USC Norris is seeking applications for the Hui Lui and Michael Cao Post-Doctoral Fellowship in Cancer Data Science for the 2020-2021 academic year. This mechanism will support up to 2 post-doctoral students for one year. Applicants starting or who are completing a current post-doctoral fellowship at USC or those who wish to extend for one more year are eligible. Successful applicants will propose and undertake research projects that apply novel data science techniques to existing cancer data to gain insights that can be applied to guide cancer prevention or treatment.

Examples of areas of focus (all applied to cancer risk, prevention, diagnosis, clinical trials or treatment):

- Application of algorithms for discovery, clustering and/or prediction such as using artificial neural networks with gene expression data to classify and predict cancer.
- Application of algorithms to electronic health records such as the use of regularized regression to select EHR components to identify aggressive cancer subgroups for more targeted screening.
- Artificial intelligence/machine learning applications to advance drug discovery, clinical trials matching or cancer risk or recurrence prediction.

Application requirements:

- Projects must include a novel data science technique and an application with the potential to move the corresponding applied field forward.
- The project must use an existing data resource currently available and ready to be analyzed. Examples include (but are not limited to):
  - The use of ORIEN data in collaboration with the Molecular Genomics Shared Resource.
  - The use of California Cancer Registry Data in collaboration with the Population Science Shared Resource.
  - The use of clinical trial data in collaboration with the Clinical Investigations Support Office (CISO) and the Data Science Shared Resource.
- Applicants must already be mentored or proposing to be mentored by a USC Norris full member: http://uscnorriscancer.usc.edu/Core/Members/. Including a clinical faculty member in oncology as a consulting investigator is also encouraged to foster clinical relevance.
- If an applicant is seeking an additional year of their current post-doctoral position, they must demonstrate that this project is a new direction and not a continuation of previous work; the addition of a new co-mentor from a second discipline would be highly advised.

Preference will be given to:

- Projects that address a priority cancer for our community (Breast, prostate, colorectal, lung cancer, and ALL), and/or risk factor (tobacco, obesity/energy balance, HPV prevention) in Los Angeles County.
- Applicants are strongly encouraged to interact with one of the Norris CCSG Shared Resources. Check here: http://uscnorriscancer.usc.edu/core/

Application Instructions for Submission:

- 5-page document including the following sections:
  - A. Specific Aims
  - B. Cancer Relevance of the applied application using an existing data source
  - C. Innovation for the data science technique
  - D. Study Design and Approach
  - E. Clear metrics of success and impact, with timeline
- NIH Biosketch for the candidate and the mentor(s)
- Support:
  - Fellowship supports USC post-doctoral salary plus fringe ($54,080 in 2020, and $58,240 in 2021).
  - Faculty mentor salaries and computer purchase will not be covered.

Proposals should be submitted as one PDF document to Raquel Carla Martinez via email at raquel.martinez@med.usc.edu by 5:00PM PDT on August 1st.

Questions can be referred to David Conti PhD, Associate Director for Data Science Integration dconti@usc.edu