

## **Postdoctoral Fellowship for Modeling of Long-Term Macroeconomic and Natural Resources Interdependence**

**Location:** Austin, TX, USA

**Keywords:** energy, economics, debt, biophysical economics, post-Keynesian, Michal Kalecki, Hyman Minsky, system dynamics

**Deadline for application:** July 15, 2017

**Start date:** approximately September 1, 2017

**Duration:** 12 months

### **Description**

The University of Texas at Austin is recruiting for a post-doctoral researcher with a Ph.D. in a field related to economics and/or physical sciences (e.g., physics, engineering, chemistry) in which the applicant has experience applying physical principles to understand economic phenomena.

The researcher will work with Dr. Carey W. King, a Research Scientist and Assistant Director of the Energy Institute (EI) at The University of Texas at Austin, who is engaged in research that uses a system dynamics approach to macroeconomic modeling. The research seeks to develop an integrated modeling approach to understanding the nexus of macroeconomic trends (employment, debt, wages, etc.) and natural resources extraction and consumption. This research is driven by a need to understand the fundamental role of energy resource and technology development that has led to the current world macroeconomic situation of high debt, unprecedented low central bank interest rates, and stagnant wages (in developed economies).

The overall goals of the modeling research, in which the post-doctoral researcher will assist, include, but are not limited to:

- (i) determining linkages between energy and food costs (relative to income or gross domestic product) and debt,
- (ii) understanding if the “secular stagnation” seen in developed economies since 2008 is a consequence of constraints on use and conversion of energy resources to energy services, and
- (iii) determining the feasibility, as a function of the rate and magnitude of change, of a transition to a low-carbon and/or renewable energy economy.

The potential focal topics for the post-doctoral researcher will be:

- Calibrating system dynamics models, potentially using econometric techniques, to estimate world and U.S. scale historical trends (e.g., energy use, GDP, debt, population, employment).
- Determining the factors, temporal linkages, and feedbacks associated with a modeling a transition to low-carbon or renewable energy as a function of debt and interest rates.



The position is based in Austin, Texas.

Preference will be given to individuals with experience in software related to programming in R, Matlab, Python, and/or other packages for simulating system dynamics and differential equations as well as experience in heterodox economic methods and concepts (e.g., post-Keynesian, Michal Kalecki, Hyman Minsky). The ideal applicant is willing to work across disciplines (e.g., engineering, economics, physics), self-driven, and both open to providing and receiving constructive criticism.

The University of Texas at Austin is an equal employment opportunity/affirmative action employer.

**Application Instructions:**

Submit application materials online at:

<https://utdirect.utexas.edu/apps/hr/jobs/nlogon/170530010712>

or

Enter Job Number **170530010712** at:

<https://utdirect.utexas.edu/apps/hr/jobs/nlogon/search/0/>

Please also send CV, 1-page cover letter of interest, and up to 2 reference letters to Dr. Carey W. King ([careyking@mail.utexas.edu](mailto:careyking@mail.utexas.edu)).

For specific questions on the job description, e-mail or call Dr. King at +1 (512) 471-5468.