Approved by the Regents
May 20, 2021

PROMOTION RECOMMENDATION
THE UNIVERSITY OF MICHIGAN
MEDICAL SCHOOL
DEPARTMENT OF RADIATION ONCOLOGY

Dipankar Ray, Ph.D., assistant professor of radiation oncology, Department of Radiation Oncology, Medical School, is recommended for promotion to associate professor of radiation oncology, with tenure, Department of Radiation Oncology, Medical School.

Academic Degrees:

Ph.D.	2001	Indian Institute of Science, India
M.S.	1995	Madurai Kamaraj University, India
B.S.	1992	Kalyani University, India

Professional Record:

2016-2019	Adjunct Assistant Professor of Nuclear Engineering and Radiological Sciences, University of Michigan
2013-present	Assistant Professor of Radiation Oncology, University of Michigan,
2011-2013	Research Assistant Professor of Radiation Oncology, University of Michigan
2009-2011	Research Investigator, University of Michigan, Radiation Oncology
2009-2009	Scientist, Indian Institute of Chemical Biology
2005-2008	Research Assistant Professor, Northwestern University
2002-2005	Instructor, University of Illinois, Chicago
2000-2002	Post-doctoral Research Associate of Cancer Biology, University of Illinois, Chicago

Summary of Evaluation:

Teaching: As an assistant professor in the Department of Radiation Oncology, an adjunct Assistant professor in the Department of Nuclear Engineering and Radiological Sciences (NERS), faculty in Cancer Biology under Graduate Programs in Biomedical Sciences (PIBS) and director for the Cancer Research Summer Internship Program (CaRSIP) in the Rogel Cancer Center, Dr. Ray is actively involved in both classroom and research-related laboratory teaching. He actively educates junior faculty, residents, post-doctoral fellows, graduate and undergraduate students and research technicians. He is the course director of Radiation Biology for the NERS584 course and also directed the RTT423 course for the radiation therapy students at the University of Michigan-Flint. Over the years, Dr. Ray consistently received excellent evaluations from the NERS and RTT students. He also teaches three radiobiology lectures for the radiation oncology clinical and physics residents. As a Program in Biomedical Sciences (PIBS) faculty, he is an instructor in Cancer Biology 554, a graduate-level course for Ph.D. students in cancer biology. In addition to teaching in the classroom, he instructs students at multiple levels in research starting at the high school level, undergraduates, graduate students, research technicians, post-doctoral fellows and junior faculties. Dr. Ray is also a mentor in Postbac Research Education Program (PREP) program, a NIH supported one-year research training program designed to strengthen

the candidacy of under-represented minority students helping their admission to Ph.D. or M.D./Ph.D. program in biomedical science. He served as a mentor for the Undergraduate Research Opportunity Program (UROP), where his students received best poster award on multiple occasions.

Research: Dr. Ray's research is primarily focused on two major aspects and are continually funded by NIH R01 grants. A major focus remained in understanding the molecular mechanisms of various oncogenic protein stabilities in aero-digestive cancers including esophageal, lung, and pancreatic cancer. Among several, a major focus remained in identifying molecular regulators of mutant p53, epidermal growth factor receptor and mutant KRAS protein stabilities and further develop novel therapeutics. In an ongoing R01, Dr. Ray, in collaboration with Dr. David Beer, is exploring the role of an ubiquitin ligase (E3) called RNF128/GRAIL in maintaining mutant p53 protein stability during Barrett's progression to esophageal adenocarcinoma (EAC). In an extended collaborative project with Dr. Lagisetty, Dr. Ray and the team is studying an isoform-specific role of RNF128 in controlling T-cell anergy (inactivation), which is also critical in EAC progression. In a second major project, Dr. Ray is conducting a highly collaborative study on *radiation pneumonitis* (RP), a potentially fetal toxicity that limits radiation therapy curative potential. In this project, Dr. Ray used genetically modified mouse models to demonstrate an initiator role of tumor necrosis factor alpha (TNF□) in RP and further proposed the therapeutic potency of anti-TNF□ agent as a possible lung radioprotector. His preclinical findings and mechanistic insight has now been tested in clinical samples by analyzing plasma biomarkers (cytokines and miRNAs) that by combining radiobiological and clinical parameters help better predict RP. Dr. Ray is spear-heading a project with Dr. Nithya Ramnath, a thoracic oncologist at Michigan Medicine and the Ann Arbor Veteran's Affairs Health System, to discover a novel function of a cytochrome P450 enzyme, CYP24A1 role in lung cancer cell proliferation. In another collaboration with Dr. Al Rehemtulla, Dr. Ray is studying a unique role of a death domain containing apoptotic inducer, FADD in cell cycle regulation. Dr. Ray has published 44 peer-reviewed articles.

Recent and Significant Publications:

Paramita Ray, Krishnan Raghunathan, Aarif Ahsan, Uday Sankar Allam, Shirish Shukla, Sarah Veatch, Theodore S. Lawrence, Mukesh K. Nyati, Ray Dipankar: Ubiquitin ligase SMURF2 enhances epidermal growth factor receptor stability and tyrosine-kinase inhibitor resistance *Journal of Biological Chemistry* (2020) (In Press).

