

# Steven Chmura, M.D., Ph.D.

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## Education

Residency	Radiation Oncology, The University of Chicago, Chicago, IL	2000-2004
Externship	Adult Clinical Oncology, Royal Marsden Hospital, London, UK	2003
Externship	High Dose Rate Brachytherapy, Memorial Sloan Kettering Hospital, New York, NY	2003
Internship	Weiss Hospital, The University of Chicago, Chicago, IL	1999-2000
M.D.	Pritzker School of Medicine, The University of Chicago, Chicago, IL	1992-1999
Ph.D.	Pathology, The University of Chicago, Chicago, IL	1994-1997
B.S., summa cum laude	Biology and Psychology, University of Illinois, Urbana, IL	1988-1992

## Faculty Academic Appointments

Associate Professor	Radiation and Cellular Oncology, The University of Chicago, Chicago, IL	2012-Present
Assistant Professor	Radiation and Cellular Oncology, The University of Chicago, Chicago, IL	2006-2012
Instructor	Radiation and Cellular Oncology, The University of Chicago, Chicago, IL	2004-2006

## Appointments at Hospitals/Affiliated Institutions

University of Chicago, Associate professor  
University of Illinois, Associate Professor  
Silver Cross/University of Chicago Cancer Center, Associate Professor  
Sherman Hospital, Elgin IL: Staff Physician.

## Other Professional Positions

### *Major Administrative Leadership Positions*

#### **Local**

Director of Clinical and Translational Research	Radiation and Cellular Oncology	2006-
Director of Radiosurgery	Radiation and Cellular Oncology	2006-

Research Reviewer	Radioisotopes & Radioactive Drug Research Advisory Committee	2009-
Co-Director	Breast Cancer SPORE Program	2009-2012
Research Reviewer	Safety and Monitoring Committee for Cancer Clinical Trials	2010-
Residency Program Director	Radiation and Cellular Oncology	2010-
CO-Director	University of Chicago Lead Academic Site (U10)	2013-
Scientific Advisory and Monitoring Board (SAM) for UCCC		2014-2017
NRG Oncology PI for UCMC		2014-2018

## **National and International**

### NCI Sponsored Cooperative Groups

Invited Breast Cancer Steering Committee Member, RTOG (now NRG Oncology)		2007-2014
Advanced Technology Integration Committee (ATIC) Breast Cancer Liaison, RTOG (now NRG Oncology)		2007-2014

### American Board of Radiology

Breast Cancer Oral Exam Writer and Examiner, Radiation Oncology Licensing Examination		2011-
Breast Cancer Written Exam Writer, Radiation Oncology Licensing Examination		2012-
Breast Cancer Recertification Written Exam Writer, Radiation Oncology Re-Certification Examination		2012-

### National Clinical Trials Network

Advanced Technology Integration Committee (ATIC) Breast Cancer Liaison, NRG Oncology		2014-
Breast Cancer Committee Member, NRG Oncology		2014-

## **Committee Service**

### **Local**

Member	Comprehensive Cancer Center	2004-present
Residency Selection Committee	Radiation and Cellular Oncology	2004-2010
Faculty Selection Committee	Radiation and Cellular Oncology	2006-present
Nursing Selection Committee	Radiation and Cellular Oncology	2006-present
Electronic Medical Records Transition Committee	Radiation and Cellular Oncology	2009-2010
"Go Lean" Quality Assurance Committee	Radiation and Cellular Oncology	2012-2013
BSD Data Governance Committee	UC Biological Sciences Division	2015-

### **National**

American Society for Radiation and Oncology (ASTRO)		
Exam and study guide writer for Radiation Oncology and Radiobiology		2013-

## **Professional Societies**

Member	American Society of Therapeutic Radiology and Oncology (ASTRO)	2013-
Member	American Society of Program Directors	

Invited Member American Board of Radiology 2012-2018

### **Grant Review Activities**

Radiation Cancer Risk and Neurocognitive Degeneration	NASA	2004-2010
Breast Cancer Imaging	DOD	2006-2009
Breast Cancer Local Therapy	DOD	2006-2009
Residency and Junior Faculty Training Grants	RSNA	2012-present

