, M.D., Raman Natarajan, M.D., Weining Zhen, M.D., Robert Thompson,M.D., Oral Presentation at Radiation Oncology Educational Event, District 7 Organization, NE.

## Publications:

*"Impact of irradiation and immunosuppressive agents on immune system homeostasis in rhesus macaques"* Meyer C<sup>1</sup>, Walker J<sup>2</sup>, Dewane J<sup>1</sup>, Engelmann F<sup>3</sup>, Laub W<sup>2</sup>, Pillai S<sup>2</sup>, Thomas CR Jr<sup>2</sup>, Messaoudi I<sup>1,3</sup>. Clin Exp Immunology 2015 Apr 22<sup>nd</sup>.

*"Effects of Total Body Irradiation on T-cell and B-cell Subsets as well as macrophage in Rhesus Macaque"* Int Journal of Radiation Oncology Biology Physics, Vol 84, Issue 3, Supplement , November 2012 Pages S684. ASTRO 54<sup>th</sup> meeting. J. Walker<sup>1,2</sup>, C.R. Thomas<sup>2</sup>, J. Dewane<sup>3</sup>, K. Habberthur<sup>3</sup>, S. Pillai<sup>2</sup>, W. Laub<sup>2</sup>, I. Messaoudi<sup>3,4</sup>

*"Experimental verification and clinical implementation of a commercial Monte Carlo electron beam dose calculation algorithm.* Med. Phys. 35 (3) , March 2008 pp 1028-103 <sup>1</sup>Margarida Frago Ph.D, <sup>1</sup>Sushakumari Pillai, M.S, <sup>2</sup>Timothy D. Solberg, Ph.D, <sup>1</sup>Indrin J. Chetty, Ph.D <sup>1</sup> University of Nebraska Medical Center, Omaha, Nebraska <sup>2</sup>.UT Southwestern Medical Center, Dallas, Texas.

*"Dose volume histogram comparison between ADAC Pinnacle and NOMOS Corvus system for IMRT"* K.M Ayyangar, A.Y.C. Fung, S.Li, S.Pillai, M.M. Yoe-sein, W.Zhen and C.A .Enke, Australian Physical & Eng sciences in Medicine, V28, No1, 2005.

*"Effects of field parameters on IMRT plan quality for gynecological cancer: A case study"* Albert Y.C. Fung, Charles A Enke, Komanduri M Ayyangar, Robert B Thompson, Weining Zhen, Natarajan V Raman, David Djajaputra, Sicong Li, Ramasamy M Nehru, Sushakumari Pillai, Paul Sourivong, Mary Headley, Ann L Yager, Journal of Applied Clinical Physics 02/2005; 6(3); 46-62.

*"Clinical Implementations of Intensity-modulated Radiation Therapy"* C.B Saw Ph.D., K. Ayyangar, Ph.D., Weining Zhen, M.D., Maung Yoe-Sein, M.S., S. Pillai, M.S., and Charles A. Enke, M.D., Medical Dosimetry, Vol 27, No.2, pp 161-169, 2002.

*"Graphical user Interface for Management of Advanced Radiotherapy delivery systems";* C.B.Saw, K.M. Ayyangar, W. Zhen, S. Pillai, M. Yoe-Sein, CA Enke, DJ Carlson, JC Celi; Electromedica 70, 2002, no.2 p 118-122.

*"Verification of Lung Density Correction Algorithm used in a Commercial IMRT planning system"* Medical Physics Journal, Sept 1998; T.K.M.Nair Ph.D, A.S Gray M.S, K.V. Boydston B.S Joe Arrington cancer center and Susha Pillai, University of Missouri, Columbia.

*"Phoswich Detectors with DSP Analysis for Low Energy, Low Activity Photon measurements,"* Trans. Am. Nucl. Soc., 80, 64-65 (June, 1999); Pillai, S., J. Feng and W.H. Miller Ph.D.