Key questions defining research program:

- What are the mechanisms of antitumor effect, and development of resistance to immunological checkpoint blockade agents administered as therapy for metastatic melanoma
- What are the mechanisms of action for single agents and combinations administered as adjuvant and neoadjuvant therapy for operable melanoma
- Can early detection of melanoma (and other skin cancers) be demonstrated to be effective in reducing the microstage of melanoma at diagnosis, and mortality from melanoma

Key words describing research program:

- Melanoma
- Immune checkpoint blockade
- Cytokine and interferons
- Antitumor antibody
- Tumor infiltrating lymphocyte

Titles for shovel-ready research projects:

- Combined third generation checkpoint blockade (anti-LAG3) in combination with second-generation checkpoint blockade (anti-PD1) for metastatic melanoma
- Combined second generation checkpoint blockade with indoleamine dioxygenase inhibitor (IDOi) in metastatic melanoma and other lethal cutaneous malignancies (Merkel Cell Ca)
- Neoadjuvant combinations with anti-PD1 for preoperative therapy of stage III (nodal) metastatic Melanoma: (a) IDOi; (b) TLR 9 agonists, and other pro-inflamatory agents; (c) metabolic modulators of the tumor micro-environment.
- BRAF inhibitor/MEK inhibitor combinations with anti-PD1 in metastatic melanoma, and in neoadjuvant treatment of operable melanoma

Data sources for shovel-ready research projects:

- Trials of the Melanoma and Skin Cancer Program (MSCP) SPORE
- Biospecimen repository samples from melanoma patients (n=5000) of the SPORE
- Phase I-II trials of the MSCP SPORE and Hillman UPMC Melanoma Program (n=300)
- Phase II-III trials of the National Clinical Trials Network ECOG-ACRIN Melanoma Committee whose hub is at Hillman UPMC Melanoma Program
- Trials of Regional Melanoma Consortium and International Melanoma Working Group (with hub at Hillman UPMC)