

## **CURRICULUM VITAE**

**NESRIN DOGAN, PH.D.**

### **I. Personal**

Name: Nesrin Dogan

Current Academic Rank: Pending rank Professor

Primary Department: Radiation Oncology

Citizenship: USA

### **II. Higher Education**

*Ph.D.* Nuclear Engineering, 8/1993, Department of Nuclear Engineering and Radiological Sciences, The University of Michigan, Rackham Graduate School, Ann Arbor, Michigan.

*M.Sc.* Nuclear Engineering, 12/1985, Department of Nuclear Engineering, Hacettepe University, Ankara, Turkey.

### **Licensure**

Florida Department of Health License: License #:TRP409, 9/5/2012.

### **Certification**

Therapeutic Radiological Physics by the American Board of Radiology, 6/12/2001.

### **III. Experience**

#### **Academic**

*Nov 2012 – Present* Vice Chair and Director of Medical Physics, Department of Radiation Oncology, University of Miami School of Medicine, Miami, Florida.

*May 2012 – Oct 2012* Professor and IMRT Group Leader, Department of Radiation Oncology, Virginia Commonwealth University Medical Center, Richmond, Virginia.

*July 2010 – May 2012* Professor and Director of Clinical Physics, Department of Radiation Oncology, Virginia Commonwealth University Medical Center, Richmond, Virginia.

*June 2007 – July 2010* Associate Professor and Director of Clinical Medical Physics Program, Department of Radiation Oncology, Virginia Commonwealth University Medical Center, Richmond, Virginia.

*Nov 2003 – June 2007* Associate Professor and Group Leader of IMRT Program, Department of Radiation Oncology, Virginia Commonwealth University Medical Center, Richmond, Virginia.

*Aug 1998 – Dec 2003* Assistant Professor, Department of Radiation Oncology, Loyola University Chicago Medical School, Maywood, Illinois.

*Sept 1993– Dec 1995* Post Doctoral Research Fellow, Department of Radiation Oncology, the University of Michigan Medical Center, Ann Arbor, Michigan.

*June 1993– Sept 1993* Post Doctoral Research Fellow, Department of Nuclear Engineering and Radiological Sciences, The University of Michigan, Ann Arbor, Michigan.

#### **Non-Academic**

*Jan 1996 – Aug 1998* Medical Physicist, Computerized Medical Systems, Research and Development Section, St. Louis, Missouri.

## IV. Publications

### Peer-reviewed Publications

1. E. Weiss, S. Balik, M. Fatyga, W. Sleeman IV, Y. Wu, **N. Dogan**, G. Hugo, "Dose Escalation for Locally Advanced Lung Cancer using Adaptive Radiotherapy with Simultaneous Integrated Volume-Adapted Boost," *Int. J. Rad. Onc. Biol. Phys.*, Vol. 86(3), pp: 414-419 (2013).
2. N. Hardcastle, W.A. Tome, D.M. Cannon, C.L. Brouwer, P.W.H. Wittendorp, **N. Dogan**, M. Guckenberger, et. al, "A multi-institution evaluation of deformable image registration algorithms for automatic organ delineation in adaptive head and neck radiotherapy," *Radiation Oncology*, Vol. 7:90, pp: 1-7(2012).
3. D. Zheng, J. Lu, A. Jefferson, C. Chang, J. Wu, W. Sleeman, E. Weiss, **N Dogan**, S. Song, and J. Williamson, "A Protocol to extend the longitudinal coverage of on-board cone-beam CT," *JACMP*, Vol. 13(4), pp: 141-151(2012).
4. J. J. Gordon, EWeiss, O. K. Abayomi, J. V. Siebers and **N. Dogan**, "The effect of Uterine motion and uterine margins on target and normal tissue doses in Intensity modulated radiation therapy of cervical cancer," *Phys. Med. Biol.* Vol 56, pp: 2887-2901 (2011).
5. **N. Dogan**, S. Song, H. Saleh, J. Wu, M.J Murphy, "Comparisons of multiple automated anatomy-based image-guidance methods for patient setup before head/neck external-beam radiotherapy" *JACMP*, Vol. 12 (1), pp: 76-85 (2011).
6. **N. Dogan**, I. Mihaylov, Y. Wu, P.J Keall, J.V Siebers and M.P. Hagan, "Monte Carlo Dose Verification of Prostate Patients Treated with Simultaneous Integrated Boost Intensity Modulated Radiation Therapy", *Radiation Oncology*, Vol. 4:18, pp: 18-27(2009).
7. M. Fatyga, J. Williamson, **N. Dogan**, D. Todor, J. Siebers, R. George, I. Barani, and M. P.Hagan. "A comparison of HDR brachytherapy and IMRT techniques dose escalation in prostate cancer: A radiobiological modeling study." *Med. Phys.*, Vol. 36(9), pp: 3995-4006 (2009).
8. G. A. Ezzell, J.W. Burmeister, **N. Dogan**, T.J. LoSasso, J.G. Mechalakos *et al.* "IMRT Commissioning: Multiple Institution Planning and Dosimetry Comparisons, A Report from AAPM Task Group 119." *Med.Phys.*, Vol. 36(11), pp: 5359-5373 (2009).
9. **N. Dogan**, L. Cuttino, R. Lloyd, E.A. Bump, D.W. Arthur, "Optimized Dose Coverage of Regional Lymph Nodes in Breast Cancer: The Role of Intensity-Modulated Radiotherapy," *Int. J. Rad. Onc. Biol. Phys.*, Vol. 68(4), pp: 1238 –1250 (2007).
10. **N. Dogan**, J.V Siebers, P.J Keall, Y. Wu, F. Lerma, J. F. Williamson, R. K. - Ullrich, "Improving IMRT Dose Accuracy via Deliverable Monte Carlo Optimization for the Treatment of Head and Neck Cancer Patients," *Med. Phys.*, Vol 33 (11), pp: 4033-4043 (2006).
11. **N. Dogan**, J.V Siebers, and P.J Keall, "Evaluation of Absorbed Dose to Medium to Absorbed Dose to Water for Monte Carlo Based Dose Calculations for IMRT Plans," *Phys. Med. Biol.* Vol 51, pp: 4967-4980 (2006).
12. R. Singla R, S. King, K. Albuquerque, S. Creech, **N. Dogan**, "Simultaneous integrated