Huang W, Ray P, Ji W, Wang Z, Nancarrow D, Chen G, Galban S, Lawrence TS, Beer DG, Rehemtulla A, Ramnath N and Ray Dipankar: The cytochrome P450 enzyme CYP24A1 increases proliferation of mutant KRAS-dependent lung adenocarcinoma independent of its catalytic activity. *J Biol. Chem.* 295(18):5906-5917, 2020. PMID: 32165494.

Ray Dipankar, Ray P, Ferrer-Torres D, Wang Z, Nancarrow D, Yoon H, Martinho MS, Hinton T, Owens S, Thomas D, Jiang H, Lawrence TS, Lin J, Lagisetty K, Chang A, Beer DG: Isoforms of RNF128 Regulate the Stability of Mutant P53 in Barrett's Esophageal Cells. *Gastroenterology* 158(3): 583-597.e1, 2020. PMID: 31715145.

Krishnamurthy PM, Shukla S, Ray P, Mehra R, Nyati MK, Lawrence TS, Ray Dipankar: Involvement of p38-βTrCP-Tristetraprolin-TNFα axis in radiation pneumonitis. *Oncotarget* 8(29): 47767-47779, 2017. PM28548957/PMC5564603.

Shukla S, Allam US, Ahsan A, Chen G, Krishnamurthy PM, Marsh K, Rumschlag M, Shankar S,Whitehead C, Schipper M, Basrur V, Southworth DR, Chinnaiyan AM, Rehemtulla A, Beer DG, Lawrence TS, Nyati MK, Ray Dipankar: KRAS protein stability is regulated through SMURF2: UBCH5 complex mediated β-TrCP1 degradation. *Neoplasia* 16(2): 115-28, 2014. PM24709419.

Service: Dr. Ray has multiple commitments of service at the institutional level; in 2019, he became a member of the Biomedical Research Council. Since 2017, Dr. Ray is the faculty safety liaison for the Cancer Biology Division in the department. As a director of the CaRSIP program, he is actively involved in undergraduate education by conducting summer internship program for the Rogel Cancer Center and also a panel member for the Developing Future Biologists program and a reviewer for the Biomedical and Life Science Summer Fellowship under UROP. Dr. Ray serves in the committee to conduct preliminary examination for Cancer Biology Ph.D. students. He is an active participant in numerous faculty search committees. Nationally, Dr. Ray is an active member of several professional societies including the American Association for Cancer Research and Radiation Research Society. This year he became an editorial board member for *Plos One*. Dr. Ray is a regular reviewer for several journals, including *Cell*, *Cancer Research*, and *Radiation Research*. He is also a grant reviewer for the French Cancer Institute, Israel Science Foundation, and the German-Israeli Foundation for Scientific Research and Development, and nationally for the Florida Department of Health and the Pennsylvania Department of Health funding agencies.

External Reviewers:
Reviewer A: "As a normal tissue radiation biologist, I can attest that his work with pneumonitis is highly respected. Dr. Ray is one of the few investigators focusing on the acute side effects of radiation in lung, known as radiation pneumonitis."

Reviewer B: "His research has translational relevance as is noted by the quality of his publications…His bibliography demonstrates leadership in multiple projects as attested by 40+ journal publications including 13 first-author publications and 4 patents. His reputation as a researcher in radiation medicine and immune-oncology is further evidenced by the receipt of 3 NIH R01s."

Reviewer C: "Dr. Ray's work is of clinical relevance to enhancing tumor response to radiotherapy and protecting normal tissue…Since his appointment to Assistant Professor in 2011, he has 26 publications with 4 submitted; of these he is listed as first or senior author on 10. These numbers are a solid indicator of productivity with a reasonable mix of team science and independent research. In my opinion, he has the necessary skill set and research approach to be a valuable member of any Radiation Oncology department."

Reviewer D: "…Dipankar has developed a novel area of research with important translational consequences in cancer progression and genesis. The quality of the publications as well as the competitive grants he has received certainly qualifies him for promotion."

Reviewer E: "In particular, I was extremely impressed by his high impact publication in *Gastroenterology* on the role of various isoforms of RNF128, a Grail E3 ubiquitin ligase, in modulating the stability of p53 in BE (Gastro 2020;158:583-597) and even more his presentation at the last BETRNet meeting on this work…Dr. Ray has a strong record of funding and is currently the PI of an NIH R01 grant, which puts him in the top 5% of academic radiation oncologists."

Summary of Recommendation:
Dr. Ray has been very productive, and continues to develop a coherent body of work in the field of Barrett's progression to esophageal adenocarcinoma. He has a noteworthy record of professional service at the institutional, national and international levels, and is an excellent mentor and teacher. I am pleased to recommend Dipankar Ray, Ph.D. for promotion to associate professor of radiation oncology, with tenure, Department of Radiation Oncology, Medical School.

Marschall Runge, M.D., Ph.D.
Executive Vice President of Medical Affairs
Dean, Medical School

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