### **Editorial Activities**

American Society for Therapeutic Radiology and Oncology (ASTRO): Scientific Reviewer for Abstracts  
Clinical Cancer Research: Ad hoc Reviewer  
Current Medicine and Research Opinion: Ad hoc Reviewer  
Diseases of the Breast - Quarterly: Ad hoc Reviewer  
International Journal of Radiation Oncology, Biology and Physics: Ad hoc Reviewer  
Journal of Clinical Oncology: Ad hoc Reviewer  
Nature Reviews Clinical Oncology: Ad hoc Reviewer  
Technology in Cancer Research and Treatment: Ad hoc Reviewer

### **Funded and Pending Projects**

#### *Funding Information*

#### **Past**

PI: Title. American Cancer Society of Illinois	2007-2010
PI: Small Molecule inhibitor development for radiosensitization Young Investigator Award American Society for Therapeutic Radiology and Oncology (ASTRO)	2005-2009
Site PI, Radiation Therapy Oncology Group (RTOG) NIH/NCI and American College Radiology	2005-2009
PI: Title. Role of Dose rate in cell death Varian Medical Systems	2006-2008

#### **Current**

Co-PI, Developing a Robotic Frameless System for Stereotactic Radiosurgery (SRS) American Cancer Society	2013-2015
Site PI, Radiation Therapy Oncology Group (RTOG) NIH/NCI and American College Radiology	2009-2014
Co-PI: Lead Academic Site Grant NCI U10 Cancer Center	2014-

## Pending

Corresponding Site PI, NRG Oncology NIH/NCI and American College Radiology	Pending
Program grant for Rapid Plan and Oligometastases Varian Medical Systems	2015- pending

## Teaching and Training

### Teaching Honors and Awards

Association of Residents in Radiation Oncology: Residence Teaching Award	2012
Association of Residents in Radiation Oncology: Residence Teaching Award	2011
University of Chicago Faculty Role Model Nomination	2011
Association of Residents in Radiation Oncology: Teacher of the Year Award	2008
Association of Residents in Radiation Oncology: Teacher of the Year Award	2007
Association of Residents in Radiation Oncology: Teacher of the Year Award	2006
Pritzker School of Medicine Clinical Pathophysiology selected instructor	1998
Pritzker School of Medicine Clinical Pathology selected instructor	1996

### Teaching of Students in Courses

Organic Chemistry 102		1991
Teaching Assistant for Undergraduate Course	University of Illinois-Urbana	
Genetics 197		1992
Teaching Assistant for Undergraduate Course	University of Chicago	
Pathology 306		1995
Teaching Assistant for Medical School Course	University of Chicago	
Immunology 219: Immunology for Biology Majors		1996
Teaching Assistant for Undergraduate Course	University of Chicago	
Cancer Biology II: From Bench to Bedside		1997
Teaching Assistant for Undergraduate Course	University of Chicago	
Cancer Biology II: Breast Cancer		1999
Teaching Assistant for Undergraduate Course	University of Chicago	
Clinical Pathophysiology 313		1999
Teaching Assistant for Medical School Course	University of Chicago	
Introduction to Breast Cancer		2006-
Course Instructor for Radiation Therapy Course	University of Chicago	

### Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)

Radiobiology		2004
Course Instructor for Radiation Oncology Residents Course	University of Chicago	
Medical Oncology Core Lecture Series: Breast Cancer		2006-

Invited Speaker for Medical Oncology Fellows Course Program Cell Death: An Introduction	University of Chicago	2006-
Course Instructor for Radiation Oncology Residents Course The Plan: A systematic review and oral board preparation series for Radiation Oncology Residents	University of Chicago	2010-
Course Instructor for Radiation Oncology Residents Course Systematic Overview and History of NSABP Trials in Breast Cancer	University of Chicago	2012-
Course Instructor for Radiation Oncology Residents Course	University of Chicago	

*Clinical Supervisory and Training Responsibilities*

Didactic Sessions with Rotating Neuro-Oncology Fellow		2010-
Didactic Sessions with Rotating Surgical Oncology Fellow		2004-
Board Exam Coaching with Resident on Service	1 hr/wk	2004-
Rounding with Radiation Oncology Resident on service	Daily/yr round	2004-
Radiation Oncology Clinical Service Rotation for Medical Students	10-15 students ranging from 1 day to 1 week	2004-
Neuro-Oncology Clinical Service Rotation for Medical Students		2010-
Pritzker Residency Mentorship Program for Medical Students	Monthly goal settings and evaluation	2010-

