Interactive Virtual MicroLab on Cancer Challenges and Advanced Computing: September 25, 2019
Pre-Read: List of Personae

Personae for Use Cases.

Building on the breakout discussions from the 1st MicroLab (held June 11, 2019), we will develop use cases based on the 4 cancer challenge areas identified at the ECICC Scoping Meeting (held in March 2019):

- ***Generating Large-Scale Synthetic Data to Protect Personally Identifiable Information***
- ***Using Machine Learning for Iterative Hypothesis Generation***
- ***Creating a Cancer Patient "Digital Twin" to Optimize Personalized Treatment Decision-Making***
- ***Developing Adaptive Cancer Treatments Targeting Unique Tumor Characteristics & Trajectories***

For more information on each of these cancer challenge areas, download the brief presentations at this link.

Various personae are described below. We will use these personae to provoke interesting conversations and as a starting point for creating a full-blown use case at the Micro-Lab. They are framed as "Imagine you…" statements to encourage empathy and to help view the challenge from the perspective of the user. The personae include **developers, collaborators, patients** and **regulators**.

At the MicroLab you will be asked to first choose one (or maybe more) to work on in your virtual breakout group using a template that will be provided.

Patient-related users

- Patient end-user
    - Imagine you are a patient receiving care in this system, and you are meeting a clinician to assess how your last round of chemo went.
- Patient's family member end-user
    - Imagine you are a patient's spouse, needing to access records to fill a prescription or schedule the next treatment.
- Patient advocate
    - Imagine you are trying to push adoption of new test/treatments into routine care and reimbursement.
- Data donors
    - Imagine you want to donate your records to science to improve the system, or contribute additional samples.

Clinical-focused users (all those involved in an individual's care):

- Clinician/care giver end-user (patient-facing)
    - Imagine you are sitting down with a patient to choose the next treatment step.
    - Imagine you are interacting with a clinical decision support platform and what you would expect from it.
- Pathologist, Radiologist, other therapist (end-user)
    - Imagine you are making a diagnosis considering new biomarkers.
- Hospice / home carers
    - Imagine you want to log onto a patient's record to help manage treatment side effects.
- Lab technician
    - Imagine you are running diagnostic panels and returning results to the system.

Clinical-focused users (all those involved in an individual's care) (cont.):

- Quality Improvement efforts
    - Imagine you are collecting data to assess the delivery and effectiveness of new treatments.
    - Imagine you want to validate the prediction of a patient outcome at your healthcare setting

Legal / regulatory users

- HIPAA compliance
    - Imagine you are a clinician ordering a test and determining the transfer of data to an external testing site.
- Security / privacy
    - Imagine you are performing compliance checks via penetration tests.
- Insurance / billing
    - Imagine you are a clinician advocating procedures to be covered.
    - Imagine you are an actuary gathering use statistics to guide future coverage decisions.

Developer users (these might be academic / commercial / clinical)

- Mathematicians / computer scientists / bioinformaticians
    - Imagine you are contributing new simulation capabilities or testing / refining existing ones.
    - Imagine you are downloading data to help build and validate models.
- Data infrastructure/IT developers
    - Imagine you are helping to design secure, distributed storage.
    - Imagine you are maintaining and allocating computer resources for patient tailored simulations.
- Clinical Decision Support developer
    - Imagine you want to securely access and combine patient data for CDS.
    - Imagine you want to ensure that the tool you developed is accurate across different patient populations, minimizing bias introduced by siloed training dataset
- Biologists
    - Imagine that you want to to advance new concepts or experiments/data that you need
    - Imagine what insights you need to envision the path forward.
- Pharma Companies
    - Imagine your company wants to build better patient forecasting models.
    - Imagine you want to monitor patient outcomes for quality control and protocol refinement for existing drugs.
- Manufacturers
    - Imagine you want to interface your assay equipment directly with patient records through a common, security portal.
- UI developers and usability testing
    - Imagine you are testing the "dashboard" that clinicians use to access data.
    - Imagine you are creating a new portal for hospice workers.
- Biotech companies
    - Imagine you want to gain access to publicly accessible datasets for discovery and validation.
    - Imagine you want to contribute your company's datasets to the public domain.