

Fiscal Year 2022 (FY22) Melanoma Research Program (MRP) Challenge Statement

The MRP challenges the research community to prevent melanoma initiation and progression. The clinical, research, and patient communities traditionally view prevention as the use of sunscreen and protective clothing to protect melanocytes from harmful ultraviolet (UV) radiation. The MRP tasks the research community to redefine prevention to include the entire melanomagenesis process for all variants of melanoma. *A new paradigm of prevention includes improved detection and monitoring capabilities, as well as inhibiting the initiation of melanoma, the emergence from tumor dormancy, and the development of metastases.* The MRP believes that the research community can rise to the challenge to inhibit melanoma earlier in the disease progression to prevent metastasis and increase survival.

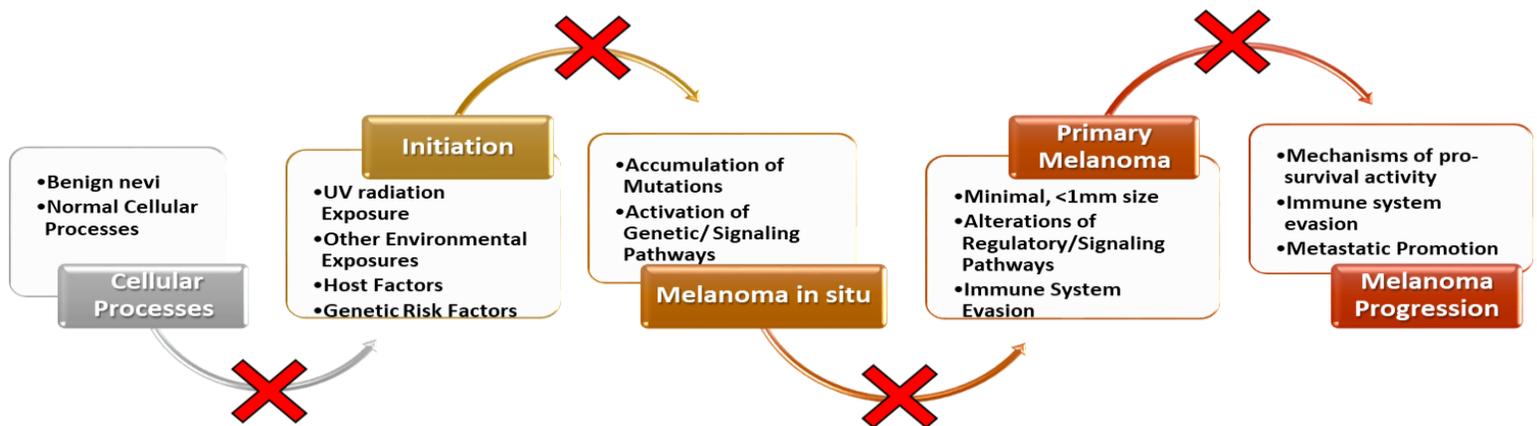


Figure: Melanomagenesis can be a multi-step process where normal melanocytes in a benign nevus are exposed to risk factors that initiate the transformation from a benign to malignant nevus. However, this is not always the case; melanomas may arise through other pathways. Independent of the specific route of pathogenesis, if melanoma is not identified at an early stage it will progress and eventually metastasize. The red X's represent the MRP's challenge to the research community to not only prevent the exposure to risk factors, such as by using sunscreen and protective clothing, but also to expand the concept of prevention to *include* stopping the progression toward increasingly malignant stages of melanoma. The MRP challenges the research community to stop melanoma in its tracks.

Meeting the Challenge

The purpose of the MRP Challenge Statement is not to limit the types of research being done in the melanoma community, but *redefine* and *shift the paradigm* of what is considered prevention research. The MRP encourages investigators to examine their research efforts to see how they can apply their knowledge to address the need for improved tools, improved understanding of rare melanomas, and improved outcomes for melanoma patients, including underserved patient populations (e.g., patients with rare melanomas, patients in rural communities, patients with lower socioeconomic status, etc.).

The MRP has established seven Focus Areas to promote the role of prevention *throughout melanomagenesis*.

Focus Areas

- Investigate topics relevant to rare melanomas (e.g., uveal, acral, mucosal melanoma, etc.) that cover the entire research spectrum, from risk factors and initiation to distant macro-metastases, in model organisms and/or patients.
- Identify and understand risk factor determinants for melanoma.
- Develop prediction and surveillance tools for distinguishing patient populations at risk for additional primary melanomas, recurrence, and/or metastasis.
- Understand how precursor lesions and environmental/endogenous factors influence melanomagenesis, including, but not limited to, skin microbiome, race, and biological sex as a variable.
- Develop new tools for the detection and diagnosis of melanoma, which includes easily accessible technology (beyond the dermoscope) for primary care physicians and dermatologists.
- Identify how the tumor microenvironment (e.g., stromal, immune, microbiome) impacts tumor initiation, response to therapy, progression, recurrence, and/or dormancy.
- Delineate the molecular pathways that influence metastatic spread, recurrence, and/or dormancy.

For additional information, applicants are encouraged to review the FY21 MRP Landscape: <https://cdmrp.army.mil/mrp/pdfs/Melanoma%20Research%20Program%20Landscape%20Document.pdf>. Applicants may also search for the abstracts from previously funded MRP awards at <https://cdmrp.army.mil/search.aspx>.