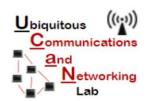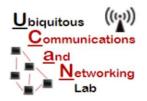# GNURadio Basics: Parameterization and Flowgraph Modifications

Goals

- Create flowgraphs that are easy to adapt and change parameters
- Add variables to enable for more complex GR flowgraphs.
- Utilize Conversion Blocks with Float to Complex block.
- Flowgraph Management with Virtual Source & Sink
- Utilize variables for more easier value management.
- Utilize QT GUI Range to change values in a running flowgraph.

Key Points

- Float to Complex
- Virtual Source and Sink Blocks
- Add variables to enable more complex flowgraphs.
- Variables are able to be used within existing GR Blocks.
- Variables allows for easy management of multiple GR values used in different blocks
- QT Gui Range enables us to be able predefine ranges and default values to utilize during a running flowgraph.
- Showcase that we can utilize QT GUI Blocks to manipulate both filter and frequency values during flowgraph runtime.

Flowgraph Complete