- boost intensity modulated radiation therapy (SIB-IMRT) in the treatment of early stage left sided breast carcinoma *Med. Dosim.* Vol 31, pp: 190-6 (2006).
13. **N. Dogan**, G. P. Glasgow, "Surface and Build-up Region Dosimetry for Obliquely Incident Intensity Modulated Radiotherapy 6 MV X-Rays", *Med. Phys.*, Vol 30 (12), pp: 3091-3096 (2003).
  14. A. Sethi, L.B. Leybovich, **N. Dogan** and G. Glasgow, "Effectiveness of compensating filters in the presence of tissue inhomogeneities", *JACMP*, Vol 4(3), pp:209-216 (2003).
  15. **N. Dogan**, S. King, B. Emami, L.B. Leybovich, A. Sethi, N. Mohideen, and N. Mirkovic; "Assessment of Different IMRT Boost Delivery Methods on Target Coverage and Normal Tissue Sparing *Int. J. Rad. Onc. Biol. Phys.* Vol 57 (5), pp:1480-1491 (2003).
  16. **N. Dogan**, L.B. Leybovich, A. Sethi, and B. Emami "Automatic feathering of split fields for step-and-shoot IMRT", *Phys. Med. Biol.* Vol 48, pp:1133-1140 (2003).
  17. G.P. Glasgow, **N. Dogan**, L.B. Leybovich, and A. Sethi, "Refined gypsum effective attenuation coefficients for Co-60, 6-, 10-, and 18-MV x-rays", *Phys. Med. Biol* Vol 48, pp:63-71 (2003).
  18. L. Leybovich, A. Sethi, **N. Dogan**; "Comparison of Ionization Chambers of Various Volumes for IMRT Absolute Dose Verification", *Med. Phys* Vol 30(2), pp: 119-123 (2003).
  19. **N. Dogan**, L.B. Leybovich, A. Sethi, B. Emami "Improvement of dose distributions abutment regions of IMRT and electron fields" , *Med. Phys.*, Vol 29 (1), pp:38-44 (2002).
  20. **N. Dogan** , L.B. Leybovich, S. King, A. Sethi, B. Emami, "Improvement of treatment Plans Developed with Intensity-modulated Radiation Therapy for Concave-shaped Head and Neck Tumors", *Radiology*, Vol 223, pp: 57-64 (2002).
  21. **N. Dogan** , N. Mohideen, G.P. Glasgow, K. Keys, and R. Flanagan "Effect of Edema on CT-Based Post Implant Dosimetry", *Int. J. Rad. Onc. Biol. Phys.* Vol 53(2), pp:483-489 (2002).
  22. **N. Dogan**, L.B. Leybovich, A. Sethi, "Comparative Evaluation of EDR2 and XV2 Films for Verification of Intensity Modulated Radiation Therapy Plans", *Phys. Med. Biol.*, Vol 47, pp:4121-4130 (2002).
  23. L.B. Leybovich, A. Sethi, **N. Dogan**, E. Melian, M. Krasin and B. Emami "An Immobilization and localization technique for SRT and IMRT of Intracranial", *JACMP*, Vol 3(4), pp:317-322 (2002).
  24. G.P. Glasgow, **N. Dogan**, and N. Mohideen, "Is an Ir-192 Permanent Seed Implant Feasible for Prostate Brachytherapy?", *Brachytherapy*, Vol. 1, pp:195-203 (2002).
  25. A. Sethi L.B. Leybovich, **N. Dogan**, B. Emami "Matching tomographic IMRT fields with static photon fields" *Med. Phys.*, Vol 28 (12), pp:2459-2465 (2001).
  26. **N. Dogan**, L.B. Leybovich, Sethi, A "A Modified Method of Planning and Delivery for IMRT Treatments", *Int. J. Rad. Onc. Bio. Phys.*, Vol 47, No.1, pp:241-245 (2000).
  27. **N. Dogan** , L.B. Leybovich, A. Sethi, E. Melian, M.J. Krasin, B. Emami, "A that Facilitates an Accurate Comparison between Stereotactic and IMRT Plans", Short

- Paper, Proceedings of 2000 World Congress on Medical Physics and Biomedical Engineering, GBR-03:1-4 (2000).
28. L.B. Leybovich, **N. Dogan**, A. Sethi, “A Method that Significantly Improves Accuracy of MU/Time Calculations for Wedged Asymmetric Fields”, Short Paper, Proceedings of 2000 World Congress on Medical Physics and Biomedical Engineering, E313:1-3 (2000).
  29. L.B. Leybovich, **N. Dogan** , A. Sethi, “A Method of Correcting Dose Distributions Produced by IMRT Planning System”, Short Paper, Proceedings of 2000 World Congress on Medical Physics Physics and Biomedical Engineering, EBR-08:1-3 (2000).
  30. L.B. Leybovich, **N. Dogan** , Sethi, M.J. Krasin, and B. Emami, “ Improvement of Periodic Shifting of Arc Abutment Regions During Tomographic IMRT Delivery”, Med. Phys, **27**, No:7, pp: 1610-1616 (2000).
  31. A. Sethi, L.B. Leybovich, **N. Dogan** “Elimination of Field Size dependence of Enhanced Dynamic Wedge Factors”, Phys. Med. Biol. Vol. 45, pp:3359-3365 2000).
  32. A. Sethi, L.B. Leybovich, **N. Dogan**,”Measured vs. calculated Off-Axis Wedged Dose Distribution”, Short Paper, Proceedings of 2000 World Congress on Medical Physics and Biomedical Engineering, EBR-08:1-4 (2000).
  33. A. Sethi , L.B. Leybovich, **N. Dogan** , “Improvement of target and Critical Structure Doses in CORVUS IMRT Treatment Plans”, Short Paper, Proceedings of 2000 Congress on Medical Physics and Biomedical Engineering GBR-05:1-4 (2000).
  34. **N. Dogan**, D.K. Wehe, “Efficiency and angular Resolution Calculations for A Prototype Multiple Compton Scatter Camera”, NIM in Physics Research, **A345**, pp: 296-302, (1994).
  35. J.B. Martin, **N. Dogan**, J.E. Gormley, G.F. Knoll, M. O’Donnell and D.K. Wehe, “Imaging Multi- Energy Gamma-ray Fields with a Compton Scatter Camera”, IEEE Transactions on Nuclear Science, Vol. 41, No.4, pp. 1019-1025 (1994).
  36. J.B. Martin, G.F. Knoll, D.K. Wehe, and **N. Dogan**, V. Jordanov, N. Petrick, M. Singh, “A Ring Compton Scatter Camera for Imaging Medium Energy Gamma Rays”, IEEE Transactions on Nuclear Science, Vol. 40, No. 4, pp. 972-980 (1993).
  37. **N. Dogan**, D.K. Wehe, and A.Z. Akcasu, “ A Source reconstruction Method for Multiple Scatter Compton Cameras”, IEEE Transactions on Nuclear Science, Vol. 39, No. 5, pp.1427-1430 (1992).
  38. **N. Dogan**, D.K. Wehe and G.F. Knoll, “Multiple Compton Scattering Gamma Ray Imaging Camera”, NIM, Vol. A299, pp. 501-506 (1990).
  39. **N. Dogan**, Y. Sanalan, “The Measurement of the Decaying Neutron Parameters in Water”, **NATURE** Turkish Journal of Engineering and Environmental Sciences, Vol. 14, No.1, pp. 39-49, (1990).

### **Books and Monographs**

1. R. K. Schmidt-Ullrich, D. Buck, M. Morris, Y. Wu, **N. Dogan**, and J.V. Siebers, “IMRT for Carcinomas of the Oropharynx and oral Cavity,” IMRT Handbook: Concepts & Clinical Applications, published (2005).

2. Douglas W Arthur, Monica M Morris, Frank Vicini, and **N. Dogan**, "Breast IMRT," IMRT Handbook: Concepts & Clinical Applications, published (2005).

### **Other works, publications and abstracts**

1. M. Fatyga, **N Dogan**, W Sleeman, J. Williamson, M. Schutzer, S. Song. "Assessment of Quantitative Differences between Different Deformable Image Registration Algorithms for Image Guided Radiotherapy of Head and Neck Cancer Patients" Med. Phys. (2012).
2. **N. Dogan** and Y. Wu. "Assessment of Improved Critical Structure Sparing Using Biologically-Based Optimization for Volumetric Modulated Arc Therapy of Head and Neck Cancer" Med. Phys (2012).
3. **N Dogan**, W Sleeman, M Fatyga, G Hugo, G Christensen, and E Weiss. "Evaluation of Inter- Fraction Deformable Registration of 4DCT Scans: Direct vs. Composed Registration, " Med. Phys. 38, 3452 (2011).
4. B Zhang, M Fatyga, W Sleeman, and **N Dogan**. "An Integrated IGART Planning Environment," Med. Phys. 38, 3492 (2011).
5. M Fatyga, **N Dogan**, K Wijesooriya, W Sleeman, B Zhang, and G Christensen. "Volume Based Comparison of Deformable Image Registration Algorithms Using Spatial Discrepancy Volume Histograms," Med. Phys. 38, 3551 (2011).
6. **N. Dogan** and Y. Wu. "Volumetric Modulated Intensity Modulated Arc Therapy for Stereotactic Lung Radiotherapy: Constant Dose Rate versus Variable Dose Rate Delivery," Radiotherapy and Oncology, Volume 99, Supplement 1, May 2011, Page S499.
7. **N. Dogan**, W. Sleeman, S. Song, G. Christensen. "Evaluation of a Non-Rigid Registration Algorithm for Registration of Serial CT Images of Head and Neck Radiotherapy," International Journal of Radiation Oncology\*Biophysics\*Physics, Volume 81, Issue 2, Supplement, 1 October 2011, Page S828.
8. **N. Dogan**, W.Sleeman IV, M. Fatyga, W. Lehman, MS., G. Christensen, J.Wu, B. Zhang, S. Song and J. F. Williamson: Verification of a Deformable Image Registration Algorithm for Head and Neck Cancer Therapy, Med. Phys. Vol.37, pp:3155 (2010).
9. **N. Dogan**, W. Sleeman, M. Fatyga, W. Lehman, E. Weiss, G. Christensen, J. Williamson: Evaluation of Dosimetric Effects of Use of Deformably-Mapped Contours for Lung IMRT Treatment Planning, IJORB, Vol.78 ( 3), Suppl. 1, pp: S727-S728 (2010).
10. Y. Wu, **N. Dogan**, and X. Liang: Assessment of Volumetric Arc Therapy Plans for Constant and Variable Dose Rates, Med. Phys. Vol.37, pp: 3350 (2010).
11. JJ Gordon, E. Weiss, A. Aboyomi, **N. Dogan**: The effect of uterine motion and uterine margins on target and normal tissue doses in intensity modulated radiation therapy of cervical cancer, Med. Phys. Vol.37, pp:3430 (2010).
12. M. Murphy, J. Wu, S. Song, **N. Dogan**: Comparisons of Multiple Anatomy-based Image- guidance Methods for Patient Setup before Head and Neck External-beam Radiotherapy, IJORB, Vol.78(3), Suppl. 1, pp: S684-S685 (2010).
13. **N. Dogan**, D. J. Vile, D. Zhenq, E. Weiss, J. Lu, J. Williamson: Incorporation of Daily Kilovoltage Cone- Beam Computed Tomography Imaging Dose into IMRT Plan Optimization. Radiotherapy and Oncology, Vol.96, Suppl. 1, pp: S436-S437 (2010).

