Celebrating Melanoma Research Alliance's Biorepository

American Association for Cancer Research's Special Conference highlighted how MRA is breaking barriers in the fight against rare cancers.

August 11, 2026 By Melanoma Research Alliance

Individuals experiencing a rare cancer like acral melanoma or mucosal melanoma often face unique challenges such as delayed diagnoses, limited treatment options, and poor health outcomes. Research is critical for changing this, but given the rarity of acral and mucosal melanoma, investigators and clinicians encounter difficulties in accessing the patient samples and preclinical models needed to better understand these rare cancers and develop new treatments.

To overcome this barrier, the Melanoma Research Alliance (MRA) has made advancing rare melanoma research a major priority. MRA has developed resources that now make it easier for researchers to study these rare melanoma subtypes, including the Rare Melanoma Model Catalogs, which connect researchers with preclinical models used for scientific studies, and the newly launched MRA Melanoma Biorepository, where patients can donate tissue samples to help advance scientific studies on melanoma by expanding researcher access to tissue samples.

The MRA Melanoma Biorepository was recently featured at the American Association for Cancer Research (AACR) Special Conference on Breaking Barriers in the Fight Against Rare Cancers held in Vancouver, British Columbia, Canada, which convenes experts across academia, industry, and patient advocacy to discuss research innovation for rare cancers— from diagnosis to treatment and clinical trial design. As part of the conference, attendees had the opportunity to learn about how patients with melanoma are helping to advance research through the MRA Melanoma Biorepository.

Dr. Kasey Couts, Associate Professor at the University of Colorado Anschutz Medical Campus (UCAMC) and Co-Director of the CU Center for Rare Melanomas, presented insights from this new MRA initiative. The MRA Melanoma Biorepository is a patient-directed effort designed to collect tissue samples from patients with melanoma and share them with qualified researchers to help accelerate translational and clinical studies across melanoma subtypes, including cutaneous melanoma (the most common form of melanoma) and especially the rarer acral and mucosal

melanomas. As one of the leaders behind this program, Dr. Couts oversees the biobanking operations at UCAMC, where the MRA Melanoma Biorepository is physically housed.

Dr. Couts' presentation illuminates how the MRA Melanoma Biorepository works, the simple steps patients with melanoma can take to donate their tissue samples, and how investigators and clinicians can develop long-standing partnerships with the biorepository.

Click here to see Dr. Couts' full presentation.

What is the MRA Melanoma Biorepository and why is it important?

The MRA Melanoma Biorepository is a patient-directed program that gives individuals with acral, mucosal, and cutaneous melanoma the opportunity to donate their tissue samples–including tumor tissue, normal tissue, blood, and other sample types–to support melanoma research. These donated samples help researchers to better understand how melanoma develops and progresses, identify new approaches for diagnosis and surveillance, and advance the development of new and more effective treatments.

Dr. Couts' presentation highlighted that one of the greatest challenges in rare melanoma research is access to patient samples. Because acral and mucosal melanoma are uncommon, researchers often have difficulty obtaining enough tissue samples to conduct meaningful studies. By providing donated samples to qualified researchers, the MRA Melanoma Biorepository helps overcome this barrier.

Dr. Couts also shared other challenges endured by researchers: even when tissue samples exist, they are often difficult to share across institutions due to complex sharing policies or limited infrastructure for distributing patient samples. The MRA Melanoma Biorepository is helping to address these barriers by creating a centralized resource that makes it easier for researchers to access high-quality patient samples in a timely manner.

How can patients donate tissue to the MRA Melanoma Biorepository?

Participating in the MRA Melanoma Biorepository is designed to be as simple as possible. Patients with acral, mucosal, or cutaneous melanoma can donate tissue samples from a previous or future biopsy or surgery, as well as donate blood or provide a cheek swab.

As a part of her presentation, Dr. Couts explained how the donation process works:

Step 1: Enroll in the biorepository. Patients begin by emailing biorepository@curemelanoma.org to express their interest in participating. They receive a consent form, and those who choose to participate return the signed consent along with a brief questionnaire about their demographics and clinical history. This information helps the biorepository acquire the donated sample and provides qualified researchers with more information about how the sample can be used for a specific research study.

Step 2: Tissue collection. Once enrolled, MRA biorepository staff coordinates with the patient's clinical team to obtain the donated tissue sample. Tissue collection kits are sent to the patient's clinical team who then transfer the collected sample to the biorepository at the UCAMC, directed by Dr. Couts.

How are patient tissue samples processed and stored at the MRA Melanoma Biorepository?

Dr. Couts' presentation also detailed what happens to a patient's donated sample once it arrives at the biorepository.

Different sample types are processed in different ways to maximize their versality for use in approved research studies. For example, archival tumor tissue may be preserved as formalin-fixed, paraffin-embedded (FFPE) blocks or hematoxylin and eosin (H&E) pathology slides, blood can be separated into different components or processed into DNA or RNA, and cheek swabs can be processed into DNA. Fresh tumor tissue from surgeries and biopsies is especially valuable because it can also be used to develop important preclinical models, like patient-derived xenografts (patient tumor tissue grown in mice), that are critically needed for rare melanoma research.

The biorepository uses a laboratory information management system (LIMS) to track each de-identified sample (removing all identifiable patient information from the sample) from receipt through processing, storage, and future distribution to approved researchers.

How are donated tissue samples used for research?

Once samples have been processed, qualified researchers can request access to them for melanoma research studies. Each request is reviewed by a Tissue Use Disbursement Committee to ensure the requested samples and proposed research are meritorious and make appropriate use

of these valuable patient-donated samples. Once approved and other institutional and material-transfer processes have occurred, researchers are then able to receive the de-identified samples and associated clinical data.

By providing researchers with access to high-quality patient tissue samples, the MRA Melanoma Biorepository helps to accelerate scientific collaborations and advance research for melanoma, especially the rare melanoma subtypes.

MRA is grateful to Dr. Couts for her leadership in establishing the Melanoma Biorepository and for her outstanding presentation at the AACR Special Conference on Breaking Barriers in the Fight Against Rare Cancers.

Interested in getting involved?

For patients interested in donating tissue, contact biorepository@curemelanoma.org to learn more about the MRA Melanoma Biorepository and to receive a consent form.

For providers, hospitals, and clinics interested in partnering with the MRA Melanoma Biorepository, contact biorepository@curemelanoma.org.

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