*Supervised Trainees*

Gi-Xiang Lee/ Pre-Medical Student		2010-2013
Undergraduate pre-Medical student working on database design, clinical trial coordination, and prospective breast cancer projects.		
Gie Lee/MSTP Candidate in Biomechanical Engineering, Northwestern University		2009-2012
Thesis Committee Member		
Abhishek Solanki, M.D./Resident in Radiation Oncology, The University of Chicago		2011
Resident advisor for clinical outcomes research		
Sean Pitroda, M.D./Resident in Radiation Oncology, The University of Chicago		2011
Resident advisor for clinical outcomes research		
Suisui Song, M.D./Assistant Professor of Radiation Oncology, University of Southern California		2009-2011
Resident advisor for clinical outcomes research		
Kimberly Corbin, M.D./Private Practice in Radiation Oncology		2009-2011
Resident advisor for clinical outcomes research		
Ruchika Gutt, M.D./Private Practice in Radiation Oncology		2008-2011
Resident advisor for clinical outcomes research		
Kevin Choe, M.D., Ph.D./ Assistant Professor of Radiation Oncology, UT-Southwestern Medical School		2007-2010
Resident advisor for clinical outcomes research		
Michael Nichols, M.D., Ph.D./Radiation Oncology Private Practice		2007-2010
Resident advisor for basic science research and published clinical outcomes research		

Reunka Malik, M.D./ Assistant Professor of Radiation Oncology, The University of Chicago Resident advisor for clinical outcomes research	2007-2010
Michael Altman/Ph.D. Candidate, The University of Chicago Thesis Committee Member	2006-2010
Caroline Novak, M.D./Resident in Internal Medicine University of Illinois at Chicago Medical Student advised on outcomes research	2010
Paige Dorn, M.D./Radiation Oncology Private Practice Resident advisor for protocol development during her research year, which resulted in a new clinical trial.	2010
Aaron Pederson, M.D./Private Practice in Radiation Oncology Resident advisor for clinical outcomes research	2009
Daniel Golden, M.D./Instructor of Radiation Oncology, The University of Chicago Resident advisor for published clinical outcomes research and medical education research	2009
Ahmed Chaudhary, M.D./Resident in Radiation Oncology, The University of Chicago Laboratory research technician who pursued radiation oncology	2009
Nathan Tonlar, M.D./Resident, Beaumont Hospital Medical student advised for clinical outcomes research	2009
Amber Meriwether/ J.D., M.A. (Bioethics) candidate at the University of Wisconsin Law School/Northwestern University Undergraduate research assistant who became clinical trials coordinator for radiation oncology	2004-2007
Kiran Devisetty, M.D./Private Practice in Radiation Oncology Resident advisor for clinical outcomes research	2007
Craig Grossman, M.D., Ph.D./Resident, State University of New York Resident advisor for clinical outcomes research	2007
Joseph Salama, M.D./ Assistant Professor of Radiation Oncology, Duke Medical School Resident advisor for published clinical outcomes research	2004-2005
Brian Knabb, M.D./ Radiation Oncology Private Practice Resident advisor for published clinical outcomes research	2004-2005

*Invited Teaching and Presentations*

<i>The role of IMRT in reducing normal tissue toxicity in anal cancer.</i> Beijing Conference on Emerging Technologies	2002 Beijing, China
<i>Emerging Technologies: The role of IMRT in reducing normal tissue toxicity in anal cancer.</i> Seoul National University	2003 Seoul, South Korea
<i>Does IMRT impact tumor cell killing due to dose protraction and photon fluence effects?</i> American Society for Therapeutic Radiology and Oncology (ASTRO)	2004 Atlanta, GA
<i>Activation of genetically engineered adenoviral TFN gene therapy through BH3 domain inhibition.</i> Astro Translational meeting	2005 San Francisco, CA
<i>Imaging Genetically modified HSV with nanoparticles.</i> Radiation Research Workshop	2008 Boston, MA

