

CURRICULUM VITAE

BIOGRAPHICAL

David Anthony Clump II, MD, PhD

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Department of Radiation Oncology
UPMC Shadyside Hospital
5230 Centre Avenue
Pittsburgh, PA 15232

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EDUCATION and TRAINING

UNDERGRADUATE:

August 1997
to 1998 Carnegie Mellon University
Pittsburgh, PA 15213

January 1999
to 2001 West Virginia University
Morgantown, WV 26506 Bachelor of Science
Biology

GRADUATE:

August 2001
to May 2008 West Virginia University
School of Medicine / Ph. D Program
Morgantown, WV 26506 Doctor of Medicine
Doctor of Philosophy

POSTGRADUATE:

July 2008
to June 2009 West Virginia University
School of Medicine
Morgantown, WV 26506 Transitional Residency

July 2009
to June 2013 University of Pittsburgh Medical Center
Department of Radiation Oncology
5230 Centre Avenue
Pittsburgh, PA 15232 Radiation Oncology Residency
Chief Resident (2012 – 2013)

SPECIAL TRAINING:

2010	Principles and Practice of Gamma-Knife Radiosurgery UPMC, Pittsburgh, PA 15213
2012	ASTRO / AANS Stereotactic Radiosurgery Course for Residents Chicago, IL 60611
2012	UPMC SRS/SBRT Training Program UPMC, Pittsburgh, PA 15232

APPOINTMENTS and POSITIONS**ACADEMIC:**

July 2013 to August 2014	Clinical Assistant Professor UPMC Shadyside, Department of Radiation Oncology
August 2014 to current	Assistant Professor UPMC Shadyside, Department of Radiation Oncology
July 2014 to current	Assistant Professor Clinical and Translational Sciences University of Pittsburgh Cancer Institute
July 2015 to current	Department of Otolaryngology/Head and Neck Surgery

CERTIFICATION and LICENSURE**SPECIALTY CERTIFICATION:**

2003, 2008 & 2009 (respectively)	Diplomat, Board of Medical Examiners (USLME Steps 1, 2, 3)
2014	Diplomat, American College of Radiology (Board Certification)

MEDICAL or OTHER PROFESSIONAL LICENSURE:

Current	Medical Licensure, State of Pennsylvania (MD-447846)
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MEMBERSHIPS in PROFESSIONAL and SCIENTIFIC SOCIETIES

2009 – present	American Society of Therapeutic Radiation Oncology
2009 – present	American College of Radiation Oncology
2009 – present	American Board of Radiology

2009 – present American Association of Physicists in Medicine
2013 – present Radiosurgery Society

HONORS and AWARDS

U.S. Steel Corporation/Carnegie Mellon University Scholar	1997 – 1998
Pfizer Award for Scholarship and Service	2001
<i>Phi Beta Kappa</i>	2001
Regional Cancer Center Consortium for Translational Care Award	2006
Intercultural Cancer Consortium Edward L. Reed Memorial Scholar	2006
WVU Research Day Presenter	2008
Pennsylvania Radiological Society Annual Meeting, 2 nd Place Poster	2010
International HMGB1 Society Meeting, 2 nd Place Poster	2011
Roentgen Resident Research Award	2012
Roentgen Resident Research Award	2013

PUBLICATIONS

Refereed articles

1. **Clump, D.A.**, Clem R., Qian, Y., Guappone-Koay, A., Berrebi A.S., and D.C. Flynn. Expression levels of the Src activating protein AFAP-110 are developmentally regulated in brain. *J. Neurobiology*. 2003.
2. **Clump, D.A.**, Qazi, I., Sudol, M., and D.C. Flynn. c-Yes response to growth factor activation. *Growth Factors*. 2005.
3. **Clump, D.A.**, and D.C. Flynn. c-Yes Target Assessment. *Current Biological Data*. 2009.
4. **Clump, D.A.**, Yu J.J., Cho Y, Gao R, Jett J, Zot H, Cunnick J.M., Snyder B, Clump A.C., Dodrill M, Gannett P, Coad J.E., Shurina R, Figg W.D., Reed E, and D.C. Flynn. A Polymorphic Variant of AFAP-110 Enhances cSrc Activity. *Transl Oncol*. 2010
5. Bria, C., Wegner R.E., **Clump D.A.**, Vargo J.A., Mintz A.H., Heron D.E., Burton S.A. Fractionated Stereotactic Radiosurgery for the Treatment of Meningiomas. *J Cancer Res Ther*. 2011.
6. Greenberger, J.S., **Clump, D.A.**, Kagan, V., Bayir H., Lazo, J.S., Wipf, P., Li, S., Gao, X., and M.E. Epperly. Strategies for Discovery of Small Molecule Radiation Protectors and Radiation Mitigators. *Frontiers in Radiation Oncology*. 2012
7. Leeman JE, **Clump DA**, Wegner RE, Heron DE, Burton SA, and AH Mintz. Prescription dose and fractionation predict improved survival after stereotactic radiotherapy for brainstem metastases. *Radiation Oncology* 2012.

