

THOMAS JEFFERSON UNIVERSITY
DEPARTMENT OF RADIATION ONCOLOGY

ACCOMPLISHMENTS REPORT
JANUARY 1 – DECEMBER 31, 2018
(as of May 3, 2018)

Bold = Member of the Department of Radiation Oncology

PUBLICATIONS

1. Ahn PH, Machtay M, **Anne` PR**, Cognetti D, Keane WM, Wuthrick E, **Dicker AP**, Axelrod RS: Phase I trial using induction cisplatin, docetaxel, 5-FU and erlotinib followed by cisplatin, bevacizumab and erlotinib with concurrent radiotherapy for advanced head and neck cancer. *Am J Clin Oncol*. 2018 May;41(5):441-46. PMID: 27391356
2. Arnold KM, Flynn NJ, Raben A, Romak L, **Yu Y**, **Dicker AP**, **Mourtada F**, Sims-Mourtada J: The impact of radiation on the tumor microenvironment: Effect of dose and fractionation schedules. *Cancer Growth Metastasis*. 2018 Mar 9. eCollection 2018. **Review**. PMID: 29551910
3. Bakker A, Holman R, **Rodrigues DB**, Dobsicek Trefna H, **Stauffer PR**, van Tienhoven G, Rasch CRN, Crezee H: Analysis of clinical data to determine the minimum number of sensors required for adequate skin temperature monitoring of superficial hyperthermia treatments. *Int J Hyperthermia*. 2018 Apr 27:1-8. PMID: 29658357
4. Beggs SM, Friedman BJ, Kornreich D, Okon L, Alpdogan O, **Shi W**, Sahu J: Primary cutaneous CD8+ T-cell lymphoma, an indolent and locally aggressive form mimicking paronychia. *Am J Dermatopathol*. 2018 Apr;40(4):e52-e56. PMID: 28984695
5. Belinsky I, Murchison AP, Evans JJ, Andrews DW, Farrell CJ, Casey JP, Curtis MT, Nowak Choi KA, **Werner-Wasik M**, Bilyk Jr: Spheno-orbital meningiomas: An analysis based on World Health Organization Classification and Ki-67 proliferative index. *Ophthal Plast Reconstr Surg*. 2018 Mar/Apr;34(2):143-150. PMID: 28350689.
6. Blumenthal DT, Won M, Mehta MP, Gilbert MR, Brown PD, Bostein F, Brachman DG, **Werner-Wasik M**, Hunter GK, Valeinis E, Hopkins K, Souhami L, Howard SP, Lieberman FS, Shrieve DC, Wendland MM, Robinson CG, Zhang P, Corn BW: Short delay in initiation of radiotherapy for patients with glioblastoma-effect of concurrent chemotherapy: A secondary analysis from the NRG Oncology/Radiation Therapy Oncology Group (RTOG) database. *Neuro Oncol*. 2018 Feb 15. [Epub ahead of print]. PMID: 29462493
7. Chinnaiyan P, Won M, Wen PY, Rojani AM, **Werner-Wasik M**, Shih HA, Ashby LS, Michael Yu HH, Stieber VW, Malone SC, Fiveash JB, Mohile NA, Ahluwalia MS, Wendland MM, Stella PJ, Kee AY, Mehta MP: A randomized phase II study of everolimus in combination with chemoradiation in newly diagnosed glioblastoma: results of NRG Oncology RTGOG 0913. *Neuro Oncol*. 2018 Apr 9;20(5):666-73. PMID: 29126203
8. **Den RB**, **Folino M**, **Dicker AP**: Utilizing 10-year results from the American Board of Radiology clinical examination to identify areas for programmatic improvement. *Int J Radiat Oncol Biol Phys*. 2018 Mar 1;100(3):556-57. PMID: 29413270