14. B. Zhang, W. Sleeman, **N. Dogan**, M. Fatyga: An Integrated Software Environment for Image Guided Adaptive Radiation Therapy Research. *Med. Phys.* 37, 3245 (2010).
15. **N. Dogan**, W. Sleeman IV, C. Yan, M. Fatyga, B. Zhang, S. Song, G. Christensen: Quantitative Assessment of Automatic Anatomy Segmentation Using a Deformable Image Registration Algorithm for Head and Neck Cancer Therapy. *Radiotherapy&Oncology*, 92(1), pp: S120 (2009).
16. **N. Dogan**, W. Sleeman IV, W. Lehman, C. Yan, M. Fatyga, J. Wu, G. Christensen, G. Hugo, E. Weiss, and J.F. Williamson: Quantitative Assessment of Automatic Anatomy Segmentation of 4D CT Images Using a Deformable Image Registration. *Med. Phys.*, 36(6), pp: 2711, (2009).
17. H. Saleh, J. Williamson, **N. Dogan**, T. Chung: Assessing Intrafraction Motion for Cranial Tumor Patients Treated with Hypofractionated Radiation Therapy Using Repeated Imaging. *Med. Phys.*, 36(6), pp: 2504, (2009).
18. **N. Dogan**, J. Shumadine, M. Murphy, H. Saleh and S. Song: Comparison of head and Neck IMRT Setup Accuracy and Reproducibility using Different On-board Imaging System, *Int. J. Rad. Oncol. Bio. Phys.*, Issue 1, Suppl 1, pp: S595, (2008).
19. **N. Dogan**, J. Shumadine, M. Murphy, H. Saleh and S. Song: Quantification of IMRT Patient Dose Deviations Due to Daily MLC-Leaf Positional Variations. *Radiotherapy & Oncology*, September (2008).
20. **N. Dogan**, H. Saleh, M. Fatyga, C. Barteel, J. Siebers: Quantification of IMRT Patient Dose Deviations Due to Daily MLC-Leaf Positional Variations. *Med. Phys*, 35, pp: 2759 (2008).
21. D. Zheng, J. Lu, J. Wu, E. Weiss, **N. Dogan** and J. Williamson: A protocol to Extend On- board Cone-Beam CT Longitudinal Coverage with Multiple Orbits, *Med. Phys.*, 35, pp:2640 (2008).
22. M. Sleeman, **N. Dogan**, J. Siebers, M. Murphy, J. Williamson, M. Fatyga: Design and Implementation of a Computing Framework for An Image Guided Adaptive Radiotherapy Research Program. *Med. Phys*, 35, pp: 2814 (2008).
23. **N. Dogan** and Y. Wu: Use of Adaptive Filtering and Intensity Limits in Deliverable IMRT Optimization to Improve Delivery Efficiency. *Med. Phys*, 34, pp: 2593 (2007).
24. **N. Dogan**, L. Cuttino, J. Shumadine, and S. Song: Improvements for of Head and Neck Intensity Modulated Radiotherapy (IMRT) of Patient Plans via Repeat CT imaging and Re- planning. *Int. J. Rad. Oncol. Bio. Phys.*, 69 (3), Suppl 1, pp: S431 (2007).
25. Fatyga, M., Williamson, J., **N. Dogan**, N., Todor, D., Siebers, J., George, R., Hagan, M., Barani, I.: HDR Brachytherapy and Online Image-Guided Adaptive IMRT for Dose Escalation in Prostate Cancer: Comparison of Brachytherapy and IMRT Boosts. *Med. Phys*, 34, pp: 2632 (2007).
26. H. Saleh, **N. Dogan** and J. Williamson, "Comparison of Daily Setup Corrections Using On- Board Cone-Beam Computed Tomography, and Two Planar Kilovoltage Imaging Systems". *Med. Phys*, 34, pp: 2382 (2007).
27. Z. Su, **N. Dogan**, Y. Wu and S. Stojadinovic, "Dosimetric Comparisons of DMPO and Two- Step Approach Step-And-Shoot IMRT Plans". *Med. Phys*, 34, pp: 2335 (2007).
28. M. Hagan, D. Todor, **N. Dogan**, Y. Wu, M. Anscher and D. Arthur, "Phase I/II Trial of HDR-Brachytherapy Boosted Comprehensive IMRT for Intermediate-

- Risk Adenocarcinoma of the Prostate”. *Int. J. Rad. Oncol. Bio. Phys.*, 69 (3), Suppl 1, pp: S363 (2007).
29. R. George and **N. Dogan**, “Assessment of IMRT Plans Optimized With Deliverable Step and Shoot (SS) and Dynamic MLC (DMLC) Techniques”. *Int. J. Rad. Oncol. Bio. Phys.*, 69 (3), Suppl 1, pp: S715-S716 (2007).
  30. **N. Dogan**, Y. Wu, M.P. Hagan, Simultaneous-Integrated Boost (SIB) IMRT for Treatment of Intermediate-risk Prostate Cancer with Nodal Irradiation,” *Int. J. Rad. Oncol. Bio. Phys.* (2006).
  31. **N. Dogan**, L. Cuttino, J. Shumadine, S. Song, “Re-planning of Intensity Modulated Radiotherapy (IMRT) for Head and Neck Cancer Patients,” *Radiotherapy and Oncology*, 81(1), pp: S228-S229(2006).
  32. **N. Dogan**, I. Mihaylov, Y.Wu, and P.J Keall and J.V Siebers, “Monte Carlo Dose Verification of Prostate Patients Treated with SIB IMRT,” *Med. Phys.*(2006).
  33. **N. Dogan**, J.V Siebers, and P.J Keall, “Evaluation of Absorbed Dose to Medium to Absorbed Dose to Water for Monte Carlo Based Dose Calculations for IMRT Plans,” presented at 2005 AAPM meeting in Seattle, WA (2005).
  34. **N. Dogan**, O. Abayomi “Evaluation of Forward and Inverse Planned Intensity Modulated Radiation Therapy Plans for the Treatment of Cervix and Pelvic Nodes,” *Int. J. Rad. Oncol. Bio. Phys.* (2005).
  35. . J.F. Williamson, M. Fatyga, **N. Dogan**, M. Hagan, J. Siebers, D. Todor “Combined HDR Brachytherapy and Online Image-Guided Adaptive IMRT for Dose Escalation in Locally Advanced Carcinoma of the Prostate,” *Int. J. Rad. Oncol. Bio. Phys.* (2005).
  36. L. W. Cuttino, **N. Dogan**, E. A. Bump, D. W. Arthur “Optimized Dose Coverage of regional lymph nodes in breast cancer: The role of intensity modulated radiation therapy (IMRT),” *Int. J. Rad. Oncol. Bio. Phys.* (2005).
  37. **N. Dogan**, G.P. Glasgow, “Effect of Minimum Segment Size and Number of Intensity Levels on Step-and-Shoot IMRT Plans,” *Med. Phy.* (2004).
  38. **N. Dogan** and N. Mohideen, “Correlation Between Fractional Rectal Doses and rectal Toxicity in Patients Treated with Combined External Beam plus Low Dose Rate Brachytherapy for Prostate Cancer”, proceedings of RSNA meeting, December (2003).
  39. **N. Dogan**, G. P. Glasgow “Surface and Build-up Region Dosimetry for Obliquely Incident Intensity Modulated Radiotherapy 6 MV X-Rays”, *Med. Phys.* (2003).
  40. **N. Dogan**, L.B. Leybovich, A. Sethi, “Evaluation of an IMRT Planning System for Step- and-Shoot IMRT”, *Med. Phys.*, July (2002).
  41. **N. Dogan**, L.B. Leybovich, A. Sethi, B. Emami “Improvement of dose distributions in abutment regions of IMRT and electron fields” *Med. Phys.* (2001).
  42. L.B. Leybovich, **N. Dogan**, A. Sethi, “Film dosimetry of radiation using mixed beams: Photon beams of different energies; electron beams of different energies; combination of photon-electron beams of different energies:” *Med. Phys.* (2001).
  43. **N. Dogan**, S. King, L.B. Leybovich, A. Sethi, B. Emami, “Assessment of Different Methods of Boost Delivery (IMRT vs. 3-D Conformal) on Target Coverage and Normal Tissue Sparing”, *Int. J. Rad. Oncol. Bio. Phys.* (2001).
  44. **N. Dogan** , N. Mohideen, K. Keys, L.B. Leybovich, G. Glasgow, A. Sethi, R. Flannigan, “ Effect of Prostatic Edema on CT-based Post Implant Dosimetry”,



