Motivation
Modern systems biology often requires an integrated computational and experimental approach. Countless tools and methods have been developed to facilitate research, but many lack engaging and approachable tutorials. This makes it more difficult for other scientists and students to learn how to use those tools in an effective way. Working through a specific comprehensive task that explicitly walks through acquiring relevant data, performing analysis, and visualizing results has been shown to be a more effective technique. In this workshop we will work through a series of modules we have developed to teach cancer systems biology, which have received positive student feedback, as a springboard and general template for creating tutorials of your own research tools and methods.

Proposed Workshop Length
The workshop will take a total of two and a half hours (150 minutes), but can be condensed as needed.

Names/Affiliations of Main Organizers
Alborz Bejnood/Stanford University, Research Scientist

Workshop/Tutorial Format
The workshop will be divided into three sections:

1. Presentation of current educational landscape in systems biology (30 minutes)
2. Diving up into small groups and working through a teaching module in a domain that is different from that of expertise (1 hour)
3. Discussion and creating a preliminary outline for development of teaching modules specific to attendee researcher tools and methods (1 hour)

There will be several different modules in different domains of cancer systems biology (e.g. differential gene expression, correlation network analysis, etc.) as options for attendees to work through. Each module consists of the following general structure:

- acquiring and processing data
- performing meaningful analysis
- visualizing and communicating results to a scientific audience

The third section, creating preliminary outlines of tutorials relevant to the research being done by those attending the workshop, will also be done in small groups. We will provide support and assistance for those interested in further tutorial development following the conference.

Timeline for inviting/accepting papers and presenters for the workshop
We will conduct the workshop presentations and tutorials.

Any other relevant information
For a sample module we will provide, feel free to email abejnood@stanford.edu.