9. **Du S**, McCall N, Park K, Guan Q, Fontina P, Ertel A, Zhan T, **Dicker AP**, **Lu B**: Blockade of tumor-expressed PD-1 promotes lung cancer growth. *Oncoimmunology*. 2018 Jan 29;7(4):e1408747. eCollection 2018. PMID: 29632720
10. Ezzel G, Chera B, **Dicker A**, Ford E, Potters L, Santanam L, Weintraub S: Common error pathways seen in the RO-ILS data that demonstrate opportunities for improving treatment safety. *Pract Radiat Oncol*. 2018 Mar-Apr;8(2):123-132. PMID: 29329998
11. Gonzalez BD, Small BJ, Cases MG, **Williams NL**, Fishman MN, Jacobsen PB, Jim HSL: Sleep disturbance in men receiving androgen deprivation therapy for prostate cancer: the role of hot flashes and nocturia. *Cancer*. 2018 Feb 1;124(3):499-506. PMID: 29072790
12. Hall WA, Pugh SL, Wefel JS, Armstrong TS, Gilbert MR, Brachman DG, **Werner-Wasik M**, Wendland MM, Brown PD, Chao ST, Roof KS, Robins HI, Mehta MP, Curran JW Jr, Movsas B: Influence of residual disease following surgical resection in newly diagnosed glioblastoma on clinical, neurocognitive, and patient reported outcomes. *Neurosurgery*. 2018 Mar 30. [Epub ahead of print]. PMID: 29618054
13. Hwang WL, Tendulkar RD, Niemierko A, Agrawal S, Stephans KL, Spratt DE, Hearn JW, Koontz BF, Lee WR, Michalski JM, Pisansky TM, Liauw SL, Abramowitz MC, Pollack A, Moghanaki D, Anscher MS, **Den RB**, Zietman AL, Stephenson AJ, Efstathiou JA: Comparison between adjuvant and early-salvage postprostatectomy radiotherapy for prostate cancer with adverse pathological features. *JAMA Oncol*. 2018 Jan 25 [Epub ahead of print]. PMID: 29372236
14. Lan J, Li R, Yin LM, Deng L, Gui J, Chen BQ, Zhou L, Meng MB, Huang QR, Mo XM, Wei YQ, **Lu B**, **Dicker A**, Xue JX, Lu Y: Targeting myeloid-derived suppressor cells and programmed death Ligand 1 confers therapeutic advantage of ablative hypofractionated radiation therapy compared with conventional fractionated radiation therapy. *Int J Radiat Oncol Biol Phys*. 2018 May 1;101(1):74-87. PMID: 29619980
15. **Li T**, **Shukla G**, **Peng C**, Lockamy V, **Liu H**, **Shi W**: Dosimetric impact of a tumor treating fields device for glioblastoma patients undergoing simultaneous radiation therapy. *Front Oncol*. 2018 Mar 13;8:51. PMID: 29594036
16. Logothetis C, Morris MJ, **Den RB**, Coleman RE: Current perspectives on bone metastases in castrate-resistant prostate cancer. *Cancer Metastasis Rev*. 2018 Mar;37(1):189-96. **Review**. PMID: 29380085
17. Mahal BA, Yang DD, Wang NQ, Alshalalfa M, Davicioni E, Choeurng V, Schaeffer EM, Ross AE, Spratt DE, **Den RB**, Martin NE, Mouw KW, Orlo PF 3rd, Choueiri TK, Taplin ME, Trinh QD, Feng FY, Nguyen PL: Clinical and genomic characterization of low-prostate-specific antigen, high-grade prostate cancer. *Eur Urol*. 2018 Feb 22. [Epub ahead of print]. PMID: 29478736
18. McCall NS, **Dicker AP**, **Lu B**: Beyond concurrent chemoradiation: The emerging role of PD-1/PD-L1 inhibitors in stage III lung cancer. *Clin Cancer Res*. 2018 Mar 15;24(6):1271-76. PMID: 29358503
19. Rathore S, Akbari H, Doshi J, **Shukla G**, Rozycki M, Bilello M, Lustig R, Davatzikos C: Radiomic signature of infiltration in peritumoral edema predicts subsequent recurrence in glioblastoma: implications for personalized radiotherapy planning. *J Med Imaging (Bellingham)*. 2018 Apr;5(2):021219. PMID: 29531967