<i>Radiotherapy Innovations for the treatment of Pituitary Adenomas.</i>	2008
University of Chicago Brain Tumor Center Symposium	Chicago, IL
<i>Technological advances improve breast cancer treatment and quality of life.</i>	2009
University of Chicago Symposium for Chicago	Chicago, IL
<i>Oligometastasis or OligoVisible in Breast Cancer.</i>	2010
Edwards Cancer Center Grand Rounds	Naperville, IL
<i>ASCO Breast Cancer Hot Topic CME Lecture and Review.</i>	2010
American Society for Clinical Oncology	Chicago
<i>Stereotactic Radiosurgery: Risks and Reason.</i>	2011
University of Chicago Grand Rounds	Chicago, IL
<i>Does technology improve outcome in GBM?</i>	2011
University of Chicago Brain Tumor Center Symposium	Chicago, IL
<i>Retreatment of GBM with Radiotherapy: Innovation?</i>	2011
University of Chicago Brain Tumor Center Symposium	Chicago, IL
<i>Reason and Responsibility: Conflicts between oncology and oncoplastic surgery for post-mastectomy radiotherapy.</i>	2011
Chicago Society of Plastic Surgery Symposium	Chicago, IL
<i>Translational Breast Cancer Research Scientific Moderator.</i>	2012
American Society for Therapeutic Radiology and Oncology (ASTRO)	Boston, MA
<i>Reconstruction and the risks of radiotherapy</i>	2013
Chicago Breast Cancer Reconstruction Symposium	Chicago, IL
<i>Chicago Brain Tumor Update and Highlights of 2013</i>	2013
University of Chicago	Chicago, IL
<i>Invited Visiting Professor</i>	2013
Loyola University Radiation Oncology	Chicago, IL
<i>Invited Special Speaker Where we are today in breast cancer radiotherapy</i>	2014
Radiologic Society of North America (RSNA)	Chicago, IL
<i>Invited Faculty</i>	2014
American Society for Therapeutic Radiology and Oncology	New Orleans, LA
<i>Invited Speaker Finding the Yeti: Randomizing Oligomets</i>	2015
Chicago Radiologic Society	Chicago, IL
<i>Invited Speaker BOOST session in breast cancer hot topics</i>	2015
RSNA 2015 Breast Boost Session	Chicago, IL

### **Current Licensure and Certification**

Board Certification, Radiation Oncology, American Board of Radiology	2005
Illinois Medical License	2004

### **Practice Activities**

Radiation	Breast; Central nervous system	The University of	4 full-day clinics per week,	2004-
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Oncology	including stereotactic radiosurgery	Chicago	12 months of the year	
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## **Education of Patients and Service to the Community**

Advances in Radiation therapy for Breast Cancer 2011:

Update for Patients

Wellness Center

Hinsdale, IL

2011

## **Scholarship**

*Peer reviewed publications in print or other media (excluding abstracts)*<sup>1,60</sup>

1. Advani SJ, Chmura SJ, Weichselbaum RR: Radiogenetic therapy: on the interaction of viral therapy and ionizing radiation for improving local control of tumors. *Semin Oncol* 24:633-8, 1997
2. Advani SJ, Weichselbaum RR, Chmura SJ: Enhancing radiotherapy with genetically engineered viruses. *J Clin Oncol* 25:4090-5, 2007
3. Al-Hallaq HA, Mell LK, Bradley JA, et al: Magnetic resonance imaging identifies multifocal and multicentric disease in breast cancer patients who are eligible for partial breast irradiation. *Cancer* 113:2408-14, 2008
4. Altman MB, Chmura SJ, Deasy JO, et al: Optimization of the temporal pattern of radiation: an IMRT based study. *Int J Radiat Oncol Biol Phys* 66:898-905, 2006
5. Altman MB, Stinauer MA, Javier D, et al: Validation of temporal optimization effects for a single fraction of radiation in vitro. *Int J Radiat Oncol Biol Phys* 75:1240-6, 2009
6. Altman MB, Vesper BJ, Smith BD, et al: Characterization of a novel phantom for three-dimensional in vitro cell experiments. *Phys Med Biol* 54:N75-82, 2009
7. Aydogan B, Li J, Rajh T, et al: AuNP-DG: deoxyglucose-labeled gold nanoparticles as X-ray computed tomography contrast agents for cancer imaging. *Mol Imaging Biol* 12:463-7, 2010
8. Beck TP, Kirsh EJ, Chmura SJ, et al: In vitro evaluation of calphostin C as a novel agent for photodynamic therapy of bladder cancer. *Urology* 54:573-7, 1999
9. Cao J, Roeske JC, Chmura SJ, et al: Calculation and prediction of the effect of respiratory motion on whole breast radiation therapy dose distributions. *Med Dosim* 34:126-32, 2009
10. Chmura SJ, Advani SJ, Kufe DW, et al: Strategies for enhancing viral-based gene therapy using ionizing radiation. *Radiat Oncol Investig* 7:261-9, 1999
11. Chmura SJ, Dolan ME, Cha A, et al: In vitro and in vivo activity of protein kinase C inhibitor chelerythrine chloride induces tumor cell toxicity and growth delay in vivo. *Clin Cancer Res* 6:737-42, 2000
12. Chmura SJ, Gupta N, Advani SJ, et al: Prospects for viral-based strategies enhancing the anti-tumor effects of ionizing radiation. *Semin Radiat Oncol* 11:338-45, 2001
13. Chmura SJ, Mauceri HJ, Advani S, et al: Decreasing the apoptotic threshold of tumor cells through protein kinase C inhibition and sphingomyelinase activation increases tumor killing by ionizing radiation. *Cancer Res* 57:4340-7, 1997
14. Chmura SJ, Milano MT, Haraf DJ: Reirradiation of recurrent head and neck cancers with curative intent. *Semin Oncol* 31:816-21, 2004