- Radiother Oncol, Vol. 55 (1), pp:135(2000).
45. **N. Dogan** , L.B. Leybovich, S. King, A. Sethi, B. Emami, “Comparison of treatment Plans Developed for Concave-Shaped Head and Neck Tumors: IMRT versus 3-D Conformal and 2-D Techniques”, Int. J. Rad. Oncol. Bio. Phys. (2000).
  46. L.B. Leybovich, **N. Dogan**, A. Sethi, B. Emami, “Comparison of IMRT Plans for treatment of Paranasal Sinus and Nasopharynx Tumors: Tomographic Technique with and without couch angulation and MLC-based Step-and-Shoot Technique with Coplanar and NonCoplanar Beams”, Presented Int. J. Rad. Oncol. Bio. Phys. (2000).
  47. L.B. Leybovich, E. Melian, **N. Dogan** , and A. Sethi “An Applicator for Conformal HDR Brachytherapy of Tracheostoma Recurrences”, Radiother Oncol, Vol. 55 (1),:126(2000).
  48. G. Yasuda, A. Sethi, , L.B. Leybovich, **N. Dogan** , W. Thorstad, B. Emami, “Improved Sparing of Critical Structures in Treatment of Lung Cancer: 3DCRT versus IMRT”, Supplement to Radiology, 217(P), pp. 265 (2000).
  49. A. Sethi, N. Mohideen, L.B. Leybovich, **N. Dogan**, Mulhall, B. Emami, “The role of IMRT in reducing Corporal Bodies Dose in Radiation Treatment of Prostate Cancer”, Supplement to Radiology, 217(P), pp. 409 (2000).
  50. **N. Dogan**, L.B. Leybovich, Sethi, A “A Modified Method of Planning and Delivery for Treatments”, Med. Phys. (1999).
  51. **N. Dogan** , Mohideen, L.B. Leybovich, Sethi, Analysis of the Quality of prostate Using dose Volume Histograms and Homogeneity Indexes”, Med. Phys., 26, No:6, pp:1145 (1999).
  52. L.B. Leybovich, A, Sethi, **N. Dogan** “Elimination of field Size dependence of Enhanced Dynamic Wedge Factors”, Med. Phys., 26, No:6, pp:1152 (1999).
  53. A, Sethi, L.B. Leybovich, G. Glasgow, I. Ouyang, **N. Dogan**, H. Forgione, “A Modified Rotational Hemi-body Electron Therapy Technique”, Med. Phys., 26, No: 6, pp:1150 (1999).
  54. L.B. Leybovich, A, G. Glasgow, Sethi, G. Simon-Mumper, **N. Dogan** “Evaluation of Wedge Angles in Half-blocked Fields”, Med. Phys., 26, No:6, pp:1104 (1999).
  55. **N. Dogan**, M. J. Balbes, M. Fatyga, J. F. Williamson, “A Commercial Implementation of TG43 Dose Calculation Algorithm”, Med. Phys., 25, No:7, pp:A170 (1998).
  56. L.S. McCourt II, **N. Dogan**, W. Lodwick, and F. Newman, “A Robust Linear Programming Model for Teletherapy Dose Optimization”, Med. Phys., 24, No:6,:1079 (1997).
  57. **N. Dogan**, J.J.H. Kim, M.L. Kessler, D.L. McShan, “Computer-Aided Optimization of Conformal Radiotherapy Treatment Plans”, Med. Phys., 21, No:6, pp:1010 (1994).

## V. Professional

### **Funded Research Performed**

1. April 1, 2007 - March 31, 2012 - NIH Program Project Grant 5 P01 CA116602-03 – Image-Guided Adaptive Radiotherapy (Principle Investigator: Jeffrey F. Williamson, Ph.D)  
**Role : Core A Leader** – Software Engineering, Treatment Planning and QA for IGART  
**Percent Effort: 25%**  
**Core A Total Funding** : Total - \$2,285,280.00 Indirect Cost: \$659,259.00, Direct Cost: \$1,626,021.00
2. January 1, 2011 – January 1, 2012 - VCU Massey Cancer Center Translational Research Grant - A phase I/II dose escalation trial using concurrent intensity-modulated radiotherapy (IMRT) and chemotherapy using image-guided adaptive radiation therapy (IGART) with molecular-image guidance for advanced head and neck squamous cell carcinomas (HNSCC) (Principle Investigator: Shiyu Song, M.D., Ph.D.)  
**Role : Co-investigator**  
**Percent Effort: 10%**  
**Total Funding:** Cost of 50% research dosimetrist, 50% graduate student and all images

### **Editorial Responsibilities**

1. Senior Associate Editor, International Journal of Radiation Oncology Biology Physics (2011-present).
2. Reviewer, Medical Physics, the International Journal of Radiation Oncology Physics, Radiotherapy and Oncology, Physics in Medicine and Biology, the Journal of Applied Clinical Medical Physics, Radiation Oncology (2003 – present).
3. Invited Associate Editor, Medical Physics Journal (2003-present).

### **Professional and Honorary Organizations**

1. Member, AAPM Budget Subcommittee (2013-2015).
2. Member, AAPM Finance Committee (2013-2015).
3. Member, Ad Hoc Committee to review Editor Compensation (2012-Present).
4. AAPM Board of Director as MAC-AAPM Board Representative (2009–Present).
5. President, MAC-AAPM (2008–2009).
6. Member of ASTRO Radiation Physics Committee (2008–2009).
7. Member of ASTRO Research Counsel (2009– 2010).
8. Member of AAPM Task Group 119 (2006– 2010).

9. Member of AAPM IMRT Workgroup (WGIMRT) (2008 – present).
10. Consultant, Work Group on Coordination of Medical Physics Residency Programs (2012 –Present).
11. Member, Work Group on Coordination of Medical Physics Residency Programs (2006 – 2011).
8. Member of ASTRO (2003– present).
9. Member of ESTRO (2005 – present).
10. Member of AAPM (1994 – present).

### **Honors and Awards**

- 1.

### **Post-Doctoral Fellowships**

1. Department of Radiation Oncology, the University of Michigan Medical Center, Ann Arbor, Michigan (1993 - 1995).
2. Department of Nuclear Engineering and Radiological Sciences, the University of Michigan, Ann Arbor, Michigan (May1993 - Sept 1993).