8. Leeman JE, **Clump DA**, Wegner RE, Heron DE, Burton SA, and AH Mintz. Detection and Treatment of Small Brain Metastases Resulting from Renal Cell Carcinoma Predicts Improved Survival after Stereotactic Radiosurgery. *Journal of Radiation Oncology* 2012.
9. Lim CM, **Clump DA**, Heron DE, and R.L. Ferris. Stereotactic Body Radiotherapy (SBRT) for Primary & Recurrent Head and Neck Tumors. Review. *Oral Oncology* 2013.
10. Wang K, Heron DE, **Clump DA**, Flickinger JC, Kubicek GJ, Rwigema JC, Ferris RL, Ohr JP, Quinn AE, Ozhasoglu C, and Branstetter BF. Target delineation in stereotactic body radiation therapy for recurrent head and neck cancer: a retrospective analysis of the impact of margins and automated PET-CT segmentation. *Radiother Oncol*. 2013.
11. Leeman JE, **Clump DA**, Wegner RE, Heron DE, Burton SA, and AH Mintz. Stereotactic Radiosurgery for the Treatment and Palliation of Base of Skull Metastases. *Journal of Radiosurgery and SBRT*. 2013
12. Bakkenist CJ, Crzambel RK, **Clump DA**, Greenberger JS, Beumer JH, Schmitz JC. Radiation therapy induces DNA damage in peripheral blood. *Oncotarget* 2013.
13. Vargo JA, Kubicek GJ, Ferris RL, Duvvuri U, Johnson J, DO JO, **Clump DA**, Burton S, Heron DE. Adjuvant stereotactic body radiotherapy ± cetuximab following salvage surgery in previously-irradiated head-and-neck cancer. *Laryngoscope*. 2013.
14. Leeman JE, Heron DE, **Clump DA**, Flickinger JC, Mintz AH, Burton SA. Extent of peri-lesional edema differentiates radionecrosis from tumor recurrence following stereotactic radiosurgery for brain metastases. *Neuro Oncol*. 2013
15. Horne ZD, **Clump DA**, Vargo JA, Shah S, Beriwal S, Burton SA, Quinn AE, Schuchert MJ, Landreneau RJ, Christie NA, Luketich JD, Heron DE. Pretreatment SUVmax predicts progression-free survival in early-stage non-small cell lung cancer treated with stereotactic body radiation therapy. *Radiat Oncol*. 2014
16. Davis KS, Vargo JA, Ferris RL, Burton SA, Ohr JP, **Clump DA**, Heron DE. Stereotactic body radiotherapy for recurrent oropharyngeal cancer - influence of HPV status and smoking history. *Oral Oncol*. 2014
17. Vargo JA, Ferris RL, **Clump DA**, Heron DE. Stereotactic Body Radiotherapy as Primary Treatment for Patients with Medically Inoperable Head and Neck Cancer. *Frontiers in Radiation Oncology*. 2014
18. Vargo JA, Ferris RL, Ohr J, **Clump DA**, Davis KS, Duvvuri, U, Kim S, Johnston JT, Bauman JE, Gibson MK, Branstetter BF, Heron DE. A prospective phase 2 trial of reirradiation with stereotactic body radiation therapy plus cetuximab in patients with previously irradiated recurrent squamous cell carcinoma of the head and neck. *Int J Radiat Oncol Biol Phys*. 2015.
19. Xu KM, Quan K, **Clump DA**, Ferris RL, Heron DE. Stereotactic ablative radiosurgery for locally advanced or recurrent skull base malignancies with prior external beam radiation therapy. *Front Oncol*. 2015.
20. Holt DE, Gill BS, **Clump DA**, Leeman JE, Burton SA, Amankulor NM, Engh JA, Heron DE. Tumor bed radiosurgery following resection and prior stereotactic radiosurgery for locally persistent brain metastasis. *Front Oncol*. 2015.
21. **Clump DA**, Bauman JE, Ferris RL. Cancer of the Oropharynx. *Surg Oncol Clin N Am*. 2015.

