



## Mentor Directory: Roswell Park Summer Research Experience Program in Oncology for PA Students

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Mentor	Research Areas	Project description
<p><b>Eric Kauffman</b> <i>Dept. of Urology</i></p> <p><a href="http://www.roswellpark.org/Eric-Kauffman">www.roswellpark.org/ Eric-Kauffman</a></p> <p><b>Mentoring style- na</b></p> <p><b>Expectations of summer student- na</b></p>	<p><b>Scientific Research Clinical Research</b></p> <p>Cancer genetics;Cancer molecular and cellular biology;Cancer pharmacology and therapeutics;Urology;Medical Oncology;Surgical Oncology;Other (please specify);Radiology ;Cancer bioinformatics;Cancer biostatistics;Tumor immunology &amp; immunotherapy</p>	<p><b>Molecular and cellular research in kidney cancer</b> Our lab focus is on the discovery of key molecular alterations responsible for kidney cancer formation and progression, including two main projects. Students will acquire or improve basic laboratory experience working with kidney cancer cells or mice with kidney cancers.</p> <p>The first project is focused on the role of iron metabolism and resulting oxidative stress in the development and progression of kidney tumors. Our work has confirmed higher iron levels in kidney cancers than in benign kidney tissue; and shown that kidney cancer cells (but not benign kidney cells) require iron for growth and survival. In rodents, giving high levels of iron leads to mouse kidney cancers which morphologically mimic human kidney cancers. We are now generating a genetically engineered variant of these mouse kidney cancers that harbor the same gene mutation as found in almost all human kidney cancers, allowing us to better study the disease. Our goal is to characterize the key signaling pathways, immune cell types, and genomic alterations found in these mouse kidney cancers, including comparison with the human disease. This work includes bioinformatics opportunities for students with an interest. For those students with interests in Radiology, we also are studying the use of MRI for radiologic characterization of these mouse kidney cancers.</p> <p>In parallel, I also lead research in human kidney cancers that spontaneously regress without any treatment, which is a surprisingly frequent event in patients that we hypothesize may be immune-mediated. Learning how this intriguing phenomenon occurs may lead to new therapeutic strategies to trigger tumor regression. Ongoing work aims to characterize the genomic alterations and immune cells found in these spontaneously regressing cancers. For students with an interest in bioinformatics and computation biology, or in tumor immunology, this project may be of interest.</p> <p><b>Clinical research in kidney cancer patients</b> This internship involves clinical data abstraction and analysis for patients diagnosed with kidney cancer at Roswell Park who have been treated with surgery or managed non-operatively with active surveillance. Comprehensive patient databases within the D</p> <p><b>Project phase:</b> Elements of all three (Design, Discovery, Validation)</p>

Mentor	Research Areas	Project description
<p><b>Gal Shafirstein</b> <i>Dept. of Cell Stress Biology</i></p> <p><a href="http://www.roswellpark.org/Gal-Shafirstein">www.roswellpark.org/Gal-Shafirstein</a></p> <p><b>Mentoring style-</b> <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><b>Expectations of summer student-</b> <b>Conduct experiments with</b> <i>supervision from graduate students in the lab. Document the work done. Record results. Present results and plans in our weekly lab meetings.</i></p>	<p><b>Scientific Research</b></p> <p>Photodynamic Therapy; Cancer biophysics</p>	<p><b>Treatment Planning and Light Dosimetry in Photodynamic Therapy (PDT)</b></p> <p>My research team is focused on the development and implementation of treatment planning and light dosimetry in PDT. My group includes, 2 engineers, 2 research scholars and 3 pre-doctoral student. We do preclinical and clinical studies, and investigate combination therapies.</p> <p><b>Project phase:</b> Elements of all three (Design, Discovery, Validation)</p>

### Ethan Abel

Dept. of **Molecular and Cellular Biology**

[www.roswellpark.org/Ethan-Abel](http://www.roswellpark.org/Ethan-Abel)

**Mentoring style-** *As a new investigator, my mentoring approach is very hands-on. I typically go into great detail with trainees as to what the hypotheses we are trying to answer are, what techniques we will use to answer it and why, and the actual principles behind the techniques. I typically demonstrate techniques first, followed allowing students to do techniques in supervised manner until they are proficient, but remain regularly within reach for experimental guidance, technical support, or anything else a student has questions regarding.*

**Expectations of summer student-** *By the end of their time in the lab a summer student should be able to become proficient in a small number of routinely used techniques/approaches (generally 5 or less), and with guidance/supervision carry out a set of pre-designed experiments in a reproducible manner (at least 3 times) so that some conclusions regarding the questions behind the experiments can be confidently made (e.g. results support or refute the hypothesis). Students should gain a general/basic understanding of field the lab is in and the lab's overall research interests/goals and a solid understanding of why the experiments they are conducting are being done (e.g. what is their project about). I expect all trainees to be excited, hardworking, careful, honest, and mutually respectful so as to promote and maintain a collaborative work environment that conducts high-quality science at all times.*

### Scientific Research

Cancer molecular and cellular biology; Cancer pharmacology and therapeutics

### Epigenetic targeting of pancreatic cancer stem cells

Students will test the effects of drugs called BET-inhibitors on pancreatic cancer stem cells (PCSCs), which are a subtype of cancer cell that fuels the tumor, as well as the interplay between BET-inhibitors and proteins that drive PCSCs. Students will use human cancer cells as models, and utilize protein, RNA, and DNA analyses in their studies.

**Project phase:** Elements of all three (Design, Discovery, Validation)



## **Internship Directory: Roswell Park Summer Research Experience Program in Oncology (PA Students)**