### **Other Professional Activities**

#### **Invited Lectures**

1. Infra-structure to Support IMRT, Veterans Hospitals Radiation Oncology Meeting, Washington DC, January 9 (2009).
2. IMRT Planning and Dosimetry, Turkish Medical Physics Meeting, Antalya, Turkey November 13- 18 (2007).
3. IGRT Planning and QA, Turkish Medical Physics Meeting, Antalya, Turkey, November 13- 18 (2007).
4. Tools for IMRT QA, AAPM Meeting, Seattle, WA, July 23- 27 (2005).
5. IMRT: Concepts and Clinical Use, Turkish Radiation Oncology Association Meeting, Antalya, Turkey, April 21-25 (2004)
6. Implementation of a Clinical IMRT Program, IMPAC's Midwestern IMRT Meeting, Chicago, IL, April 18 (2002)
7. NTCP/TCP Models: Concepts and Clinical Use, KMS Users Meeting and Japanese Radiation Oncology Meeting, Yokohama, Japan, April 6 (2000)
8. Interactive and Autonomous Optimization Tools for 3-D Conformal Radiation Therapy”, invited lecture, Department of Nuclear Engineering and Radiological Sciences, The University of Michigan, March 24 (1995)

#### **Scientific Meeting Chair**

1. Chair, Scientific Session, AAPM 49<sup>th</sup> Annual Meeting, Minneapolis, MN (2007).
2. Chair, Scientific Session, AAPM 50<sup>th</sup> Annual Meeting, Huston, TX (2008).
3. Chair, Scientific Session, ASTRO 52<sup>nd</sup> Annual Meeting, San Diego, CA (2010).

4. Chair, Scientific Session, AAPM 53<sup>rd</sup> Annual Meeting, Vancouver, Canada (2011).

### **Abstract Reviews**

1. Reviewer, AAPM 47<sup>th</sup> Annual Meeting Scientific Abstracts, Seattle, WA (2005)
2. Reviewer, AAPM 48<sup>th</sup> Annual Meeting Scientific Abstracts, Orlando, FL (2006)
3. Reviewer, AAPM 49<sup>th</sup> Annual Meeting Scientific Abstracts, Minneapolis, MN (2007)
4. Reviewer, AAPM 50<sup>th</sup> Annual Meeting Scientific Abstracts, Huston, TX (2008)
5. Reviewer, AAPM 51<sup>th</sup> Annual Meeting Scientific Abstracts, Anaheim, CA (2009)
6. Reviewer, AAPM 53<sup>rd</sup> Annual Meeting Scientific Abstracts, Vancouver, Canada (2011)
7. Reviewer, ASTRO 51<sup>th</sup> Annual Meeting Scientific Abstracts, Chicago, IL (2009)
8. Reviewer, ASTRO 52<sup>nd</sup> Annual Meeting Scientific Abstracts, San Diego, CA (2010).
9. Reviewer, ASTRO 53<sup>rd</sup> Annual Meeting Scientific Abstracts, Miami Beach, FL (2011).

### **Papers Presented at Scientific Meetings**

#### **International:**

1. **N. Dogan**, and Yan Wu: Volumetric Modulated Intensity Modulated Arc Therapy for Stereotactic Lung Radiotherapy: Constant Dose Rate versus Variable Dose Rate Delivery, presented at 2011 ESTRO meeting, London, England, May 8-12, 2011.
2. **N. Dogan**, D. Vile, D. Zhenq, E. Weiss, J. Lu, J. Williamson: Incorporation of Daily Kilovoltage Cone- Beam Computed Tomography Imaging Dose into IMRT Plan Optimization, presented at 2010 ESTRO 29 meeting, Barcelona, Spain, September 12-16, 2010.
3. **N. Dogan**, W. Sleeman IV, C. Yan, M. Fatyga, B. Zhang, S. Song, G. Christensen: Quantitative Assessment of Automatic Anatomy Segmentation Using a Deformable Image Registration Algorithm for Head and Neck Cancer Therapy, presented at 2009 10<sup>th</sup> Biennial ESTRO conference Physics and Radiation Technology for Clinical Radiotherapy, Maastricht, Netherlands, August 30-September 3, 2009.
4. **N. Dogan**, M. Murphy, J. Shumadine, H. Saleh and S. Song: Assessment of Setup Errors using Three Different In-room Imaging Systems in Treatment of Head and Neck IMRT Patients, Presented at 2008 Annual ESTRO meeting in Goteburg, Sweden, September 2008.
5. **N. Dogan**, L. Cuttino, R. Lloyd, E.A. Bump, D.W. Arthur, "The role of intensity modulated radiation therapy in regional lymph node coverage in breast cancer, Presented at 2007 Annual ESTRO meeting in Barcelona, Spain, September 2007.
6. **N. Dogan**, Invited lecture on "IMRT Planning and Dosimetry", Turkish Medical Physics Meeting, Antalya, Turkey November 13- 18 (2007).
7. **N. Dogan**, Invited lecture on "IGRT Planning and QA", Turkish Medical Physics Meeting, Antalya, Turkey, November 13- 18 (2007).
8. **N. Dogan**, L. Cuttino, J. Shumadine and S. Song "Re-Planning of Intensity Modulated Radiotherapy for Head and Neck Cancer patients," presented at 2006 ESTRO Physics meeting in Leipzig, Germany (2006).
9. **N. Dogan**, J.V Siebers, P.J. Keall, and A. K. Abayomi, "The Effect of Random and Systematic Patient Positioning Setup Errors on IMRT Dose Distributions for Patients with Carcinoma of the Cervix," presented at 2005 ESTRO Physics meeting in Lisbon, Portugal (2005).
10. **N. Dogan**, J.V Siebers, P.J Keall, Y. Wu, F. Lerma, J. F. Williamson, R. K. Schmidt- Ullrich, "Improving IMRT Dose Accuracy via Deliverable Monte Carlo Optimization for the Treatment of

Head and Neck Cancer Patients,” presented at 2004 ESTRO meeting in Amsterdam, Netherlands (2004).

11. **N. Dogan**, Invited lecture on “IMRT: Concepts and Clinical Use”, Turkish Radiation Oncology Association Meeting, Antalya, Turkey, April 21-25 (2004).
12. **N. Dogan**, S. King, and B. Emami “Sequential vs. Simultaneous Boost IMRT for Head and Neck Patients”, presented at the ESTRO meeting in Geneva, Switzerland, September (2003).
13. **N. Dogan**, L.B. Leybovich, A. Sethi, “Automatic feathering of split fields for step-and-shoot IMRT”, presented at 2002 ESTRO meeting in Prague (2002).
14. **N. Dogan**, L.B. Leybovich, A. Sethi, “Investigation of dose distributions in adjacent Static Step-and-Shoot IMRT and electron fields”, presented at 2001 6<sup>th</sup> ESTRO Physics meeting in Seville, Spain, September 17-20(2001).
15. **N. Dogan**, L.B. Leybovich, A. Sethi, “Comparison of Static Step-and-Shoot IMRT Plans Developed by two Different Commercial Treatment Planning Systems: NOMOS- CORVUS vs. CMS-FOCUS”, presented at 2001 6<sup>th</sup> ESTRO Physics meeting in Seville, Spain, September 17-20(2001).
16. **N. Dogan** , L.B. Leybovich, A. Sethi, B. Emami, “Comparison of IMRT Plans for Treatment of Head and Neck Cancers Using Modified and Unmodified Tomographic MLC-based Static Step-and-Shoot techniques”, presented at 19<sup>th</sup> ESTRO meeting in Istanbul,Turkey, September 19-23(2000).
17. **N. Dogan** , L.B. Leybovich, Sethi, M.J. Krasin, and B. Emami, “ Optimization of Periodic Shifting of Arc Abutment Regions During Tomographic IMRT Delivery”, Presented at First International Workshop on IMRT in Clinical Practice held in Brussels, Belgium, June 8-9. Proceedings of the First International Workshop on IMRT in Clinical Practice, Brussels, pp: 33 (2000).
18. **N. Dogan**, *Invited lecture* on “NTCP/TCP Models: Concepts and Clinical Use”, KMS Users Meeting and Japanese Radiation Oncology Meeting, Yokohama, Japan, April 6 (2000).