22. Gill BS, **Clump DA**, Burton SA, Christie NA, Schuchert MJ and Heron DE. Salvage stereotactic body radiotherapy for locally recurrent non-small cell lung cancer after sublobar resection and I-125 vicyrl mesh brachytherapy. *Front Oncol.* 2015.
23. Pennathur A, Luketich JD, Heron DE, Schuchert MJ, Bianco V, **Clump D**, Burton S, Abbas G, Gooding WE, Ozhasogul C, Landreneau RJ, Christie NA. Stereotactic Radiosurgery/Stereotactic Body Radiotherapy for Recurrent Lung Neoplasm: An Analysis of Outcomes in 100 Patients. *Ann Thor Surg* 2015.
24. Quan K, Xu KM, Lalonde R, Horne ZD, Bernard MD, McCoy C, **Clump DA**, Burton SA, Heron DE. Treatment Plan Technique and Quality for Single-Isocenter Stereotactic Ablative Radiotherapy for Multiple Lung Lesions with Volumetric-Modulated Arc Therapy or Intensity-Modulated Radiosurgery. *Front Oncol.* 2015.
25. Quan K, Xu KM, Zhang Y, Clump DA, Flickinger JC, Lalonde R, Burton SA, Heron DE. Toxicities following Stereotactic Ablative Radiotherapy of Locally-Recurrent and Previously-Irradiated Head and Neck Squamous Cell Carcinoma. *Seminars in Radiation Oncology. In Press.*

Book Chapters

1. Kondziolka, D, Niranjan A, Lunsford LD, **Clump DA**, and Flickinger JC. Radiosurgery and radiotherapy for brain tumors. Editors: A.H. Kaye and E.R. Laws Chapter 15. *Brain Tumors 3rd Edition.* 2011.
2. **Clump, D.A.** and Beriwal S. IMRT for Vulvar Cancer. Editor: AJ Mundt. *Radiation Medicine Rounds.* 2011.
3. **Clump, D.A.**, Bauman J.E., and Ferris R.L. Editor: J.A. Ridge. *Management of Oropharyngeal Squamous Cell Carcinoma.* 2014.

Abstracts

1. **Clump, D.A.**, J.J. Yu, and D.C. Flynn. AFAP in Ovarian Cancer. 97th Annual Meeting for the American Association for Cancer Research. 2006
2. **Clump, D.A.**, R.E. Wegner, D.E. Heron, G. Abbas, M.J., Schuchert, R.J. Landreneau, J.D. Luketich, and S.A. Burton. Stereotactic Body Radiosurgery is a Safe and Efficacious Treatment Modality following RFA for Medically Inoperable NSCLC. *ASTRO 2010.*
3. **Clump, D.A.**, D.E. Heron, J Engh, A.H. Mintz, J. Cunnick, and D.C. Flynn. The Src Activating Protein, AFAP1 is Positioned to Promote Invasion in Glioblastoma Multiforme. *Society of Neuro-Oncology.* 2010
4. **Clump, D.A.**, R Srinivas, R. E. Wegner, D.E. Heron, S.A. Burton, and A.H. Mintz, Definitive Chemoradiotherapy and Salvage Fractionated Radiosurgery Resulting in Extended Survival in an Elderly Female with a GBM. *Society of Neuro-Oncology.* 2010.
5. **Clump, D.A.** R.E. Wegner, C Bria, A.H. Mintz, D.E. Heron, and S.A. Burton, Fractionated Stereotactic Radiosurgery for the Treatment of Meningiomas. *ACRO 2011*
6. **Clump, D.A.** R.E. Wegner, Christie N, Heron D.E., and S.A. Burton. Stereotactic Body Radiotherapy (SBRT) for Recurrent and Early-Stage Centrally-Located Non-Small Cell Lung Cancer. *ASTRO 2011.*

