What to do with $200k

* Research quarter(s)
  + Jesse FY18
  + Leo FY18
* Research assistance
  + Academic network
    - Citation
    - Co-authorship
    - Institution
  + Patent network
    - Citation
    - Collaboration
    - Co-ownership
    - Institution
  + Social network
    - Intra-forum network (node = user)
    - Inter-forum network (node = forum)
    - Inter-forum network (node = user)
* Hardware and software
  + Server/storage
  + Data sets
* Travel

Academic network

Goal

* Set up a comprehensive, multi-layered, temporally dynamic network of academic collaboration and information-sharing in the AM field.

Output structure

* Network data
  + Citation network (directed, unimodal)
    - Node = manuscript
    - Tie = directed citation
  + Collaboration network (undirected, bimodal)
    - Type A node = author
    - Type B node = manuscript
    - Tie = authorship of manuscript
  + Institutional network (undirected, bimodal)
    - Type A node = author
    - Type B = institution
    - Tie = institutional affiliation
* Temporal reference
  + Individual nodes/ties are referenced by date – allow ‘slicing’ of network to visualize change over time

Data description

* Data source(s)
  + Microsoft Academic Graph (MAG)
  + Access via API using Python scripts
* Data storage
  + Option 1: ‘flat’ storage as JSON in NOSQL database
  + Option 2: ‘traditional’ SQL database storage
    - Author database
    - Manuscript database
    - Citation database

Patent network

Goal

* Set up a comprehensive, multi-layered, temporally dynamic network of patent collaboration and citation in the AM field.

Output structure

* Network data

Data description

* Data source(s)
  + European Patent Office (EPO)
    - Python access via API (patent2net package)
  + US Patent & Trademark Office (USPTO)
    - Python access via API (patentserver package)
  + World Intellectual Property Organization (WIPO)
    - Subscription to full-text archives 3,900 Swiss francs/ year