20. **Shi W**, Blomain ES, Siglin J, Palmer JD, Dan T, Wang Y, **Werner-Wasik M**, Glass J, Kim L, **Bar Ad V**, Bhamidipati D, Evans JJ, Judy K, Farrell CJ, Andrews DW: **Correction to:** Salvage-fractionated stereotactic re-irradiation (FSRT) for patients with recurrent high grade gliomas progressed after bevacizumab treatment. *J Neurooncol.* 2018 Mar;137(1):179. PMID: 29313182 (*original article PMID: 29235052*)
21. **Shi W**, Blomain ES, Siglin J, Palmer JD, Dan T, Wang Y, **Werner-Wasik M**, Glass J, Kim L, **Bar Ad V**, Bhamidipati D, Evans JJ, Judy K, Farrell CJ, Andrews DW: Salvage fractionated stereotactic re-irradiation (FSRT) for patients with recurrent high grade gliomas progressed after bevacizumab treatment. *J Neurooncol.* 2018 Mar;137(1):171-177. *Erratum in J Neurooncol.* 2018 Jan 8. PMID: 29235052
22. **Shi W**: Radiation therapy for melanoma. In: Ward WH, Farma JM editors. *Cutaneous Melanoma: Etiology and Therapy* [Internet]. Brisbane (AU): Codon Publications; 2017. Dec 21, Chapter 8. PMID: 29461772
23. **Song A, Lu B**: Utility of stereotactic ablative radiotherapy/stereotactic body radiation therapy in the setting of oligometastatic non-small cell lung cancer. *J Thorac Dis.* 2018 Feb;19(2):657-660. PMID: 29607130
24. **Thangavel C**, Boopathi E, Liu Y, McNair C, Haber A, Perepelyuk M, Bhardwaj A, Addya S, Ertel A, Shoyele S, Birbe R, Salvino JM, **Dicker AP**, Knudsen KE, **Den RB**: Therapeutic challenge with a CDK 4/6 inhibitor induces an RB-dependent SMAC mediated apoptotic response in non-small cell lung cancer. *Clin Cancer Res.* 2018 Mar 15;24(6):1402-14. PMID: 29311118

Invited Speaker/Presentations:

1. **Pramila Rani Anne` , M.D.:** Update on the role of radiation therapy for rectal cancer. Visiting Professor, Department of Radiation Oncology, Robert Wood Johnson School of Medicine, New Brunswick, New Jersey, January 2, 2018.
2. **Emily Hubley, M.S.,** Amy Harrison, Bo Lu, Robert B. Den: A dosimetric analysis of the potential pitfalls for ROI-based online CBCT auto-registration. Oral presented at the Canadian Organization of Medical Physics Winter School, Lake Louise, Alberta, Canada, February 12, 2018.
3. **Dario Rodrigues**, P. Maccarini, **Paul R. Stauffer:** Microwave radiometry for noninvasive monitoring of deep tissue temperature. International Microwave Symposium, Philadelphia, June 10-15, 2018.
4. **Gaurav Shukla, M.D., Ph.D.,** Christos Davatzikos, Andrew Sloan, Vinai Gondi: A single arm feasibility/phase II trial of targeted extended resection using radiomics-based predictive maps in newly diagnosed glioblastoma. Oral presentation, 2018 NRG Oncology Semi-Annual Meeting, Phoenix, AZ, January 26, 2018.
5. **Paul R. Stauffer, Dario B. Rodrigues, Mark D. Hurwitz:** Electromagnetic and thermal modeling for improved uniformity of heating from waterbolus coupled microwave waveguide applicators in superficial hyperthermia. International Microwave Symposium, Philadelphia, June 10-15, 2018.