7. Wang K, Heron DE, **Clump DA**, Flickinger JC, Rwigema J-C, Ferris RL, Kubicek GJ, Ohr JP, Quinn AE, Ozhasoglu C, Branstetter BF. What is the right margin for target delineation in Stereotactic Body Radiation Therapy (SBRT) for previously irradiated, recurrent squamous cell carcinoma of the head and neck. Oral Presentation. ACRO 2012.
8. **Clump DA**, Lotze MT. Autophagy and HMGB1 expression in Pancreatic Cancer is Modulated by Ionizing Radiation. ARS 2012.
9. Leeman JA, **Clump DA**, Wegner RA, Burton SA, Mintz AH, and DE Heron. Linear Accelerator Based Stereotactic Radiosurgery for the Treatment of Brainstem Metastases. ASTRO 2012.
10. Leeman JE, **Clump DA**, Flickinger JC, Burton SA, Mintz AH, Heron DE. T1/T2 match and high FLAIR lesion-to-edema ratio identify recurrence of brain metastases treated with stereotactic radiosurgery. Society for Neuro-Oncology. 2012.
11. Z. D. Horne, **D. A. Clump**, S. Shah, J. A. Vargo, S. A. Burton, N. A. Christie, M. J. Schuchert, R. J. Landreneau, J. D. Luketich, D. E. Heron. Pretreatment SUVmax as a marker for progression-free survival in stage 1 NSCLC treated with SBRT. ASTRO Cancer Imaging and Radiation Therapy Symposium. 2013
12. Gill BS, **Clump DA**, Vargo JA, Heron DE, Schuchert MJ, Christie NA, Burton SA. Salvage stereotactic body radiotherapy for local failures after sublobar resection with I-125 vicryl mesh brachytherapy. ACRO 2013.
13. Horn ZD, **Clump DA**, Shah S, Vargo JA, Beriwal SD, Burton SA, Christie NA, Schuchert MJ, Landreneau RJ, Pennathur A, Luketich JD, Heron DE. Stereotactic body radiation therapy for early-stage non-small cell lung cancer: location matters. ACRO 2013.
14. Vargo JA, Leeman JA, **Clump DA**, Schuchert MJ, Christie NA, Heron DE, Quinn A, Burton SA. Stereotactic Body Radiotherapy Salvage for Locally-Recurrent Central Non-Small-Cell Lung Cancers. The SRS/SBRT Scientific Meeting 2013.
15. Kabolizadeh P, Horne Z, Shah S, **Clump DA**, Vargo JA, Heron DE, Quinn A, Burton SA, Abbas G, Schuchert MJ. Salvage Stereotactic Body Radiation Therapy (SBRT) for Medically-Inoperable Patients with NSCLC following RFA. The SRS/SBRT Scientific Meeting 2013.
16. **Clump DA**, Vargo JA, Rwigema JC, Davis K, Ferris R, Heron DE, Quinn A, Burton SA. Stereotactic Body Radiotherapy for Recurrent Oropharyngeal Cancer- Influence of HPV and Smoking History. Oral Presentation. The SRS/SBRT Scientific Meeting 2013.
17. Davis KS, **Clump DA**, Chiosea SI, Ferris RL, Johnson JT, Duvvuri U. Patterns of Cervical Metastases in T1/T2 Squamous Cell Carcinoma of the Tongue Base. The Triological Society. 2013.
18. Vargo JA, Ferris RL, **Clump DA**, Burton SA, Heron DE. Stereotactic Body Radiation Therapy ± Cetuximab as Primary Treatment for Elderly Patients With Medically-Inoperable Head-and-Neck Cancer. ASTRO 2013
19. Duvvuri U, Byrd JK, Davis KS, Ferris RL, Kim S, Heron DE, **Clump DA**, Ohr J, Bauman JE, Johnson JT. Transoral Robotic Surgery and the Cervical Unknown Primary: The Utility of Discovering Occult Primary Lesions. ASTRO 2013.
20. Epperly M, Kalash R, **Clump DA**, Heron DE, Burton SA, Engh J, Mintz AH. Breast Cancer Luminal Status Predicts Survival Following Stereotactic Radiosurgery of Brain Metastasis. ASTRO 2013.

