Curriculum Vitae

Zaker H. Rana, MD

Assistant Professor, Department of Radiation Oncology

University of Maryland School of Medicine

**Date** November 11, 2020

**Contact Information**

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**Education**

2006-2009 B.S., Neuroscience, College of William and Mary

2009-2010 Foundation for Advanced Education in the Sciences (FAES) at NIH

2010-2015 M.D., Howard University College of Medicine

**Post Graduate Education and Training**

2015-2016 Internship, Riverside Regional Medical Center

2016-2020 Residency, Radiation Oncology, Northwell Health

2019-2020       Co- Chief Resident, Department of Radiation Oncology, Northwell Health

**Certifications**

In progress American Board of Radiology

**Medical Licensures**

2020 Active, Maryland

**Professional Society Membership**

2010-present General Member, Student National Medical Association

2015-present General Member, American Society for Radiation Oncology

2016-present General Member, American College of Radiology

**Honors And Awards**

2009 Post-baccalaureate Intramural Research Training Award, National Institutes of Health

2011 Clinical Research Award, Riverside Regional Medical Center

**Clinical Activities**

**Clinical Expertise**

Clinical training in 3D-Conformal and Intensity-Modulated External Beam Radiation Therapy

Image-Guided Radiation Therapy

Stereotactic Radiosurgery (including Gamma Knife and CyberKnife)

Motion Management and Multi-Modality Treatment Planning (4DCT, MRI, PET)

Stereotactic Body Radiation Therapy (VMAT/CyberKnife)

LDR and HDR Intracavitary and Interstital Brachytherapy

Transrectal Prostate seed implantation utilizing Palladium-103

Proton Beam Treatment Planning

Prostate fiducial and SpaceOAR placement

Unsealed Source Administration (Ra-223, Y-90, I-131)

**National Service**

2015-present *Ad Hoc* Reviewer, Urologic Oncology: Seminars & Original Investigators *(1x/yr)*

**Publications**

**Peer-reviewed journal articles**

1. Moya P., Dodman N., Timpano K., Rubenstein L., **Rana Z**., Fried R., Reichardt L., Heiman G., Tischfield J., King R., Galdzicka M., Ginns E., Wendland J. (2013). Rare Missense Neuronal Cadherin Gene (CDH2) Variants in Specific Obsessive-Compulsive Disorder and Tourette Disorder Phenotypes. *European Journal of Human Genetics.* **21,** 850–854; doi: 10.1038/ejhg.2012.245.
2. **Rana Z.**, Cyr R., Chen L., Kim B., Moures R., Yung T., Lei S., Collins B., Suy S., Dritschilo A., Lynch J., Collins S. (2014). Improved Irritative Voiding Symptoms Three Years After Stereotactic Body Radiation Therapy for Prostate Cancer. *Frontiers in Radiation Oncology*. DOI: 10.3389/fonc.2014.00290
3. **Rana Z**., Tkacuk K., Kesmodel S., Cheston S., Feigenberg S. (2015). Radiation Therapy Following a Positive Sentinel Lymph Node Biopsy: A Radiation Oncologist’s Dilemma*.* *Applied Radiation Oncology*. *March 2015* (http://appliedradiationoncology.com/radiation-therapy-positive-sentinel-lymph-node-biopsy-radiation-oncologists-dilemma/)
4. **Rana Z**., Nasr N., Ji H., Lorio V., Akbari S., Sebastian M., Hong R. (2014). Comparative Dosimetric Findings Using Accelerated Partial Breast Irradiation Across Five Catheter Subtypes. *Radiation Onoclogy, July 2015*. DOI: 10.1186/s13014-015-0468-7
5. **Rana Z**., Hong R., Abugideiri M., Mordkin R., Joel A., Bernstein G., McRae D., Nasr N. (2015). Sexual, Irritative, and Voiding Outcomes, Following Stereotactic Body Radiation Therapy for Prostate Cancer*. Radiation Oncology. August 2015.* DOI: 10.1186/s13014-015-0488-3
6. Kelley, K., Racareanu, R., Gogineni, E., **Rana Z.**, Gandhi, S., Latefi, A., Ghaly, M. Outcomes in the radiosurgical management of metastatic spine disease. *Advances in Radiation Oncology.* April 2019 DOI: 10.1016/j.adro.2018.10.007
7. Dawley, T**., Rana Z.**, Abou-Al-Shaar H., Goenka, A., Schulder, M. Major complications from radiotherapy following treatment for atypical meningiomas. *Journal of Neurosurgery.* June 2019. DOI: 10.3171/2019.3.FOCUS1930.
8. Gogineni, E., Zhang, I., **Rana, Z.**, Marrero, M., Gill, G., Riegel, A., Teckie, S., Ghaly, M.(2019) Quality of Life Outcomes Following Organ-Sparing SBRT in Previously Irradiated Recurrent Head and Neck Cancer. *Frontiers in Radiation Oncology*
9. Potters, L. **Rana, Z.**, Lee, L., Cox, B. Outcomes of a Dose-Escalated Stereotactic Body Radiation Phase 1 Trial for Patients With Low- and Intermediate-Risk Prostate Cancer *International Journal of Radiation Oncology\*Biology\*Physics*. June 2019. DOI: https://doi.org/10.1016/j.ijrobp.2019.01.092