6. **Paul R. Stauffer, Dario B. Rodrigues, R. Goldstein, Laura Doyle, Voichita Bar Ad, Wenyin Shi, Kevin D. Judy, Mark D. Hurwitz:** Dual modality implant for simultaneous magnetic nanoparticle heating and brachytherapy treatment of tumor resection cavities in brain. International Microwave Symposium, Philadelphia, June 10-15, 2018.
7. **Maria Werner-Wasik, M.D.:** Management of Stage III non-small cell lung cancer. **Visiting Professor.** Department of Radiation Oncology, University of Maryland, Baltimore, Maryland, January 10, 2018.
8. **Maria Werner-Wasik, M.D.:** Best of 2017 in lung cancer. Speaker, Annual University of Maryland Radiation Oncology Symposium, Baltimore, Maryland, January 11, 2018.

Abstracts - Annual Meetings:

1. J. Adamson, J. Carroll, **Michael Trager**, S. Yoon, J. Kodra, E. Maynaard, M. Hilts, M. Oldham, A. Jirasek: Proof of principle for end-to-end SRS QA using a NIPAM 3D dosimeter. **SNAP Oral Presentation.** 2018 Annual AAPM Meeting, Nashville, TN, July 29 – August 2, 2018.
2. Douglas Arthur, Jennifer Moughan, Henry Mark Kuerer, Bruce Haffty, Laurie Cuttino, Wendy Woodward, Dorin Todor, **Nicole Simone**, Penny Anderson, Eric Strom, Beryl McCormick, Randi Cohen, Walter Sahjidak, Ursula Matunlonis, Doris Brown, Adam Currey, Christine Fisher, Reshma Jagsi, Kathryn Winter, Julia White: NRG Oncology/RTOG 1014: Patient reported outcomes (PRO) and cosmesis from a phase II study of repeat breast preserving surgery and 3D conformal (3D-CRT) partial breast re-irradiation (PBri) for in-breast recurrence. **Oral Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.**
3. A. Bakker, **Paul R. Stauffer, Dario B. Rodrigues**, H.C. Creeze: Analysis of the required number of sensors for adequate monitoring of skin temperature distribution during superficial microwave hyperthermia. **Oral Presentation.** European Society of Hyperthermic Oncology, Berlin, Germany, May 16-19, 2018.
4. A. Bakker, **Paul R. Stauffer, Dario B. Rodrigues**, H.C. Creeze: Analysis of clinical data to determine the minimum number of sensors required for adequate skin temperature monitoring of superficial hyperthermia. **Oral Presentation.** Society of Therapy Medicine. Tucson, AZ, May 7-10, 2018.
5. **Shivank Garg**, Keenan Sobol, Murty Munn, **Gaurav Shukla**, Tyler Stumm, John Abraham, **Wenyin Shi:** Effect of radiation field size and dose on local control or re-fracture events after post-operative radiation following intramedullary nailing procedures for palliation of bone metastases. Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
6. D. Huang, I. Chervoneva, **Lilya Babinsky, Mark D. Hurwitz:** Application of forcing functions to electronic health records results in improved pain control for patients undergoing radiation therapy for bone metastases. Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
7. **Emily Hubley, Michael Trager, Laura Doyle:** A nomogram to determine required seed activity in planar cesium-131 permanent seed implants. Poster Discussion. 2018 Annual AAPM Meeting, Nashville, TN, July 29 – August 2, 2018.

