BIOGRAPHICAL SKETCH

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NAME: Ravi A. Chandra, MD, PHD

eRA COMMONS USER NAME (credential, e.g., agency login): RACHANDRA

POSITION TITLE: Assistant Professor of Radiation Medicine & Otolaryngology-Head and Neck Surgery (by courtesy), Oregon Health & Science University (OHSU)

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Stanford University	BS	06/2002	Chemistry, Biological Sciences
University of California, Berkeley	PhD	05/2007	Chemistry
Johns Hopkins University	MD	05/2011	Medicine
University of Maryland/Mercy Medical Center		06/2012	Internship (Internal Medicine)
Harvard Radiation Oncology Program/Harvard Medical School		06/2016	Residency/Clinical Fellowship (Radiation Oncology)

A. Personal Statement

I am a clinician-scientist at OHSU focused on treating tumors of the head and neck and central nervous system, in addition to maintaining a general adult radiation oncology practice. I am very interested in patient and interprofessional education, and in the teaching of learners at all levels. I've taken on leadership roles within these spheres and contribute actively to education initiatives across the institution. My research interests are primarily translational in focus and consist of the following: participation in cooperative and institutional clinical trials, biomarker studies, outcomes research, medical education, and patient satisfaction/experience/digital health research. I am especially interested in serving as the "bridge" between scientists in the lab and the patients I treat in the clinic.

B. Positions and Honors

Positions

2000-2002 **Undergraduate Student Researcher** (Eric T. Kool, PhD, PI), Department of Chemistry, Stanford University, Stanford, CA

2002-2007 **Graduate Student Researcher/National Science Foundation Fellow** (Carolyn R. Bertozzi, PhD & Matthew B. Francis, PhD, PIs), Department of Chemistry and Howard Hughes Medical Institute, University of California, Berkeley, Berkeley, CA

2008 **Summer Research Fellow** (Michael Lim, MD & Jaishri O. Blakeley, MD, PIs), Departments of Neurosurgery and Neurology, Johns Hopkins Hospital, Baltimore, MD

2010-2011 **Medical Student Researcher** (Joseph M. Herman, MD, PI), Department of Radiation Oncology and Molecular Radiation Sciences, Johns Hopkins Hospital, Baltimore, MD

2011-2012 **Intern in Internal Medicine**, University of Maryland/Mercy Medical Center, Baltimore, MD

2012-2016 **Resident/Clinical Fellow in Radiation Oncology**, Harvard Radiation Oncology Program/Harvard Medical School, Boston, MA

2013-2015 **Clinical Researcher** (Anthony V. D'Amico, MD, PhD, Alphonse G. Taghian, MD, PhD, Jonathan D. Schoenfeld, MD, MPH, PIs), Departments of Radiation Oncology, Dana-Farber Cancer Institute/Brigham and Women's Hospital and Massachusetts General Hospital, Boston, MA

2014-2016 **Holman Research Fellow** (Ralph Weissleder, MD, PhD, PI), Departments of Radiology and Systems Biology, Harvard Medical School, and Center for Systems Biology, Massachusetts General Hospital, Boston, MA

2016-2019 **Radiation Oncologist/Medical Director**, Compass Oncology/US Oncology, Portland, OR

2018-2019 **Clinical Assistant Professor (adjunct)**, Department of Radiation Medicine, OHSU, Portland, OR

2019- **Assistant Professor**, Department of Radiation Medicine, OHSU, Portland, OR

2020- **Assistant Professor,** Department of Otolaryngology-Head and Neck Surgery (by courtesy), OHSU, Portland, OR