**Submitted or In-Revision Peer-reviewed journal articles**

1. Vempati, P., Halthore, A., Teckie, S., **Rana, Z.**, Antone, J., Zhang, H., Paul, D., Ghaly, M. (2019) Phase I/II Trial of Dose-Escalated Stereotactic Radiosurgery (SRS) Boost for Unfavorable Locally Advanced Oropharyngeal Cancer (Submitted)

**Book Chapters**

1. **Rana, Z.**, Cox, B., Lee, L., Potters, L. (2019) Radiation Therapy: Brachytherapy

In Press book chapter for *Interventional Urology* Editors: Rastinehad, A.R., Siegel, D.N., Pinto, P.A., Wood, B.J.

**Major Invited Speeches**

National

1. **Rana Z**., Hong R., Han J., Chen L., Nurhussien M., Nasr N. (2014). Imaging Modality Effect on Treatment Planning and the Pathological Complete Response Rate in Rectal Adenocarcinoma*. Howard University Radiology Annual Imaging Symposium. Washington, DC.* Oral
2. **Rana Z.,** Hong R., Han J., Chen L., Nurhussien M., Nasr N. (2014). The Effect of MRI or PET Fusion in Radiotherapy Treatment Planning on the Pathological Complete Response Rate in Rectal Adenocarcinoma. *Radiological Society of North America (RSNA). Chicago, IL.* Oral
3. **Rana Z**., Nasr N., Ji,H., Lorio V., Akbari S., Sebastian M., Hong R. (2015). Strut-based Vs. Balloon-based Brachytherapy: Hotspots, Skin Doses, and Rib Doses. *American Brachytherapy Society (ABS). Orlando, FL.* Oral
4. Asher, D., **Rana, Z**., Bergman, D., Rajeurs, A., Richardson, M., Spencer, K., Kersh, R. (2016). Stereotactic Body Radiation Therapy for Liver Metastases: A Single Institution Experience. *Radiosurgery Society (RSS); Orlando, FL.* Oral
5. **Rana, Z.,** Potters, L., Lee, L., Cox, B. (2018). Outcomes of a Dose-Escalated Stereotactic Body Radiation Phase I/II Trial for Patients with Low- and Intermediate-Risk Prostate Cancer. *American Radium Society (ARS); Orlando, FL.* Oral