15. Chmura SJ, Nodzenski E, Beckett MA, et al: Loss of ceramide production confers resistance to radiation-induced apoptosis. *Cancer Res* 57:1270-5, 1997
16. Chmura SJ, Nodzenski E, Crane MA, et al: Cross-talk between ceramide and PKC activity in the control of apoptosis in WEHI-231. *Adv Exp Med Biol* 406:39-55, 1996
17. Chmura SJ, Nodzenski E, Kharbanda S, et al: Down-regulation of ceramide production abrogates ionizing radiation-induced cytochrome c release and apoptosis. *Mol Pharmacol* 57:792-6, 2000
18. Chmura SJ, Nodzenski E, Weichselbaum RR, et al: Protein kinase C inhibition induces apoptosis and ceramide production through activation of a neutral sphingomyelinase. *Cancer Res* 56:2711-4, 1996
19. Chmura SJ, Salama JK, Weichselbaum RR: Stereotactic radiotherapy for pulmonary metastases. *Semin Thorac Cardiovasc Surg* 25:292-9, 2013
20. Corbin KS, Dorn PL, Jain SK, et al: Hypofractionated radiotherapy does not increase acute toxicity in large-breasted women: results from a prospectively collected series. *Am J Clin Oncol* 37:322-6, 2014
21. Corbin KS, Ranck MC, Hasselle MD, et al: Feasibility and toxicity of hypofractionated image guided radiation therapy for large volume limited metastatic disease. *Pract Radiat Oncol* 3:316-22, 2013
22. Devisetty K, Chen LF, Chmura SJ: Evolving use of radiotherapy and radiosurgery in the treatment of pituitary adenomas. *Expert Rev Anticancer Ther* 6 Suppl 9:S93-8, 2006
23. Devisetty K, Mell LK, Salama JK, et al: A multi-institutional acute gastrointestinal toxicity analysis of anal cancer patients treated with concurrent intensity-modulated radiation therapy (IMRT) and chemotherapy. *Radiother Oncol* 93:298-301, 2009
24. Dorn PL, Al-Hallaq HA, Haq F, et al: A prospective study of the utility of magnetic resonance imaging in determining candidacy for partial breast irradiation. *Int J Radiat Oncol Biol Phys* 85:615-22, 2013
25. Dorn PL, Corbin KS, Al-Hallaq H, et al: Feasibility and acute toxicity of hypofractionated radiation in large-breasted patients. *Int J Radiat Oncol Biol Phys* 83:79-83, 2012
26. Dubauskas Z, Beck TP, Chmura SJ, et al: Activated calphostin C cytotoxicity is independent of p53 status and in vivo metastatic potential. *Clin Cancer Res* 4:2391-8, 1998
27. Feng CH, Gerry E, Chmura SJ, et al: An Image-Guided Study of Setup Reproducibility of Postmastectomy Breast Cancer Patients Treated With Inverse-Planned Intensity Modulated Radiation Therapy. *Int J Radiat Oncol Biol Phys*, 2014
28. Golden DW, Raleigh DR, Chmura SJ, et al: Radiation oncology fourth-year medical student clerkships: a targeted needs assessment. *Int J Radiat Oncol Biol Phys* 85:296-7, 2013
29. Golden DW, Spektor A, Rudra S, et al: Radiation oncology medical student clerkship: implementation and evaluation of a bi-institutional pilot curriculum. *Int J Radiat Oncol Biol Phys* 88:45-50, 2014
30. Hasselle MD, Haraf DJ, Rusthoven KE, et al: Hypofractionated image-guided radiation therapy for patients with limited volume metastatic non-small cell lung cancer. *J Thorac Oncol* 7:376-81, 2012
31. Jagadeesan VS, Raleigh DR, Koshy M, et al: A national radiation oncology medical student clerkship survey: didactic curricular components increase confidence in clinical competency. *Int J Radiat Oncol Biol Phys* 88:51-6, 2014
32. Kao J, Garofalo MC, Milano MT, et al: Reirradiation of recurrent and second primary head and neck malignancies: a comprehensive review. *Cancer Treat Rev* 29:21-30, 2003
33. Kao J, Milano MT, Javaheri A, et al: gamma-H2AX as a therapeutic target for improving the efficacy of radiation therapy. *Curr Cancer Drug Targets* 6:197-205, 2006
34. Kochanski JD, Chmura SJ: Is postmastectomy radiotherapy useful in elderly women with high-risk breast cancer? *Nat Clin Pract Oncol* 3:422-3, 2006

