

2023 Mentor Directory: Summer Research Experience Program in Oncology for PA Students

Mentor	Department	Project	Pg.
Prasenjit Dey	Immunology	Role of tumor microenvironment in pancreatic, colon and lung tumor	1
William Magner	Head and Neck Surgery	Translational Research in Head & Neck, Plastic & Reconstructive Surgery	1
Gyorgy Paragh	Dermatology & Cell Stress Biology	Establishing efficacy of preventative early field treatment in a mouse model of immunosuppression-induced accelerated photocarcinogenesis	2
Denise Rokitka	Pediatric Oncology	AYA oncology	3
Gal Shafirstein	Cell Stress Biology	Treatment Planning and Light Dosimetry in Photodynamic Therapy (PDT)	3

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<p>Prasenjit Dey</p> <p><i>Dept. of Immunology</i></p> <p>www.roswellpark.org/Prasenjit-Dey</p> <p>Mentoring style- <i>Folks in my lab are highly collaborative and we work as a team.</i></p> <p>Expectations of summer student- <i>You will be exposed to various mouse modeling, molecular biology, immunology, genetics and biochemistry tools. Along with that you will see how tumor evolves in animal model of cancer.</i></p>	<p>Scientific Research</p> <p>Cancer genetics; Cancer molecular and cellular biology; Tumor immunology & immunotherapy</p>	<p>Role of tumor microenvironment in pancreatic, colon and lung tumor</p> <p>A major component of tumor microenvironment is the secreted factors arising from infiltrating immune cells, stroma, intra-tumor microbiome and cancer cells itself, which shapes the overall trajectory of the disease. We will evaluate the components that directly support pancreatic cancer initiation, progression and metastasis. and progression.</p> <p>Project phase: Elements of all three (Design, Discovery, Validation)</p>
<p>William Magner</p> <p><i>Dept. of Head and Neck Surgery</i></p> <p>www.roswellpark.org/William-Magner</p> <p>CSTEP Peer-to-Peer Program? No</p> <p>Mentoring style- <i>We maintain multiple projects at different stages</i></p>	<p>Scientific Research Clinical Research</p> <p>Cancer bioinformatics; Cancer biostatistics; Cancer molecular and cellular</p>	<p>Translational Research in Head & Neck, Plastic & Reconstructive Surgery</p> <p>The Head and Neck Cancer Translational Laboratory carries out multiple projects with the goal of improving treatment responses in head and neck cancers. Current projects investigate immune features of the tumor microenvironment that affect tumor growth and response to therapy. We use human and mouse cell lines in vitro as well as patient samples and mouse models. In silico studies of gene</p>

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<p><i>employing several approaches so communication is key. We attempt to understand each student's interests and goals then match them with appropriate project options. My colleagues and I are all accessible but busy so we are happy to make time to teach and support student projects but rely on student initiative to address interests, skills and needed support.</i></p> <p>Expectations of summer student- <i>Student success is directly proportional to their effort; therefore, we expect students to put in full days of sincere effort. Students need to take initiative and work as independently as possible but we will train and support every effort. Students need to communicate clearly their interests, skills and needs.</i></p>	<p>biology;Tumor immunology & immunotherapy; Medical Oncology;Surgical Oncology</p>	<p>expression differences may help characterize head and neck tumor behavior.</p> <p>Prospective and retrospective studies in Head & Neck, Plastic Reconstructive Surgery The Department of Head & Neck, Plastic & Reconstructive Surgery includes 11 surgeons with broad surgical specialties and research interests including surgical technique, patient outcomes, and complications among other issues. Our tools include prospective</p> <p>Project phase: Elements of all three (Design, Discovery, Validation)</p>
<p>Gyorgy Paragh</p> <p><i>Dept. of Dermatology & Cell Stress Biology</i></p> <p>www.roswellpark.org/Gyorgy-Paragh</p> <p>Mentoring style- <i>My goal is to create a safe, and fun research environment where trainees can develop their technical, analytical, and communication skills while pursuing a project they feel enthusiastic about.</i></p> <p>Expectations of summer student- <i>Be enthusiastic about learning. Uphold the highest academic and ethical standards. Do not hesitate to ask for help when help is needed.</i></p>	<p>Scientific Research</p> <p>Cancer bioinformatics;Cancer prevention and epidemiology;Dermatology</p>	<p>Establishing efficacy of preventative early field treatment in a mouse model of immunosuppression-induced accelerated photocarcinogenesis Ultraviolet light exposure is the most important risk factor for cutaneous squamous cell carcinomas (CSCC). CSCC are the second most common human malignancies with over 1 million cases diagnosed annually. Immunosuppression (IS) increases both the incidence and the mortality of CSCC. Because of immunosuppression CSCC are a major cause of morbidity and mortality in solid organ transplant recipients (SOTRs). CSCC are preventable by topical field (FT) treatment with topical chemotherapeutic or immunomodulator medications. The antimetabolite 5-fluorouracil (5FU) is the most frequently used FT, but as other FTs it is underutilized and currently used almost exclusively in patients with high number of apparent precancers or visible early CSCCs. Most CSCC arise in skin areas of profound prior UV damage and are heralded by the appearance of early clonal mutated cell groups (CMs) harboring tumor suppressor mutations. As we and others have shown CMs can be detected by ultra-high-depth targeted sequencing (UTS) and are emerging as a tool to objectively evaluate early skin carcinogenesis and as early targets of FT for skin cancer prevention. Although immunosuppression can increase CSCC risk by up to 250-fold, and field treatment has the potential to reduce cancer risk, we do not currently use FT to target CM in the absence of clinical signs of skin carcinogenesis even in individuals who will undergo immunosuppression. We hypothesize that immunosuppression modifies cutaneous CM and that early FT before immunosuppression can reduce CM and significantly decrease post immunosuppression skin cancer risk. We will study the effects of IS on CM in the SKH-1 mouse chronic UV exposure model of skin carcinogenesis. We will use solar</p>