International

1. Gogineni, E., Wotman, M., **Rana Z.**, Karten, J., Frank, D., Paul, D., Ghaly, M. (2019). Using the G8 screening tool to predict quality adjusted survival for elderly head and neck (H&N) cancer patients treated with stereotactic body radiotherapy (SBRT). International Stereotactic Radiosurgery Society. *Rio De Janeiro, Brazil.* Oral
2. Gogineni, E., **Rana Z.,** Vempati, P., Karten, J., Frank, D., Paul, D., Ghaly, M. (2019). Stereotactic Body Radiotherapy (SBRT) for head and neck cancers in previously unirradiated medically unfit patients. *Rio De Janeiro, Brazil.* Oral
3. Gogineni, E., **Rana Z.,** Vempati, P., Karten, J., Frank, D., Paul, D., Ghaly, M. (2019). Safety and efficacy of repeat stereotactic body radiotherapy (SBRT) for local recurrence of head and neck cancer after initial SBRT. *Rio De Janeiro, Brazil.* Oral

**Proffered Communications**

**National**

1. **Rana, Z**., Zafar S., Ortega G. Fullum T. (2013). Diagnosis and Management of a Delayed Ureteral Injury following Left Hemicolectomy; A Case Presentation and Review of the Literature. *Howard University Annual Research Symposium; Washington DC.* Poster
2. Wright J., **Rana Z**., Majeed R., Branchcomb J., Wright D., Rowe J., Alvarez J., Vaughn A., Ward A., Sartip K., Davis B., Duerinckx A. (2013). There’s An App For That: Popular Apps Used to Enhance Radiology Practice. *NMA Annual Convention and Scientific Assembly; Toronto, ON.* Poster
3. Vaughn A., Branchcomb J., Majeed R., Wright D., East J., **Rana Z.,** Kim H., Davis B., Taddesse-Heath L., Irrinki K., Kark J., Manchandani R., Myers E., Duerinckx A., Sartip K. (2013). Extranodal Lymphoma in the Head and Neck: Imaging Review with Histopathologic Correlation. *NMA Annual Convention and Scientific Assembly; Toronto, ON.* Poster
4. **Rana Z**., Hong R., Han J., Chen L., Nurhussien M., Nasr N. (2014). Imaging Modality Effect on Treatment Planning and the Pathological Complete Response Rate in Rectal Adenocarcinoma*.* *Howard University Radiology Annual Imaging Symposium. Washington, DC.* Poster
5. **Rana Z**., Hong R., Han J., Chen L., Nurhussien M., Nasr N. (2014). The Effect of MRI or PET Fusion in Radiotherapy Treatment Planning on the Pathological Complete Response Rate in Rectal Adenocarcinoma*.* *Radiological Society of North America (RSNA). Chicago, IL.* Poster
6. **Rana Z**., Hong R., Mordkin R., Joel A., Bernstein G., McRae D., Nasr N. (2014). Factors Affecting Patient Reported Outcomes Following Cyberknife Stereotactic Body Radiotherapy for Prostate Cancer*. American Society for Radiation Oncology (ASTRO). San Francisco, CA.* Poster
7. **Rana Z**., Nasr N., Ji,H., Lorio V., Akbari S., Sebastian M., Hong R. (2015). Strut-based Vs. Balloon-based Brachytherapy: Hotspots, Skin Doses, and Rib Doses. *American Brachytherapy Society(ABS).Orlando, FL.* Poster
8. Asher, D., **Rana, Z**., Bergman, D., Rajeurs, A., Richardson, M., Spencer, K., Kersh, R. (2016). Stereotactic Body Radiation Therapy for Liver Metastases: A Single Institution Experience. *Radiosurgery Society (RSS); Orlando, FL.* Poster
9. **Rana Z**., Chen L., Kim J., Moures R., Yung T., Lei S., Collins B., Suy S., Dritchilo A., Collins, S. (2014). Improved Irritative Voiding Symptoms Three Years After Stereotactic Body Radiation Therapy for Prostate Cancer. *American Society for Radiation Oncology (ASTRO). San Francisco, CA.* Poster