21. Rajagopalan MS, **Clump DA**, Heron DE, Flickinger JC, Kubicek GJ, Petro D, Burton SA. Initial Report of a Prospective Phase 2 Study Including Patient-Reported Quality of Life Data of Stereotactic Body Radiation Therapy (SBRT) for Patients With Oligometastatic Disease. ASTRO 2013.
22. Famoso J Berhane H, Kabolizadeh P, Vargo JA, Davis KS, Johnson JT, Heron DE, **Clump DA**. Relationship of Hard Palate Dose and Patient-Reported Xerostomia in Head-and-Neck Cancer Patients Treated with IMRT. ASTRO Multidisciplinary Head and Neck Meeting. 2014.
23. Binks JT, Christie A, **Clump DA**, Burton SA, Christie N, and Heron DE. Failure Rates of SABR treated lung cancer comparing 60 Gray in 3 fractions versus 48 gray in 4 fractions. Radiosurgery Society 2014.
24. Holt DE, Kabolizadeh P, **Clump DA**, Leeman JE, Burton SA, Amankulor N, Engh J, Heron DE. Tumor bed radiosurgery following resection and prior stereotactic radiosurgery for locally persistent brain metastasis. Radiosurgery Society 2014.
25. Horn ZD, **Clump DA**, Shah S, Vargo JA, Beriwal SD, Burton SA, Christie NA, Schuchert MJ, Landreneau RJ, Pennathur A, Luketich JD, Heron DE. Outcome Disparities between Treatment Platforms in the Therapy of Stage 1A/1B Non-Small Cell Lung Cancer with Stereotactic Radiosurgery. Radiosurgery Society 2014.
26. Davis KS, **Clump DA**, Duvvuri U, Johnson JT, Kim S, Bauman J, Ohr J, Heron DE, Ferris RL. Tumor Volume may Predict Survival in HPV-Positive Oropharyngeal Cancer. IFHNOS and AHNS 2014.
27. Ling D, Davis KS, Maxwell JH, **Clump DA**, Heron DE, Kim S, Johnson JT, Ferris RL, Duvvuri U. Quality of Life Outcomes after Transoral Robotic Surgery (TORS) for Oropharyngeal Cancer. IFHNOS and AHNS 2014.
28. Bauman JE, Gooding WE, **Clump DA**, Kim S, Karlovits BJ, Heron DE, Duvvuri U, Ohr J, Holeva K, Ferris RL. Phase I trial of cetuximab, intensity modulated radiotherapy (IMRT), and the anti-CTLA-14 monoclonal antibody ipilimumab in previously untreated, locally advanced head and neck squamous cell carcinoma. ASCO 2014.
29. Ferris RL, Schmitt NC, Heron DE, Johnson JT, Kim S, Duvvuri U, **Clump DA**, Grandis J, Bauman JE, Gooding WE, Argiris A. Phase II trial of radiotherapy with concurrent cisplatin plus panitumumab for patients with high-risk, resected head and neck cancer. ASCO 2014.
30. Horne ZD, **Clump DA**, Burton SA, Heron DE. An Update of Radiosurgical Outcome Disparities by Tumor Tumor Location for Early-Stage Non Small Cell Lung Cancer. ASTRO 2015.
31. Quan K, Xu KM, Horne ZD, **Clump DA**, Lalonde R, Burton SA, Heron DE. Treatment Plan Technique and Quality for Single Isocenter Stereotactic Ablative Radiation Therapy of Multiple Lung Lesions with Volumetric Modulated Arc Therapy or Intensity Modulated Radiosurgery. ASTRO 2015.
32. Gill BS, Olsheski ME, DAmbrosio DJ, **Clump DA**, Wegner RE, Iyer R, Burton SA, Holeva K, Heron DE. Hypofractionated Stereotactic Body Radiation Therapy for Low and Intermediate Risk Prostate Cancer: A Multi-Institutional Phase 2 Analysis. ASTRO 2015
33. Ling DC, Chapman BV, Kim J, Choby G, Kabolizadeh P, **Clump DA**, Ferris RL, Kim S, Beriwal S, Heron DE, Duvvuri D. Oncologic Outcomes and Patient-Reported Quality of Life in Patients with Oropharyngeal Squamous Cell Carcinoma Treated with Primary Transoral Robotic Surgery versus Definitive Chemoradiation. ASTRO 2015.

