New **U01**

**HistoTools: A Suite of Digital Pathology Tools for Quality Control, Annotation, and Dataset Identification**

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Overview of Specific Aims

Aim 1: Develop Pre-Experiment HistoTools

Aim 2: Validation

Aim 3: Dissemination
Specific Aims 1: Develop HistoTools - HistoQC

- **HistoQC**: An Open-Source Quality Control Tool for Digital Pathology Slides
- Currently available: [http://github.com/choosehappy/HistoQC](http://github.com/choosehappy/HistoQC)
- JCO CCI, April 2019 – Poster here at ITCR2019!
Specific Aims 2: Develop HistoTools - HistoQCRepo

- **HistoQCRepo**: Public Repository Containing Examples of Slide Artifacts
  - Currently available: [http://www.histoqcrepo.com](http://www.histoqcrepo.com)
Specific Aims 1: Develop HistoTools - HistoAnno

**HistoAnno**: Deep learning based active learning for annotation generation
Expected Beta Release: September 2019
Specific Aims 1: Develop HistoTools - HistoFinder

- **HistoFinder**: Identify better training/testing sets for machine learning classifiers
- Culmination of previous tools
- Work to begin Q1 2020
Specific Aim 2: Validation

- Test in Real-World application of developing digital pathology based companion diagnostic solutions
- Inline with projects kicking off:
  - Predicting recurrence in early stage breast cancer from completed clinical trial ECOG 2197 (n>900)
  - Response to immunotherapy for non-small cell lung cancer patients from Checkmate 017 and 057 (n>700)
Specific Aim 3: Dissemination + Collaboration

- Public release of code (ongoing)
- Garner feedback on bugs/features
- Integrate into other ITCR workflows
- Collaborations in progress:
  - PIIP integrating HistoQC output into Seeden Viewer
  - Shapiro et al for using HistoAnno for breast cancer/DCIS slides
Question/Comments?

- Today @ Poster #40
- Email: andrew.janowczyk@case.edu
- Digital pathology blog: andrewjanowczyk.com
- HistoQC: http://github.com/choosehappy/HistoQC
- HistoQCRepo: http://www.histoqcrepo.com