### **National:**

1. M. Fatyga, **N Dogan**, W Sleeman, J. Williamson, M. Schutzer, S. Song. "Assessment of Quantitative Differences between Different Deformable Image Registration Algorithms for Image Guided Radiotherapy of Head and Neck Cancer Patients" Presented at Annual AAPM Meeting in Charlotte, NC (2012).
2. **N. Dogan** and Y. Wu. "Assessment of Improved Critical Structure Sparing Using Biologically-Based Optimization for Volumetric Modulated Arc Therapy of Head and Neck Cancer" Presented at Annual AAPM Meeting in Charlotte, NC (2012).
3. **N Dogan**, W Sleeman, M Fatyga, G Hugo, G Christensen, and E Weiss. "Evaluation of Inter- Fraction Deformable Registration of 4DCT Scans: Direct vs. Composed Registration, Presented at Annual AAPM Meeting in Vancouver, Canada (2011).
4. B Zhang, M Fatyga, W Sleeman and **N Dogan**."An Integrated IGART Planning Environment," Presented at Annual AAPM Meeting in Vancouver, Canada (2011).
5. M Fatyga, **N Dogan**, K Wijesooriya, W Sleeman, B Zhang, and G Christensen. "Volume Based Comparison of Deformable Image Registration Algorithms Using Spatial Discrepancy Volume Histograms," Presented at Annual AAPM Meeting in Vancouver, Canada (2011).
6. **N. Dogan**, W. Sleeman, S. Song, G. Christensen. "Evaluation of a Non-Rigid Registration Algorithm for Registration of Serial CT Images of Head and Neck Radiotherapy," Presented at Annual ASTRO Meeting in Miami Beach, FL (2011).
7. **N. Dogan**, W.Sleeman IV, M. Fatyga, W. Lehman, MS., G. Christensen, E. Weiss andJ. F. Williamson: Evaluation of Dosimetric Effects of Use of Deformably-Mapped Contours for

- Lung IMRT Treatment Planning, presented at annual ASTRO meeting in San Diego, CA, October, 2010.
8. **N. Dogan**, W. Sleeman IV, M. Fatyga, W. Lehman, MS., G. Christensen, J. Wu, B. Zhang, S. Song and J. F. Williamson: Verification of a Deformable Image Registration Algorithm for Head and Neck Cancer Therapy, presented at annual AAPM meeting in Philadelphia, PA, July 18-22, 2010.
  9. Y. Wu, **N. Dogan**, and X. Liang: Assessment of Volumetric Arc Therapy Plans for Constant and Variable Dose Rates, presented at annual AAPM meeting in Philadelphia, PA, July 18-22, 2010.
  10. JJ Gordon, E. Weiss, A. Aboyomi, **N. Dogan**: The effect of uterine motion and uterine margins on target and normal tissue doses in intensity modulated radiation therapy of cervical cancer, Med. presented at annual AAPM meeting in Philadelphia, PA, July 18-22, 2010.
  11. B. Zhang, W. Sleeman, **N. Dogan**, M. Fatyga: An Integrated Software Environment for Image Guided Adaptive Radiation Therapy Research, presented at annual AAPM meeting in Philadelphia, PA, July 18-22, 2010.
  12. **N. Dogan**, W. Sleeman, M. Fatyga, W. Lehman, E. Weiss, G. Christensen, J. Williamson: Evaluation of Dosimetric Effects of Use of Deformably-Mapped Contours for Lung IMRT Treatment Planning, presented at annual ASTRO meeting in San Diego, CA, October 31 - November 5, 2010.
  13. M. Murphy, J. Wu, S. Song, **N. Dogan**: Comparisons of Multiple Anatomy-based Image-guidance Methods for Patient Setup before Head and Neck External-beam Radiotherapy, presented at annual ASTRO meeting in San Diego, CA, October 31 - November 5, 2010.
  14. **N. Dogan**, L. Francis, M.S. Anscher: Verification of Prostate Patient Setup Localization with Electromagnetic Transponders using Kilovoltage Imaging. Presented at 2009 ASTRO annual meeting, Chicago, IL, November 1-5, 2009.
  15. **N. Dogan**, W. Sleeman IV, W. Lehman, C. Yan, M. Fatyga, J. Wu, G. Christensen, G. Hugo, E. Weiss, and J.F. Williamson: Quantitative Assessment of Automatic Anatomy Segmentation of 4D CT Images Using a Deformable Image Registration. Presented at 2009 Annual AAPM meeting in Anaheim, CA, July 2009.
  16. H. Saleh, J. Williamson, **N. Dogan**, T. Chung: Assessing Intrafraction Motion for Cranial Tumor Patients Treated with Hypofractionated Radiation Therapy Using Repeated Imaging. Presented at 2009 Annual AAPM meeting in Anaheim, CA, July 2009.
  17. **N. Dogan**, *Invited lecture* on "Infra-structure to Support IMRT", Veterans Hospitals Radiation Oncology Meeting, Washington DC, January 9 (2009).
  18. **N. Dogan**, H. Saleh, M. Fatyga, C. Bartee, J. Siebers: Quantification of IMRT Patient Dose Deviations Due to Daily MLC-Leaf Positional Variations. Presented at 2008 Annual AAPM meeting in Houston, Texas, July 2008.
  19. **N. Dogan**, H. Saleh, M. Fatyga, C. Bartee, J. Siebers: Quantification of IMRT Patient Dose Deviations Due to Daily MLC-Leaf Positional Variations. Presented at 2008 Annual AAPM meeting in Houston, Texas, July 2008.

20. **N. Dogan**, H. Saleh, M. Fatyga, C. Bartee, J. Siebers: Quantification of IMRT Patient Dose Deviations Due to Daily MLC-Leaf Positional Variations. Presented at 2008 Annual AAPM meeting in Houston, Texas, July 2008.
21. D. Zheng, J Lu, J Wu, E Weiss, **N. Dogan**, and J Williamson.,: A Protocol to Extend On-Board Cone-Beam CT Longitudinal Coverage with Multiple Orbits. Presented at 2008 Annual AAPM meeting in Houston, Texas, July 2008.
22. M. Sleeman, **N. Dogan**, J. Siebers, M. Murphy, J. Williamson, M. Fatyga: Design and Implementation of a Computing Framework for An Image Guided Adaptive Radiotherapy Research Program. Presented at 2008 Annual AAPM meeting in Houston, Texas, July 2008.
23. **N. Dogan**, J. Shumadine, M. Murphy, H. Saleh and S. Song: Comparison of Head -and Neck IMRT Setup Accuracy and Reproducibility using Different On-board Imaging Systems,” Presented at 2008 Annual ASTRO meeting in Boston, Massachusetts, September 2008.
24. **N. Dogan** and Y. Wu: Use of Adaptive Filtering and Intensity Limits in Deliverable IMRT Optimization to Improve Delivery Efficiency. Presented at 49<sup>th</sup> Annual American Association of Physicists in Medicine (AAPM) Meeting, Minneapolis, Minnesota, July 2007.
25. **N. Dogan**, L. Cuttino, J. Shumadine, and S. Song: Improvements for of Head and Neck Intensity Modulated Radiotherapy (IMRT) of Patient Plans via Repeat CT imaging and Re-planning. Presented at 2007 Annual ASTRO meeting in Los Angeles, CA, October 2007.
26. Fatyga, M., Williamson, J., **N. Dogan**, N., Todor, D., Siebers, J., George, R., Hagan, M., Barani, I.: HDR Brachytherapy and Online Image-Guided Adaptive IMRT for Dose Escalation in Prostate Cancer: Comparison of Brachytherapy and IMRT Boosts. Presented at 49<sup>th</sup> Annual American Association of Physicists in Medicine (AAPM) Meeting, Minneapolis, Minnesota, July 2007.
27. H. Saleh, **N. Dogan** and J. Williamson, “Comparison of Daily Setup Corrections Using On-Board Cone-Beam Computed Tomography, and Two Planar Kilovoltage Imaging Systems”. Presented at 49<sup>th</sup> Annual American Association of Physicists in Medicine (AAPM) Meeting, Minneapolis, Minnesota, July 2007.
28. Z. Su, **N. Dogan**, Y. Wu and S. Stojadinovic, “Dosimetric Comparisons of DMPO and Two-Step Approach Step-And-Shoot IMRT Plans”. Presented at 49<sup>th</sup> Annual American Association of Physicists in Medicine (AAPM) Meeting, Minneapolis, Minnesota, July 2007.
29. M. Hagan, D. Todor, **N. Dogan**, Y. Wu, M. Anscher and D. Arthur, “Phase I/II Trial of HDR-Brachytherapy Boosted Comprehensive IMRT for Intermediate-Risk Adenocarcinoma of the Prostate”. Presented at 2007 Annual ASTRO meeting in Los Angeles, CA, October 2007.
30. R. George and **N. Dogan**, “Assessment of IMRT Plans Optimized With Deliverable Step and Shoot (SS) and Dynamic MLC (DMLC) Techniques. Presented at 2007 Annual ASTRO meeting in Los Angeles, CA, October 2007.
31. **N. Dogan**, Y. Wu, M.P. Hagan, Simultaneous-Integrated Boost (SIB) IMRT for Treatment of Intermediate-risk Prostate Cancer with Nodal Irradiation,” presented at 2006 ASTRO meeting in Philadelphia, PA(2006).
32. **N. Dogan**, I. Mihaylov, Y.Wu, and P.J Keall and J.V Siebers, “Monte Carlo Dose Verification of Prostate Patients Treated with SIB IMRT,” presented at 2006 AAPM meeting in Orlando, FL (2006).
33. **N. Dogan**, J.V Siebers, and P.J Keall, “Evaluation of Absorbed Dose to Medium to Absorbed