35. Koshy M, Villano JL, Dolecek TA, et al: Improved survival time trends for glioblastoma using the SEER 17 population-based registries. *J Neurooncol* 107:207-12, 2012
36. LeMieux MH, Solanki AA, Mahmood U, et al: Risk of second malignancies in patients with early-stage classical Hodgkin's lymphoma treated in a modern era. *Cancer Med*, 2015
37. Lewis SL, Porceddu S, Nakamura N, et al: Definitive Stereotactic Body Radiotherapy (SBRT) for Extracranial Oligometastases: An International Survey of >1000 Radiation Oncologists. *Am J Clin Oncol*, 2015
38. Li J, Chaudhary A, Chmura SJ, et al: A novel functional CT contrast agent for molecular imaging of cancer. *Phys Med Biol* 55:4389-97, 2010
39. Lukas RV, Gabikian P, Garza M, et al: Treatment of brain metastases. *Oncology* 87:321-9, 2014
40. Lussier YA, Khodarev NN, Regan K, et al: Oligo- and polymetastatic progression in lung metastasis(es) patients is associated with specific microRNAs. *PLoS One* 7:e50141, 2012
41. Lussier YA, Xing HR, Salama JK, et al: MicroRNA expression characterizes oligometastasis(es). *PLoS One* 6:e28650, 2011
42. Mell LK, Jeong JH, Nichols MA, et al: Predictors of competing mortality in early breast cancer. *Cancer* 116:5365-73, 2010
43. Mell LK, Schomas DA, Salama JK, et al: Association between bone marrow dosimetric parameters and acute hematologic toxicity in anal cancer patients treated with concurrent chemotherapy and intensity-modulated radiotherapy. *Int J Radiat Oncol Biol Phys* 70:1431-7, 2008
44. Milano MT, Chmura SJ, Garofalo MC, et al: Intensity-modulated radiotherapy in treatment of pancreatic and bile duct malignancies: toxicity and clinical outcome. *Int J Radiat Oncol Biol Phys* 59:445-53, 2004
45. Milano MT, Garofalo MC, Chmura SJ, et al: Intensity-modulated radiation therapy in the treatment of gastric cancer: early clinical outcome and dosimetric comparison with conventional techniques. *Br J Radiol* 79:497-503, 2006
46. Milano MT, Jani AB, Farrey KJ, et al: Intensity-modulated radiation therapy (IMRT) in the treatment of anal cancer: toxicity and clinical outcome. *Int J Radiat Oncol Biol Phys* 63:354-61, 2005
47. Milano MT, Vokes EE, Kao J, et al: Intensity-modulated radiation therapy in advanced head and neck patients treated with intensive chemoradiotherapy: preliminary experience and future directions. *Int J Oncol* 28:1141-51, 2006
48. Nichols MA, Mell LK, Hasselle MD, et al: Outcomes in black patients with early breast cancer treated with breast conservation therapy. *Int J Radiat Oncol Biol Phys* 79:392-9, 2011
49. Padilla L, Kang H, Washington M, et al: Assessment of interfractional variation of the breast surface following conventional patient positioning for whole-breast radiotherapy. *J Appl Clin Med Phys* 15:4921, 2014
50. Rizvi SA, Liu S, Chen Z, et al: Rationally simplified bistramide analog reversibly targets actin polymerization and inhibits cancer progression in vitro and in vivo. *J Am Chem Soc* 132:7288-90, 2010
51. Rudra S, Al-Hallaq HA, Feng C, et al: Effect of RTOG breast/chest wall guidelines on dose-volume histogram parameters. *J Appl Clin Med Phys* 15:4547, 2014
52. Salama JK, Chmura SJ: The role of surgery and ablative radiotherapy in oligometastatic breast cancer. *Semin Oncol* 41:790-7, 2014
53. Salama JK, Chmura SJ, Mehta N, et al: An initial report of a radiation dose-escalation trial in patients with one to five sites of metastatic disease. *Clin Cancer Res* 14:5255-9, 2008
54. Salama JK, Hasselle MD, Chmura SJ, et al: Stereotactic body radiotherapy for multisite extracranial oligometastases: final report of a dose escalation trial in patients with 1 to 5 sites of metastatic disease. *Cancer* 118:2962-70, 2012