34. Holt D, Gill BS, **Clump DA**, Si Young J, Burton SA, Flickinger JC, Engh J, Amankulor NM, Heron DE. Clinical Outcomes of Single Isocenter Volumetric Modulated Arc Radiosurgery for Targeting Multiple Brain Metastases. ASTRO 2015
35. Srivastava RM, **Clump DA**, Ferris RL. Anti-PD-1 mAb pre-radiotherapy (RT) loading dose and fractionated RT induced better tumor-specific immunity and tumor shrinkage than sequential administration in an HPV + head and neck cancer model. SITC 2015.
36. Holt D, Gill BS, Flickinger JC, **Clump DA**, Burton SA, Engh JA, Heron DE. Repeat Radiosurgery for Locally-Recurrent Brain Metastases with Extensive Peri-Lesional Edema: Increased Risk of Radiation-Related Toxicity? Society of Neuro Oncology 2015.
37. Holt DE, Bernard ME, Quan K, **Clump DA**, Engh JA, Burton SA, Heron DE. (2015) Outcomes of Salvage Radiosurgery for Recurrent Glioblastoma Multiforme. Society of Neuro Oncology 2015
38. Holt DE, Gill BS, **Clump DA**, Engh JA, Flickinger JC, Burton SA, Amankulor NM, Heron DE. Stereotactic radiosurgery in the initial treatment of small brain metastases: local control and prognostic factors of diffuse distant brain failure. ACRO 2015.
39. Holt DE, Gill BS, **Clump DA**, Burton SA, Flickinger JC, Engh JA, Amankulor NM, Heron DE. (2015) Salvage stereotactic radiosurgery for locally recurrent brain metastases treated previously with stereotactic radiosurgery. ARS 2015.

PROFESSIONAL ACTIVITIES

Teaching:

2004	West Virginia University Teaching Assistant Medical Microbiology/Immunology
2005	West Virginia University Cancer Biology Lecturer: Principles of Radiobiology: PhD candidates
2011	UPCI Summer Research Academy High School Student Lecturer and Student Mentor
2013	UPCI Summer Research Academy High School Student Lecturer and Student Mentor
2015	UPMC SRS/SBRT Training Program Lecturer

Research

Head and Neck SPORE Career Development Award:	\$29, 752
CMCR Pilot Project <i>Co-PI</i> :	\$59,700
Shadyside Foundation- LLLT for radiation induced mucositis	\$20,000

Bristol Myers Squibb – LLLT for radiation and cetuximab induced dermatitis	\$20,000
CMCR Pilot Project PI	\$52,781
Lung Cancer SPORE DNA Damage to Immune Checkpoints	\$109,819
AZD6738/ATRI and AZD0156/ATMi as radiosensitizers: 223Ra (Xofigo) combinations	\$120,481
Stanley Marks Endowment Award	\$129,049
ATM for the Pharmacodynamic Determination of ²²³ Radium Dichloride in Metastatic Bone Disease	

Invited Presentations

On Light Sabers and Life Savers: The role of Stereotactic Ablative Radiotherapy.
UPCI Cancer Retreat 2013.

Adjuvant Therapies for Parotid Malignancies. Three Rivers Otolaryngology Conference. 2014.

The Evolving Role of Radiotherapy for Brain Metastases: Penn-Ohio Chapter AAPM 2014.

Recurrent HNC treated with SBRT: TCP-based outcome estimates. AAPM. Anaheim, CA. 2015.

Modern Management of Head and Neck Malignancies. Hagerstown, MD. 2015

Dental Management of Patients with Oral Cavity Cancer. Pittsburgh, PA 2013-2016

Research Related Activities

Patent: “Methods for detecting Ovarian Cancer and Anticipating Chemotherapy Response” Application
number: 11/707839

University Service

UPMC Department of Radiation Oncology Quality Oversight Committee	2011
UPMC Department of Radiation Oncology Morbidity and Mortality Committee	2011
UPCI Clinical Research Oversight Committee	2013-present
UPMC Department of Radiation Oncology Research Committee	2013-present
UPMC Radiation Safety/HUSC	2014-present
UPMC Department of Radiation Oncology Collaborative Research Committee	2015-present
University of Pittsburgh SoM- Oncology Interest Group- Faculty Advisor	2015-present
UPMC Cancer Centers: Pathways for Emerging Markets (Path-EM)	2015-present

Community Activities

Bayer/Xofigo Advisory Board	2013
AAPM Head and Neck SBRT TCP NTCP Working Group	2013-present
World Science Network. Radiation Oncology Advisory Board	2011-present
Frontiers in Radiation Oncology. Review Editorial Board	2013-present
NIH Rare Tumors of the Head and Neck Task Force	2015-present