8. **Emily Hubley**, G. Peirce, A. Hudson, C. Bojchko: Effects of gantry speed, breathing rate, and duty cycle on treatment efficiency for respiratory-gated VMAT. **Oral Presentation**. 2018 Annual AAPM Meeting, Nashville, TN, July 29 – August 2, 2018.
9. Martin T. King, Paul L. Nguyen, Ninjin Boldbaatar, David D. Yang, Clare M. Tempany, Robert A. Cormack, Clair J. Beard, **Mark D. Hurwitz**, W. Warren Suh, Anthony V. D'Amico, Peter F. Orio: PSA Velocity before biochemical failure is associated with distant metastasis after partial prostate treatment with brachytherapy. Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
10. **Jun Li, Yan Yu, Haisong Liu**: Use eclipse treatment planning system as quality assurance tool to verify multiple-metastases-elements treatment planning. Poster Discussion. 2018 Annual AAPM Meeting, Nashville, TN, July 29 – August 2, 2018.
11. **Anne Lowther, Gregor Manukian, Caitlin Tapper, Daniel Clancy**: Assessing nursing knowledge in radiation therapy. Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
12. **Gregor Manukian**, Emily Spencer, **Jamie William-son, Anne Lowther, Maria Werner-Wasik**: Assessing health care personnel experiences with a telephone-based interpreter service for patients with limited English proficiency. Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
13. **Joseph Marascio**, Matthew Bloom, Elai Davicioni, Liyang Dai, Kasra Yousefi, **Mark Hurwitz**, Leonard Gomella, Costas Lallas, Edouard Trabulsi, Mark Mann, James Mark, Anne Calvaresi, William Kelly, Jean Hoffman-Censits, James Godwin, **Adam Dicker, Robert Den**: Can genomic classifiers be used to identify those appropriate for observation despite high risk pathologic features following radical prostatectomy? Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
14. **Dario B. Rodrigues**, J. Ellsworth, **Paul R. Stauffer, Mark D. Hurwitz**, P. Turner: feasibility of heating brain tumors using a 915MHz annular phased array with 72 dipole antennas in a 3-ring configuration. **Oral Presentation**. Society of Therapy Medicine. Tucson, AZ, May 7-10, 2018.
15. **Brittany Simone**, Kristin Campbell, Jason Molitoris, Yuanyuan Han, Yimei Li, Zoltan Patay, Alberto Broniscer, Thomas Merchant, Christopher Tinkle: Patterns of disease progression after conformal radiation therapy for diffuse intrinsic pontine glioma. Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
16. **Brittany Simone, Gregor Manukian**, Kevin Ko, Tiziana DeAngelis, Saveri Bhattacharya, Adam Berger, **Nicole Simone**: Harnessing metabolism with radiation therapy to modulate host immunity in the tumor microenvironment. **Oral Presentation**. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
17. **Andrew Song**, Ashley Gochoco, Joya Sahu, Onder Alpdogan, Pierluigi Porcu, Tingting Zhan, **Wenyin Shi**: Condensed low dose total skin electron beam therapy for mycosis fungoides: a single institution experience. Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
18. **Andrew Song**, Sonia Gowda, Lyndon Kim, **Maria Werner-Wasik**, David Andrews, Jon Glass, Kevin Judy, Christopher Farrell, **Wenyin Shi**: Severe lymphoma after chemoradiation

treatment is associated with worse survival in patients with newly diagnosed GBM. Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.

19. **Andrew Song**, Jenny Guo, Nathaniel Evans, Scott Cowan, Tingting Zhan, **Maria Werner-Wasik**: Stereotactic body radiation therapy (SBRT) for patients with stage I non-small cell lung cancer is applicable to more tumors than sublobar resection. Poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.
20. **Michael Trager, Pierre Charpentier, Maria Werner-Wasik, Yan Yu**: Planning efficiency study of a treatment planning based Plan Evaluation Software. Poster Discussion. 2018 Annual AAPM Meeting, Nashville, TN, July 29 – August 2, 2018.
21. **Michael Trager, Pierre Charpentier**: Low-resource vendor-independent coplanar patient clearance verification tool. ePoster Discussion. 2018 Annual AAPM Meeting, Nashville, TN, July 29 – August 2, 2018.
22. **Michael Trager, Karen Mooney**: Multi-vendor evaluation of inter-CBCT protocol registration variations. ePoster Discussion. 2018 Annual AAPM Meeting, Nashville, TN, July 29 – August 2, 2018.
23. Jianxin Xue, **Shisuo Du, Adam P. Dicker**, You Lu, **Bo Lu**: Anti-PD-1 immunotherapy potentiates the radiation-induced lung injury. e-poster Presentation. 2018 ASTRO Annual Meeting, San Antonio, TX, October 21-24, 2018.