55. Salama JK, Heimann R, Lin F, et al: Does the number of lymph nodes examined in patients with lymph node-negative breast carcinoma have prognostic significance? *Cancer* 103:664-71, 2005
56. Salama JK, Mell LK, Schomas DA, et al: Concurrent chemotherapy and intensity-modulated radiation therapy for anal canal cancer patients: a multicenter experience. *J Clin Oncol* 25:4581-6, 2007
57. Salama JK, Vokes EE, Chmura SJ, et al: Long-term outcome of concurrent chemotherapy and reirradiation for recurrent and second primary head-and-neck squamous cell carcinoma. *Int J Radiat Oncol Biol Phys* 64:382-91, 2006
58. Solanki AA, Weichselbaum RR, Appelbaum D, et al: The utility of FDG-PET for assessing outcomes in oligometastatic cancer patients treated with stereotactic body radiotherapy: a cohort study. *Radiat Oncol* 7:216, 2012
59. Tye K, Engelhard HH, Slavin KV, et al: An analysis of radiation necrosis of the central nervous system treated with bevacizumab. *J Neurooncol* 117:321-7, 2014
60. Westbrook CA, Chmura SJ, Arenas RB, et al: Human APC gene expression in rodent colonic epithelium in vivo using liposomal gene delivery. *Hum Mol Genet* 3:2005-10, 1994

#### *Other peer-reviewed publications*

1. S. J. Advani, S. J. Chmura and R. R. Weichselbaum. Radiogenetic therapy: on the interaction of viral therapy and ionizing radiation for improving local control of tumors. *Semin Oncol.* 1997;24(6):633-8.
2. S. J. Chmura, S. J. Advani, D. W. Kufe and R. R. Weichselbaum. Strategies for enhancing viral-based gene therapy using ionizing radiation. *Radiat Oncol Investig.* 1999;7(5):261-9.
3. S. J. Chmura, N. Gupta, S. J. Advani, D. W. Kufe and R. R. Weichselbaum. Prospects for viral-based strategies enhancing the anti-tumor effects of ionizing radiation. *Semin Radiat Oncol.* 2001;11(4):338-45.
4. J. Kao, M. C. Garofalo, M. T. Milano, S. J. Chmura, J. R. Citron and D. J. Haraf. Reirradiation of recurrent and second primary head and neck malignancies: a comprehensive review. *Cancer Treat Rev.* 2003;29(1):21-30.
5. S. J. Chmura, M. T. Milano and D. J. Haraf. Reirradiation of recurrent head and neck cancers with curative intent. *Semin Oncol.* 2004;31(6):816-21.
6. S. J. Chmura, M. Garofalo and R. R. Weichselbaum. Radiosensitization by Gene Therapy. *Cancer gene therapy.* 2005:349-366.
7. K. Devisetty, L. F. Chen and S. J. Chmura. Evolving use of radiotherapy and radiosurgery in the treatment of pituitary adenomas. *Expert Rev Anticancer Ther.* 2006;6 Suppl 9:S93-8.
8. J. Kao, M. T. Milano, A. Javaheri, M. C. Garofalo, S. J. Chmura, R. R. Weichselbaum and S. J. Kron. gamma-H2AX as a therapeutic target for improving the efficacy of radiation therapy. *Curr Cancer Drug Targets.* 2006;6(3):197-205.
9. S. J. Advani, R. R. Weichselbaum and S. J. Chmura. Enhancing radiotherapy with genetically engineered viruses. *J Clin Oncol.* 2007;25(26):4090-5.
10. P. L. Dorn and S. J. Chmura. Breast Cancer Oligometastases: A Rationale for Aggressive Local Therapy. *Breast Diseases: A Year Book Quarterly.* 2010;21(2):115-118.
11. P. L. Dorn and S. J. CHMURA. Breast radiotherapy as part of loco-regional treatments in stage IV breast cancer patients with oligometastatic disease. *Breast Diseases: A Year Book Quarterly.* 2011;22(2):202-204.
12. M. K. Nicholas, R. V. Lukas, S. Chmura, B. Yamini, M. Lesniak and P. Pytel. Molecular heterogeneity in glioblastoma: therapeutic opportunities and challenges. *Semin Oncol.* 2011;38(2):243-53.
13. Milano M, Chmura SJ, Haraf D. Retreatment of Head and Neck Cancer Current updates. *Up to Date (2007-2013)*