Honors

Outstanding Reviewer Award, *Advances in Radiation* Oncology (2020); Selectee/Participant, OHSU Pathways to Leadership (2020); Awardee, OHSU School of Medicine Clinical Leadership Grant (2020); Outstanding Reviewer Award, *International Journal of Radiation Oncology*Biology*Physics* (2019); "Interdisciplinary Excellence in Teaching Award," OHSU Department of Radiation Medicine (2018, 2019); Selectee, US Oncology Physician Leadership Development Program (2018); Selectee, American Board of Radiology Holman Research Pathway (2014); Selectee/Participant, AACR Molecular Biology in Clinical Oncology Workshop (2014); Clinical Research Training Fellowship, NIH/Johns Hopkins School of Medicine (2008); Dean's Summer Research Scholarship, Johns Hopkins School of Medicine (2008); National Science Foundation Graduate Research Fellowship (2003); "Outstanding Graduate Student Instructor" Teaching Award, University of California, Berkeley (2003); Cardinal Class Core Selectee, Stanford Alumni Association (2002); Honors Program, Stanford Department of Chemistry (2001); Bing Fellowship, Stanford Department of Chemistry (2000, 2001).

Other Professional Activities

- Administrative/Leadership: Director of Head and Neck Radiation Oncology, OHSU Department of Radiation Medicine; Director of Interprofessional Education, OHSU Department of Radiation Medicine; Associate Director of Residency Training Program, OHSU Department of Radiation Medicine, Interim Radiation Oncology Medical Director, OHSU Knight Cancer Institute Beaverton.
- Teaching: Medical Student Foundations Block Director, OHSU School of Medicine, Faculty, OHSU Department of Radiation Medicine Residency Didactic Series; Clinical Preceptor, OHSU School of Medicine; Mock Oral Examiner, OHSU Department of Radiation Medicine; Faculty/Section Leader, OHSU School of Medicine, Clinical Skills Lab; Course Faculty/Minicase Leader, Harvard Medical School Pharmacology Course; Course Lecturer, Suffolk University Oncology and Pathology Course (Radiation Therapy and Medical Physics Residents). Past as a teaching assistant, Lecturer of Chemistry, and Guest Lecturer in Chemistry.
- Service: Admissions Committee Member and Interviewer Subcommittee Chairman, OHSU School of Medicine, Scientific Advisory Board, Siris Medical, Inc. and Anaveon AG; Co-Founder & Faculty Host, Virtual Oncology Global Conference, Editorial Board Member, *American Journal of Clinical Oncology*, *Ad hoc* Reviewer, *International Journal of Radiation Oncology*Biology*Physics, JAMA Oncology, others*; several ABR and ASTRO committees; Faculty Member, Radiation Oncology Education Collaborative Study Group Leadership Committee; Oregon Radiation Oncology Society.
- Certificates/Training: Certificate in Applied Biostatistics, Harvard Catalyst Postgraduate Education Program; Gamma Knife Radiosurgery Training Course, University of Pittsburgh, Business of Medicine "Pocket MBA" Certificate, Johns Hopkins Medicine Online
- Other: Member, Translational Oncology Program, Knight Cancer Institute

C. Contributions to Science

Translational

In my training and early career, I have focused on using chemistry to probe and exploit biological systems. I worked as an undergraduate with Stanford Chemistry Professor Eric Kool on synthesizing small nanocircles of

DNA to elongate telomeres in living cells. As a National Science Foundation Graduate Research Fellow, I then pursued a Chemistry PhD in the lab of UC-Berkeley Chemistry Professor Carolyn Bertozzi, where I developed a new technology for patterning living cells on microchips. My graduate research project – which involved synthetic chemistry, cell biology, and bioengineering – helped pave the way for tissue engineering, biosensing, and screening experiments still ongoing in several labs, and for founding of a company commercializing the technology. In the basic research-focused phase of my residency training, I drew upon my chemical biology and clinical experience by addressing translational questions in the lab of Ralph Weissleder in the Center for Systems Biology at Massachusetts General Hospital/Harvard Medical School. My work leveraged nanotechnology to quantify and augment the response to radiation therapy. I initiated a clinical trial collecting exosomes from patients with Glioblastoma multiforme to quantify treatment response and also published work in Science Translational Medicine on using radiation to augment the delivery of nanoparticles to mouse tumor xenografts.