10. **Rana Z**., Nasr N., Ji,H., Lorio V., Akbari S., Sebastian M., Hong R. (2014). Factors Improving Skin Sparing, Rib Sparing, and D95 Coverage in Accelerated Partial Breast Irradiation Across Five Catheter Subtypes. *American Society for Radiation Oncology (ASTRO). San Francisco, CA.* Poster
11. **Rana Z**., Hong R., Mordkin R., Joel A., Bernstein G., McRae D., Nasr N. (2014). Cyberknife Stereotactic Body Radiotherapy for Prostate Cancer: The Virginia Hospital Center Experience. *Radiosurgery Society (RSS). Minneapolis, MN.* Poster
12. **Rana Z**., Snider, J.W., Regine, W. (2015). The Effect of Planning Target Volume on Acute Gastrointestinal Toxicity following Intensity-Modulated Radiation Therapy. *American Society for Radiation Oncology (ASTRO). San Antonio, TX.* Poster
13. Hyder, J., **Rana, Z.,** Snider, J.W., Amin, P. P., Vujaskovic, Z. (2015). Concurrent External Thermal Therapy (ETT) and Radiation Therapy (RT) Yields Increased Efficacy with Modest Toxicity: A Single Institution Experience. *American Society for Radiation Oncology (ASTRO). San Antonio, TX.* Poster
14. **Rana Z**., Abugideiri M. Hong R., Mordkin R., Joel A., Bernstein G., McRae D., Nasr N. (2015). The Impact of Patient Characteristics on Voiding Symptoms, Irritative Symptoms, and Sexual Function Following Stereotactic Body Radiotherapy for Prostate Cancer. *American Society of Clinical Oncology: Genitourinary Symposium (ASCO-GU). Orlando, FL.* Poster
15. **Rana Z**., Hong R., Han J., Chen L., Nurhussien M., Nasr N. (2015). The Effect of MRI or PET Fusion in Radiotherapy Treatment Planning on the Pathological Complete Response Rate in Rectal Adenocarcinoma*.* *American Society of Clinical Oncology: Gastrointestinal Symposium (ASCO-GI). Chicago, IL.* Poster
16. **Rana, Z.**, Asher, D., Spencer, K., Richardson, M., McAlliister, W., Kersh, R. (2016). Treatment of Prognostically Favorable Peripheral Nerve Sheath Tumors: A Single Institution Experience. *American Radium Society (ARS). Philadelphia, PA.* Poster
17. **Rana, Z.,** Ghaly, M., Kelley, K., Meshrekey, R., Knisely, J. (2017). The Effect of Vertebral Endplate Involvement on Spine Radiosurgery Outcomes. *American Society for Radiation Oncology (ASTRO). San Francisco, CA.* Poster
18. **Rana, Z**., Asher, D., Bergman, D., Rajeurs, A., Richardson, M., Spencer, K., Kersh, R. (2017). Stereotactic Body Radiation Therapy for Gynecologic Metastases to the Liver. *American Radium Society (ARS). Colorado Springs, CO.* Poster
19. Cox, B. **Rana, Z.,** Lee, L., Potters, L., (2018). Outcomes of a Dose-Escalated Stereotactic Body Radiation Phase I/II Trial for Patients with Low- and Intermediate-Risk Prostate Cancer.*American Society for Radiation Oncology (ASTRO). San Antonio, TX.* Poster
20. **Rana, Z.,** Lee, L., Potters, L., Cox, B. (2018). Biochemical and Toxicity Outcomes Following Dose Escalated Stereotactic Body Radiotherapy to 42.5 Gy for Prostate Cancer. *American Society for Radiation Oncology (ASTRO). San Antonio, TX.* Poster
21. **Rana, Z.,** Potters, L., Lee, L., Cox, B. (2018). Decreased PSA Nadir as a Result of Dose-Escalated Stereotactic Body Radiation for Patients with Low- and Intermediate-Risk Prostate Cancer. *American Society of Clinical Oncology (ASCO). Chicago, IL.* Poster
22. **Jones, S**. D Rana, Z., Dawley, T., Goenka, A., Schulder, M. (2019). Frame-based and Masked Stereotactic Radiosurgery: A Patient Experience Comparison with the Gamma Knife Icon. *World Society for Stereotactic and Functional Neurosurgery. New York, NY.* Poster