*Non-peer reviewed scientific or medical publications/materials in print or other media*

1. Chmura, S.J., K. Farrey, and S. Wang, *Impact of prolonged treatment times*. Intensity modulated radiation therapy: a clinical perspective, 2005. **1**: p. 337.
2. Lukas, R.V., S.J. Chmura, and M.K. Nicholas, *Management of Central Nervous System Metastasis from Renal Cancer*, in *Emerging Cancer Therapeutics*, M. Walter M. Stadler, Editor. 2011, demosmedical: New York. p. 157-168.

**Current Clinical Trials**

*Site PI for National Protocols*

RTOG 1014: A Phase II Study of Repeat Breast Preserving Surgery and 3D-Conformal Partial Breast Re-Irradiation (PBrI) for Local Recurrence of Breast Carcinoma

RTOG 1005: A Phase III Trial of Accelerated Whole Breast Irradiation with Hypofractionation Plus Concurrent Boost Versus Standard Whole Breast Irradiation Plus Sequential Boost for Early-Stage Breast Cancer

RTOG 0825: Phase III Double-Blind Placebo-Controlled Trial of Conventional Concurrent Chemoradiation and Adjuvant Temozolomide Plus Bevacizumab Versus Conventional Concurrent Chemoradiation and Adjuvant Temozolomide in Patients with Newly Diagnosed Glioblastoma

*PI Initiated Protocols*

IRB #09-025-A: Image guided partial breast irradiation (PBI) in a low-risk population screened with magnetic resonance imaging (MRI)

IRB #10-205-A: Long Term Database Collection and Analysis of Patients with Limited Metastatic Disease Treated with Hypofractionated Radiotherapy

IRB #10-425-B: Identification of cancer/testis (CT) antigens from plasma in locally advanced patients

IRB #13619B: A Study of Dose Escalation of Hypofractionated Radiation Therapy in Patients with Metastatic Cancer

IRB #14534B: Toxicity and Outcome Analysis of Anal Cancer Patients Treated With Intensity Modulated Radiation Therapy

IRB #15837A: A Long-Term Investigation of Curative Treatment in Breast Cancer Patients

IRB #16802B: Biologic Endpoints in the Annihilation of Metastases for Oligometastasis (BEAM ON)

IRB #17018B: Investigation of Gene Expression Profiles in Primary and Metastatic tumors in Patients with Surgically Resected Lung Metastases

*National PI or Co-PI*

NRG BR001: A Phase 1 Study of Stereotactic Body Radiotherapy (SBRT) for the Treatment of Multiple Metastases (National PI)
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Approved by RTOG/NSABP. CTEP Approved for activation 10/31/2014
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NRG-BR002: A Phase IIR/III Trial of Standard of Care Therapy with or without Stereotactic Body Radiotherapy (SBRT) and/or Surgical Ablation for Newly Oligometastatic Breast Cancer (National PI) (Activation 12/24/2014)
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ACRIN 6443: A Phase I/II Trial of MRI Guided Focused Ultrasound for the Ablation of Early Stage Breast Cancer
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## **Honors and Awards**

ASTRO Young Scientist Award	2005
Cancer Research Foundation New Faculty Award	2005
ASTRO Outstanding Abstract Award (Top 1%)	2004
Basic science research award for outstanding work in radiation oncology	1999
NIH training grant in growth and development, University of Chicago	1994