- Lindström UM, **Chandrasekaran RA**, Orbai L, Helquist SA, Miller GP, Oroudjev E, Hansma HG, Kool ET. Artificial Human Telomeres from DNA Nanocircle Templates. Proceedings of the National Academy of Sciences of the United States of America. 2002; 99(25):15953-15958.
- **Chandra RA**, Douglas ES, Mathies RA, Bertozzi CR, Francis MB. Programmable Cell Adhesion Encoded by DNA Hybridization. Angewandte Chemie International Edition. 2006; 45(6):896-901.
- **Chandra RA**. Writing Cells with DNA: Engineering Patterns of Living Cells on Synthetic Surfaces. Germany: VDM Verlag; 2008. (ISBN: 978-3639077452)
- Miller MA, **Chandra RA**, Cuccarese MF, Pfirschke C, Engblom C, Stapleton S, Adhikary U, Kohler RH, Mohan JF, Pittet MJ, Weissleder, R. Radiation Therapy Primes Tumors for Nanotherapeutic Delivery Via Macrophage-Mediated Vascular Bursts. Science Translational Medicine. 2017; 9(392): eaal0225: 12pp. (DOI: 10.1126/scitranslmed.aal0225).

Clinical

More recently, my work has focused on the design and development of prospective clinical trials (both multi-institutional and local), retrospective series, and patient experience/quality. My aim is to use my translational/basic science background to inform these projects. As many of these projects are ongoing, my selected publications highlight skills, topic areas, and contributions that are relevant to this sort of work.

- **Chandra RA**, Chen M-H, Zhang D, Loffredo M, D'Amico AV. Age, Comorbidity, and the Risk of Prostate Cancer-Specific Mortality in Men with Biopsy Gleason Score 4 + 3: Implications on Patient Selection for Multiparametric MRI. Clinical Genitourinary Cancer. 2015; 13(4): 400-405.
- **Chandra RA***, Wilhite TJ*, Balboni TA, Alexander BM, Spektor A, Ott PA, Ng AK, Hodi FS, Schoenfeld JD. A Systematic Evaluation of Abscopal Responses Following Radiotherapy in Patients With Metastatic Melanoma Treated With Ipilimumab. Oncoimmunology. 2015; 4(11): e1046028: 7 pp. (DOI: 10.1080/2162402X.2015.1046028).
- **Chandra RA**, Kachnic LA, Thomas CR, eds. Contemporary Topics in Radiation Medicine (Two Volume Series). Hematology/Oncology Clinics of North America; 2019-2020.
- **Chandra RA***, Keane FK*, Voncken F, Thomas CR. Contemporary Radiotherapy: Present and Future. The Lancet, *in press.*

Educational

I have interests in medical and interprofessional education, as well as in the writing and editing of high-level reviews and textbooks. Ongoing work, especially using survey tools, is focused on making substantive contributions to educational pedagogy as well as in the education of trainees and peers through enduring materials.

- **Chandra RA,** Vapiwala N, Thomas CR, eds. Handbook of Career Development in Radiation Oncology, *in preparation.*
- **Chandra RA,** Ord CB, Rana S, Hansen EK, Thomas CR, eds. Radiation Oncology Study Guide, 2nd Ed, *in press.*

- **Chandra RA** & Li R, eds. Multidisciplinary Management of Head and Neck Cancer - Contemporary Applications and Techniques, *in preparation*.
- Kahn JM, Fields EC, Pollom E, Wairiri L, Vapiwala N, Nabavizadeh N, Thomas CR, Jimenez RB, **Chandra RA**. Increasing Medical Student Engagement Through Virtual Rotations in Radiation Oncology. Advances in Radiation Oncology. 2020; doi: 10.1016/j.adro.2020.07.015.

D. Additional Information: Research Support and/or Scholastic Performance

Current projects (funded and unfunded) and other scholastic data/referees available upon request.