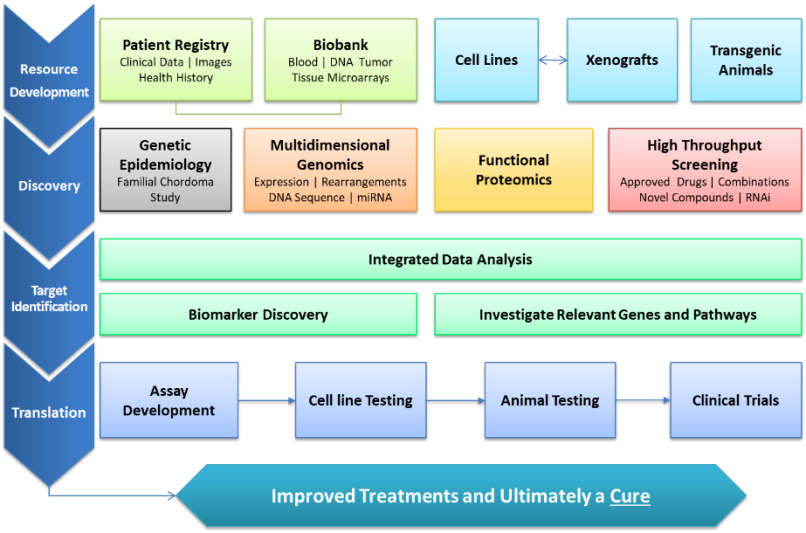
Functional Genomics of Myoepithelial Carcinoma & EWSR1 orphan cancers

Myoepithelial Carcinoma (MEC) is a rare cancer of children, teenagers and adults that can arise from the salivary glands, kidney and sometimes from soft tissue like muscle. **MEC is a rare cancer of significant unmet clinical need**. Yet hopeful clues exist, given that these cancers often have mutations fusing the EWSR1 gene to another gene.

Treatment is primarily surgical when not metastatic; however, many cases are or become metastatic. Uniformly effective chemotherapy regimens for widespread metastases are not yet established. Thus, innovative new therapies are needed for curative-intent treatments.

A significant barrier to developing new targeted therapies for MEC is the lack of *any* reported cell lines, mouse xenograft models or mouse transgenic models. No progress will be made until these laboratory tools are created. An effort to generate these tools for broad sharing and to centralize the knowledge base for MEC is warranted. And while the role of immunotherapy for MEC is undefined, this approach could be tested if laboratory tools were available.



Fortunately, an equally rare sarcoma, Chordoma, has seen great progress due to the efforts of the Chordoma Foundation and its founder Josh Sommer, a chordoma survivor. Because few resources existed, the Chordoma Foundation created a strategic research roadmap:

We propose to use the same roadmap for MEC, beginning in Years 1 and 2 with **Resource Development** (Patient Registry, Biobank, Cell Line generation, Xenograft generation) and to simultaneously conduct **Discovery** studies (High Throughput Drug Screening, as well as candidate target validations, *e.g.* HER3). In ongoing and time-sensitive efforts in Years 2, 3 and 4, additional target validations will be performed to create a portfolio of MEC treatment options, each with a companion biomarker. Drugs against each target will be testing in preclinical (animal) studies to then justify international MEC clinical trials. The overall goal for this 4-year MEC jumpstart project is to seed the development of treatment options that provide stable disease or a cure for 85% of MEC patients.

To participate and contribute to this team effort as a patient or family member, please contact kiyo@cc-tdi.org or charles@cc-tdi.org.

about The Children's Cancer Therapy Development Institute:

cc-TDI (www.cc-tdi.org) is a unique non-profit organization focused on the 'preclinical gap' in childhood cancer research. Our mission is to bridge scientific discovery and the initiation of clinical trials. Through our efforts, we will provide evidence-based testing for the selection of new drugs to be used in childhood cancer clinical trials, thus seeding pediatric Phase I and II trials. Our longstanding work with mouse models of brain tumors and sarcomas is the cornerstone for basic science & target discovery and our mission. The cc-TDI research team is led by Scientific Director Dr. Charles Keller who follows in the footsteps of his mentor, 2007 Nobel laureate Mario Capecchi. The cc-TDI laboratory is based on the premise of a non-profit multidisciplinary biotech and is thus located in between the Silicon Forest in Beaverton, OR (Intel Headquarters) and the Portland-area medical center. Our industrial-modern wet lab facility is a former 70-year old paint factory remodeled by Nike as an off-site creative space – an ideal setting to spark innovation.