- Dose to Water for Monte Carlo Based Dose Calculations for IMRT Plans,” presented at 2005 AAPM meeting in Seattle, WA (2005).
34. **N. Dogan**, O. Abayomi “Evaluation of Forward and Inverse Planned Intensity Modulated Radiation Therapy Plans for the Treatment of Cervix and Pelvic Nodes,” Presented at 2005 ASTRO meeting, Denver, CO (2005).
  35. J.F. Williamson, M. Fatyga, **N. Dogan**, M. Hagan, J. Siebers, D. Todor “Combined HDR Brachytherapy and Online Image-Guided Adaptive IMRT for Dose Escalation in Locally Advanced Carcinoma of the Prostate,” Presented at 2005 ASTRO meeting, Denver, CO (2005).
  36. L. W. Cuttino, **N. Dogan**, E. A. Bump, D. W. Arthur “Optimized Dose Coverage of regional lymph nodes in breast cancer: The role of intensity modulated radiation therapy (IMRT),” Presented at 2005 ASTRO meeting, Denver, CO (2005).
  37. **N. Dogan**, *Invited lecture* on “Tools for IMRT QA”, invited lecture, AAPM Meeting, Seattle, WA, July 23- 27 (2005). **N. Dogan**, G.P. Glasgow, “Effect of Minimum Segment Size and Number of Intensity Levels on Step-and-Shoot IMRT Plans,” presented at 2004 AAPM meeting in Pittsburgh, PA (2004).
  38. **N. Dogan** and N. Mohideen, “Correlation Between Fractional Rectal Doses and rectal Toxicity in Patients Treated with Combined External Beam plus Low Dose Rate Brachytherapy for Prostate Cancer”, presented at RSNA meeting, Chicago, IL, December (2003).
  39. **N. Dogan**, G. P. Glasgow “Surface and Build-up Region Dosimetry for Obliquely Incident Intensity Modulated Radiotherapy 6 MV X-Rays”, presented at AAPM meeting, San Diego, CA, August (2003).
  40. **N. Dogan**, L.B. Leybovich, A. Sethi, “Evaluation of an IMRT Planning System for Step-and-Shoot IMRT”, presented at the AAPM meeting in Montreal, Canada, July (2002).
  41. **N. Dogan**, Invited lecture on “Implementation of a Clinical IMRT Program”, IMPAC’s Midwestern IMRT Meeting, Chicago, IL, April 18 (2002).
  42. **N. Dogan**, L.B. Leybovich, A. Sethi, B. Emami “Improvement of dose distributions in abutment regions of IMRT and electron fields” presented at AAPM meeting in Salt City, UT (2001).
  43. L.B. Leybovich, **N. Dogan**, A. Sethi, “Film dosimetry of radiation using mixed beams: Photon beams of different energies; electron beams of different energies; combination of photon-electron beams of different energies:” presented at 2001 AAPM meeting in Salt Lake City, UT (2001).
  44. **N. Dogan**, S. King, L.B. Leybovich, A. Sethi, B. Emami, “Assessment of Different Methods of Boost Delivery (IMRT vs. 3-D Conformal) on Target Coverage and Normal Tissue Sparing”, presented 2001 ASTRO meeting in San Francisco, CA, November 3-8 (2001).
  45. **N. Dogan** , N. Mohideen, K. Keys, L.B. Leybovich, G. Glasgow, A. Sethi, R. Flannigan, “Effect of Prostatic Edema on CT-based Post Implant Dosimetry”, *Radiother Oncol*, Vol. 55 (1), pp:135(2000).
  46. **N. Dogan** , L.B. Leybovich, S. King, A. Sethi, B. Emami, “Comparison of treatment Plans Developed for Concave-Shaped Head and Neck Tumors: IMRT versus 3-D Conformal and 2-D Techniques”, Presented at ASTRO meeting in Boston, October (2000).
  47. L.B. Leybovich, **N. Dogan** , A. Sethi, B. Emami, “Comparison of IMRT Plans for treatment of Paranasal Sinus and Nasopharynx Tumors: Tomographic Technique with and without



- NonCoplanar Beams”, Presented at ASTRO meeting in Boston, October (2000).
48. L.B. Leybovich, E. Melian, **N. Dogan** , and A. Sethi “An Applicator for Conformal HDR Brachytherapy of Tracheostoma Recurrences”, *Radiother Oncol*, Vol. 55 (1),:126(2000).
  49. G. Yasuda, A. Sethi, , L.B. Leybovich, **N. Dogan** , W. Thorstad, B. Emami, “Improved Sparing of Critical Structures in Treatment of Lung Cancer: 3DCRT versus IMRT”, *Supplement to Radiology*, 217(P), pp. 265 (2000).
  50. A. Sethi, N. Mohideen, L.B. Leybovich, **N. Dogan**, Mulhall, B. Emami, “The role of IMRT in reducing Corporal Bodies Dose in Radiation Treatment of Prostate Cancer”, *Supplement to Radiology*, 217(P), pp. 409 (2000).
  51. **N. Dogan**, L.B. Leybovich, Sethi, A “A Modified Method of Planning and Delivery for Treatments”, presented at 1999 AAPM meeting in Nashville, TN.
  52. **N. Dogan** , Mohideen, L.B. Leybovich, Sethi, Analysis of the Quality of prostate Using dose Volume Histograms and Homogeneity Indexes”, *Med. Phys.*, 26, No:6, pp:1145 (1999).
  53. L.B. Leybovich, A, Sethi, **N. Dogan** “Elimination of field Size dependence of Enhanced Dynamic Wedge Factors”, *Med. Phys.*, 26, No:6, pp:1152 (1999).
  54. A, Sethi, L.B. Leybovich, G. Glasgow, I. Ouyang, **N. Dogan**, H. Forgione, “A Modified Rotational Hemi-body Electron Therapy Technique”, *Med. Phys.*, 26, No: 6, pp:1150 (1999).
  55. L.B. Leybovich, A, G. Glasgow, Sethi, G. Simon-Mumper, **N. Dogan** “Evaluation of Wedge Angles in Half-blocked Fields”, *Med. Phys.*, 26, No:6, pp:1104 (1999).
  56. **N. Dogan**, M. J. Balbes, M. Fatyga, J. F. Williamson, “A Commercial Implementation of TG43 Dose Calculation Algorithm”, *Med. Phys.*, 25, No:7, pp:A170 (1998).
  57. L.S. McCourt II, **N. Dogan**, W. Lodwick, and F. Newman, “A Robust Linear Programming Model for Teletherapy Dose Optimization”, *Med. Phys.*, 24, No:6,:1079 (1997).
  58. **N. Dogan**, Invited lecture on “Interactive and Autonomous Optimization Tools for 3-D Conformal Radiation therapy”, invited lecture, Department of Nuclear Engineering and Radiological Sciences, The University of Michigan, March 24 (1995)
  59. **N. Dogan**, J.J.H. Kim, M.L. Kessler, D.L. McShan, “Computer-Aided Optimization of Conformal Radiotherapy Treatment Plans”, *Med. Phys.*, 21, No:6, pp:1010 (1994).