Abstracts Submitted for Annual Meetings:

1. David Andrews, Kevin Judy, Larry Harshyne, Lawrence Kenyon, Kiran Talekar, Adam Flanders, Jon Glass, Lyndon Kim, Nina Martinez, **Wenyin Shi, Maria Werner-Wasik**, Mikhail Prosnik, Mark Curtis, Rhonda Kean, Aurore LeBrun, Samantha Garcia, Sami Sauma, Kara Pigott, Charles B. Scott, D. Craig Hooper: Trial in Progress: Phase 1b prospective randomization of four autologous cell vaccine dose cohorts for the initial treatment of glioblastoma (GBM). IND 14379-102, NCT02507583. *Submitted for June, 2018 ASCO Annual Meeting.*
2. Nathan R. Evans, Scott Cowan, Charalambos Solomides, D. Craig Hooper, Larry Harshyne, Grace L. Lu-Yao, Hushan Yang, Pinda Phan, Dawn Poller, Benjamin Leiby, **Maria Werner-Wasik, Bo Lu**, Jennifer Maria Johnson, Rita Susan Axelrod, Athanassios Argiris, Ralph Zinner: Nivolumab plus cisplatin/pemetrexed or cisplatin/gemcitabine as induction in resectable NSCLC. *Submitted for June, 2018 ASCO Annual Meeting.*

Presentations:

1. **Brittany A. Simone, Tiziana DeAngelis, Ajay Palagani**, Kevin Ko, Larry Harshyne, D. Craig Hooper, **Adam P. Dicker, Simone L. Simone**: Caloric restriction promotes antitumor immunity through polarization of intratumoral macrophages to M1 phenotype via downregulation of miR-21. **Poster Presentation.** American Association for Cancer Research Annual Meeting, April 14-18, 2018, Chicago, IL.
2. **Paul R. Stauffer, Dario B. Rodrigues**, R. Goldstein, T. Nguyen, A. Dorion, **Laura Doyle, Voichita Bar Ad, Wenyin Shi, Kevin D. Judy, Mark D. Hurwitz**: Initial assessment of

simultaneous magnetic nanoparticle hyperthermia and brachytherapy of at-risk tissue surrounding a brain tumor resection cavity. Society of Thermal Medicine, Tucson, AZ, May 7-10, 2018.

Awards and Honors:

1. **Adam P. Dicker, M.D., Ph.D., FASTRO:** Appointed to the faculty of the 2018 American Society of Clinical Oncology/American Association for Cancer Research (ASCO/AACR) Methods in Clinical Cancer Research Workshop, Vail, Colorado, July 29-August 4, 2018.
2. **Shivank Garg, M.D.:** Selected to be a member of the Gold Humanism Honor Society Residency Chapter of Thomas Jefferson University, March 1, 2018.
3. **Gaurav Shukla, M.D., Ph.D.:** RSNA Clinical Trials Methodology Workshop Participant (competitive selection process), Coronado, CA, January 6-12, 2018.
4. **Brittany Simone, D.O.:** American Association for Cancer Research (AACR) – Takeda Oncology Scholar in Training Award: Caloric restriction promotes antitumor immunity through polarization of intratumoral macrophages to M1 phenotype via downregulation of miR-21. AACR Annual Meeting, April 14-18, 2018.
5. **Thomas Jefferson University Hospital** named NRG Oncology #3 top accruing main member site for calendar year 2017, January 25, 2018.
6. **Noelle Williams, M.D.:** Featured in ASTRO Blog: Radiation oncologists benefit from clinical trial course in Vail, Colorado. February 21, 2018.

Appointments and Promotions:

Shuying Wan, Ph.D: Appointed to the faculty of the Sidney Kimmel Cancer Center at the rank of Assistant Professor, Division of Medical Physics, Department of Radiation Oncology, February 23, 2018.