23. Viswanatha, S., **Rana, Z.**, Ehrlich, M., Schulder, M., Goenka, A. (2019). Defining Progression in Patients Treated with Ten or More Brain Metastases following Stereotactic Radiosurgery. *Society for Neuro-oncology’s inaugural Conference on Brain Metastases. New York, NY.* Poster
24. **Rana, Z.**, Dawley. T, Schulder, M., Goenka, A. (2019). Outcomes after gamma knife radiosurgery for intracranial meningiomas. *American Radium Society (ARS). Dana Point, CA.* Poster
25. Guest, D., Polce, S., **Rana, Z.**, Bloom, B., Potters, L., Parashar, P. (2019). Predicting clinical outcomes for geriatric patients after radiation therapy treatment using Artificial intelligence (Machine Learning). *American Society for Radiation Oncology (ASTRO). Chicago, IL.* Poster
26. Gogineni, E., **Rana Z.,** Vempati, P., Karten, J., Frank, D., Paul, D., Ghaly, M. (2019). Stereotactic Body Radiotherapy as Primary Treatment for Medically Unfit Patients with Head and Neck Cancer. *American Society for Radiation Oncology (ASTRO). Chicago, IL.* Poster
27. Gogineni, E., Wotman, M., **Rana Z.**, Karten, J., Frank, D., Paul, D., Ghaly, M. (2019). Impact of Stereotactic Body Radiation Therapy on Assessment and Management for Older Adults with Head and Neck Cancer. *American Society for Radiation Oncology (ASTRO). Chicago, IL.* Poster
28. Gogineni, E., **Rana, Z.**, Riegel, A., Gabalski, L., Seetharamu, S., Ghaly, M. (2019). Safety and Efficacy of Repeat Stereotactic Body Radiotherapy (SBRT) for Local Recurrence of Head and Neck Cancer after Initial SBRT. *American Society for Radiation Oncology (ASTRO). Chicago, IL.* Poster
29. Dawley, T., **Rana, Z.**, Goenka, A., Schulder, M. (2019). Framed versus Masked Stereotactic Radiosurgery: A Patient Experience Comparison. *American Society for Radiation Oncology (ASTRO). Chicago, IL.* Poster
30. **Rana, Z.**, Gogineni, E., Mark, D., Vempati, P., Latefi, A., Ghaly, M. (2019). Outcomes of a prospective trial utilizing kypho-IORT. *American Society for Radiation Oncology (ASTRO). Chicago, IL.* Poster
31. **Rana, Z.**, Gogineni, E., Dawley, T., Schulder, M., Goenka, A. (2019). Outcomes after Gamma Knife Radiosurgery and Fractionated Radiation Treatment for Intracranial Meningiomas. *American Society for Radiation Oncology (ASTRO). Chicago, IL.* Poster
32. **Rana, Z.**, D’Andrea, V., Cox, B., Lee, L., Potters, L., (2019). Salvage brachytherapy for recurrent prostate cancer after definitive radiation treatment and factors that may impact outcomes. *American Society for Radiation Oncology (ASTRO). Chicago, IL.* Poster
33. Vempati, P., **Rana, Z.**, Gogineni, E., Teckie, S., Sharma, R., Ghaly, M. (2019). Prospective duodenal sparing improves therapeutic index in pancreatic SBRT. *American Society for Radiation Oncology (ASTRO). Chicago, IL.*Poster

**Explanation of Time Gaps on CV**

From 2009-2010 received a research grant for *one year of full-time clinical research for Dr. Dennis Murphy.* Conducted proteomic analysis, isolated and raised human lymphocyte cultures,
and contributed to various behavioral studies working with mice. Led a project correlating head trauma and obsessive compulsive disorder.Continued education through postsecondary school at the Foundation for Advanced Education in the Sciences (FAES).

From 2013-2014 did an extended research period between 3rd and 4th year of medical school. Worked at University of Maryland’s department of radiation oncology working with Dr. William Regine and Dr. Steven Feigenberg and Georgetown University’s department of radiation oncology working with Dr. Sean Collins.