## **V. Teaching**

### **Courses Taught**

8/2010 – 8/2012, Course Coordinator, Physics682: Clinical Rotation in Medical Physics – preparation, teaching, mentoring and supervising: **50 hours / year**

8/2006 – 8/2010, Lecturer, Physics682: Clinical Rotation in Medical Physics – preparation, teaching, mentoring and supervising: **40 hours / year**

8/2007 – 8/2012, Lecturer and course coordinator, Physician Resident Radiological Physics Course (5-6 resident/year) – 8 month course – preparation of course schedule and syllabus, teaching IMRT course, preparation and evaluation of midterm and final exams: **60 hours / year**

3/2003 – 5/2007, Lecturer, prepared and taught lectures, Physician Resident Radiological Physics Course: **50 hours /year**

3/2003 – 5/2008, Lecturer, prepared and taught lectures in Introduction to Radiation Physics Course: **20 hours /year**

1/2004 – 8/2012, In-service training of dosimetry and physics staff in IMRT planning and delivery: **60 hours / year**

1/2004 – 1/2005 – supervision and teaching of clinical physics residents, including one-to-one and in-class teaching, providing mentorship, preparation and evaluation of their exams: **400 -500 hours /year**

1/2004 – 8/2012, Lecturer for physician and physics resident orientation: **5hours / year**

2009- Invited lecture on “Infra-structure to Support IMRT”, Veterans Hospitals Radiation Oncology Meeting, Washington DC, January 9 (2009), preparation and teaching: **20 hours**

2007 -Invited lecture on “IMRT Planning and Dosimetry”, Turkish Medical Physics Meeting, Antalya, Turkey November 13- 18 (2007), preparation and teaching: **20 hours**

Invited lecture on “IGRT Planning and QA”, Turkish Medical Physics Meeting, Antalya, Turkey November 13- 18 (2007), preparation and teaching: **40 hours**

Invited lecture on “Tools for IMRT QA”, invited lecture, AAPM Meeting, Seattle, WA, July 23- 27 (2005): **40 hours**

Invited lecture on “IMRT: Concepts and Clinical Use”, Turkish Radiation Oncology Association Meeting, Antalya, Turkey, April 21-25 (2004): **40 hours**

#### **Ph.D. committees and thesis advisory committees:**

5/2007 – 5/2009 Yelin Suh, Ph.D.

#### **Reseach Advising:**

9/2009 – 5/2010 Bill Lehman, B.S. (Graduate student)  
9/2007 – 10/2012 Ford Sleeman, M.S. (Research Instructor)  
6/2008 – 10/2011 Baoshe Zhang, Ph.D. (Research Instructor)  
8/2013 – Keying Xu, M.S. ((Graduate student)

#### **Mentoring:**

7 / 2012 – 10/2012 Brian King, Ph.D (VCU Clinical Physics Resident)  
1/2012 – 10/2012 Jim Ververs, Ph.D. (VCU Clinical Physics Resident)  
1/2010 – 11/ 2011 Chenyu Yan, Ph.D (VCU Clinical Physics Resident)  
10/2008 – 10/2010 Xiaoying Liang, Ph.D (VCU Clinical Physics Resident)  
8/2007 – 8/2009 Cem Altunbas, Ph.D (VCU Clinical Physics Resident)  
1/2008 – 7/2008 Jason Shumadine, MD (VCU Radiation Oncology Resident) – 6-month Research rotation

7/2005 – 7/2007	Rohini George, Ph.D (VCU Clinical Physics Resident)
1/2006 – 1/2008	Strahinja Stojadinovic, Ph.D (VCU Clinical Physics Resident)
1/2005 – 7/2006	Lori Cuttino, MD (VCU Radiation Oncology Resident) – – 6-month Research rotation
7/2004 – 7/2006	Weiliang Du, Ph.D (VCU Clinical Physics Resident)
12/2003 – 7/2005	Imad Ali, Ph.D (VCU Clinical Physics Resident)
1/2004 – 7/2005	Michael Chang, MD (VCU Radiation Oncology Resident) – 6-month research rotation
7/2003 – 11/2003	Raj Singla, MD (Loyola University Medical Center, Radiation Oncology Resident) – 6-month research rotation
7/1999 – 12/1999	Matthew Krasin, MD (Loyola University Medical Center, Radiation Oncology Resident) – 6-month research rotation

## **VI. Service**

### **Clinical Service**

*November 2012 – Present* Vice Chair and Director of Medical Physics, Department of Radiation Oncology, University of Miami School of Medicine, Miami, Florida – Primary duties include supervising the activities of a physics group that consists of 10 physics faculty, 7 dosimetrists, 1 computer support personnel. The medical physics group provides clinical physics service support for the Radiation Oncology Department at Sylvester Cancer center and satellite facilities, including Dearfield Beach, Jackson Memorial Hospital as well as evaluation of devices and equipment for clinical use, development and implementation of clinical programs incorporating new technologies and advanced treatment techniques.

Administrative responsibilities included supervision of the medical physics and dosimetry staff, development of new clinical and research programs in medical physics, assuring compliance with national protocols and codes of practice, and requirements of the Nuclear Regulatory Commission (NRC), radiation protection program, quality assurance and quality management programs.

*June 2007 – May 2012* Professor and Director of Clinical Physics, Department of Radiation Oncology, Virginia Commonwealth University Medical Center, Richmond, Virginia – Primary clinical duties included supervising the clinical activities of a physics group that consists of 8 clinical faculty, 9.5 dosimetrists, 2 engineers, a physics assistant and 2 computer support personnel. The clinical physics group provides clinical physics service support for the Radiation Oncology Department at VCU medical center and satellite facilities, including Stony Point, Hanover, Henrico Doctors Hospital Forest, VA Hospital as well as evaluation of devices and equipment for clinical use, development and implementation of clinical programs incorporating

new technologies and advanced treatment techniques.

Administrative responsibilities included supervision of the clinical physics and dosimetry staff, development of clinical programs in medical physics, assuring compliance with national protocols and codes of practice, and requirements of the Nuclear Regulatory Commission (NRC), radiation protection program, quality assurance and quality management programs.

*Dec 2003 – Oct 2012*                      Group Leader of VCU Clinical IMRT Program: Duties included supervising the clinical IMRT treatment planning and related software development, IMRT QA, and participating IMRT related clinical projects, and as well as clinical IMRT treatment planning.

*Dec 2003 – May 2012*                      Supervisor for the VCU Radiation Oncology Clinical Computer support group: Duties included supervising the department's information technology staff who manages Windows-based servers, including Pinnacle<sup>3</sup> Treatment Planning system upgrades and support, ARIA record & verify systems, and Unix-based servers and workstations.

*March 2006 – Oct 2012*                      Director of VCU Clinical Physics Residency Training Program: Duties included selection of physics residents, preparation of resident rotation, supervising and overseeing resident activities, including yearly evaluation of the residents.

*Dec 2003 – Oct 2012*                      Primary Clinical Physicist: Duties include general daily clinical support, including external beam and brachytherapy chart checks, machine commissioning, calibration, dose algorithm commissioning and QA at VCU and satellite clinics.

*Apr 2007– Oct 2012*                      Core A leader for the NIH Program Project Grant: Duties include supervising the development of the PPG software infrastructure, automated treatment planning and QA activities needed for clinical implementation of IGART.

*Jan 2004– Oct 2012*                      Member of Medical Physics Graduate Program and Admissions Committee.