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		<p>simulated light to mimic sunexposure and will induce immunosuppression by cyclosporine A to mimic immunosuppression in SOTR. The CM is IS and controls will be compared using UTS. We will assess changes in CM along with features or cutaneous and systemic immunosuppression. Moreover, we will perform field treatment with 5FU in the same model before initiating immunosuppression and we will follow tumor growth and CM and features of immunosuppression. This work will provide crucial preclinical data for future clinical studies aiming to identify patients on solid organ transplant list at risk of catastrophic cutaneous carcinomatosis after immunosuppression and will provide essential first line evidence for the utility of early FT to prevent CSCC in IS.</p> <p>Project phase: Validation- confirming previous data/results with a concentration on techniques, data interpretation and science reporting; potential for contributing to a scientific paper</p>
<p>Denise Rokitka</p> <p>Dept. of Pediatrics</p> <p>www.roswellpark.org/Denise-Rokitka</p> <p>Mentoring style- <i>Provide supportive environment to learn about clinical research</i></p> <p>Expectations of summer student- 1. Data review 2. Analysis 3. Manuscript writing</p>	<p>Clinical Research</p> <p>Pediatrics;Other (please specify);AYA oncology</p>	<p>AYA oncology</p> <p>Create database and enter data for AYA QOL, financial toxicity, anxiety/depression. Analyze available for trends and unmet needs in AYA oncology. Opportunity to shadow in pediatrics/ peds survivorship and AYA consults.</p> <p>Project phase: Validation- confirming previous data/results with a concentration on techniques, data interpretation and science reporting; potential for contributing to a scientific paper</p>
<p>Gal Shafirstein</p> <p>Dept. of Cell Stress Biology</p> <p>www.roswellpark.org/Gal-Shafirstein</p> <p>Mentoring style- <i>A teamwork that includes students, faculty and outside collaborators. Use weekly lab meetings for reporting results, presentation of new ideas. I have an open-door policy for research discussions as needed.</i></p> <p>Expectations of summer student- <i>Conduct experiments with supervision from graduate students in the lab.</i></p>	<p>Scientific Research</p> <p>Photodynamic Therapy;Cancer biophysics;Surgical Oncology</p>	<p>Treatment Planning and Light Dosimetry in Photodynamic Therapy (PDT)</p> <p>My research team is focused on the development and implementation of treatment planning and light dosimetry in PDT. My group includes 1 pre-doctoral student, a post doctoral and a technician. We collaborate with physicians, and faculty with expertise in radiation biology, biostatistics, and imaging at Roswell Park, and drug developers at other research institutes. We do preclinical and clinical studies, and investigate combination therapies.</p> <p>Project phase: Elements of all three (Design, Discovery, Validation)</p>

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<p><i>Document the work done. Record results. Present results and plans in our weekly lab meetings.</i></p>		