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MIT PLACEMENT OFFICER

Professor Nancy L. Rose nrose@mit.edu
(617) 253-8956

MIT PLACEMENT ADMINISTRATOR

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**DOCTORAL
STUDIES**

Massachusetts Institute of Technology (MIT)
Ph.D., Economics, Expected completion June 2008
DISSERTATION: "Essays in Environmental and Development Economics"

DISSERTATION COMMITTEE AND REFERENCES

Professor Michael Greenstone
MIT Department of Economics
50 Memorial Drive, E52-359
Cambridge, MA 02142-1347
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Professor Esther Duflo
MIT Department of Economics
50 Memorial Drive, E52-252G
Cambridge, MA 02142-1347
(617) 253-7013
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Professor Victor Chernozhukov
MIT Department of Economics
50 Memorial Drive, E52-368
Cambridge, MA 02142-1347
(617) 253-4767
vchern@mit.edu

**PRIOR
EDUCATION**

Amherst College, A.B., *magna cum laude*, Economics and History, 1998

CITIZENSHIP

US

BORN: Carrboro, North Carolina

LANGUAGES

English, Spanish

**RESEARCH &
TEACHING
FIELDS**

Primary: Environmental, Development
Secondary: Applied Microeconometrics

**TEACHING
EXPERIENCE**

Impact Assessment and Randomized Evaluation Course, Abdul Latif Jameel Poverty Action Lab, Teaching Fellow, 2006-present
Development Economics: Macroeconomic Issues (graduate, MIT 14.772), Teaching Assistant to Professors Abhijit Banerjee, Michael Kremer and Robert Townsend, Spring 2007
Microeconometrics (graduate, MIT 14.385), Teaching Assistant to Professor Victor Chernozhukov, Fall 2006

Wrote probability self-study module for incoming Ph.D. students, Summer 2006
 Econometrics I (graduate, MIT 14.382), Teaching Assistant to Professors Victor Chernozhukov and Jerry Hausman, Spring 2006. Received Economics Department Graduate TA of the Year Award.
 Probability and Statistics (undergraduate, MIT 14.30), Course Instructor, Fall 2005

PREVIOUS EMPLOYMENT Assistant Economist, International Research, Federal Reserve Bank of New York, 2001-2003
 Associate Consultant, Bain and Company, 1999-2001
 Research Assistant, White House Council of Economic Advisers, 1998-1999

FELLOWSHIPS, HONORS, AND AWARDS Economics Department Graduate TA of the Year, 2005-2006
 George and Obie Schultz Fund Grant, 2005
 Martin Fellowship for Sustainability, MIT Laboratory for Energy and the Environment
 National Science Foundation, Graduate Research Fellowship, 2003-2005, 2007-2008
 Nelson Memorial Award, Top Senior Economics Major, Amherst College, 1998
 Phi Beta Kappa, Amherst College, 1997

PROFESSIONAL ACTIVITIES Referee for *Journal of Development Economics*

RESEARCH PAPERS **“The Impact of Climate Change on Indian Agriculture” (Job Market Paper)**
Abstract: This paper estimates the likely economic impact of climate change on Indian agriculture. I estimate the effect of random year-to-year variation in weather on agricultural output using a 40-year district-level panel data set covering over 200 Indian districts. These panel estimates incorporate farmers' within-year adaptations to annual weather shocks. I argue that these estimates, derived from short-run weather effects, are especially relevant for predicting the medium-run economic impact of climate change if farmers are constrained in their ability to recognize and adapt quickly to changing mean climate. The predicted medium-run impact is negative and statistically significant: I find that projected climate change over the period 2010-2039 reduces major crop yields by four to eight percent. The long-run (2070-2099) impact is dramatic, reducing yields by roughly 25 percent in the absence of long-run adaptation. These results suggest that climate change is likely to impose significant costs on the Indian economy unless farmers can quickly recognize and adapt to increasing temperatures. Such rapid adaptation may be less plausible in a developing country, where access to information and capital is limited.

RESEARCH IN PROGRESS **“Estimating Quantile Treatment Effects in a Regression Discontinuity Design”**
Abstract: Regression discontinuity (RD) is a popular quasi-experimental estimator for mean treatment effects. While the distribution of treatment effects is also of interest, methods for estimating quantile treatment effects have not been developed for RD models. The connection between RD and instrumental variables (IV) noted by Hahn, Todd and van der Klaaw (2001) suggests using quantile IV to estimate quantile treatment effects. This paper develops a simple quantile IV estimator for treatment effects in a RD framework, using the inverse quantile regression method of Chernozukov and Hansen (2006).

“The Short- and Medium-Run Benefits of Sanitation” (joint with Esther Duflo and Michael Greenstone)
Abstract: Poor sanitation and water quality are believed to impose large costs on individuals in developing countries. Due to externalities, sanitation problems cannot be solved at the household level and require group interventions. This paper evaluates the impact of a sanitation program run by an NGO in rural India, which

provided toilets, showers and a water tank to over 50 poor villages, on infant and child mortality, adult mortality, school attendance and sanitation-related health conditions such as prevalence of malnutrition, severe diarrhea, typhoid fever, scabies and blindness. Several features of the program make it particularly attractive for evaluation. First, the program required all households in affected villages to participate so the estimated impacts capture all within-village externalities. Second, service was initiated suddenly, unpredictably and at different times for different villages, reducing concerns of confounding with other trends. Finally, data on all outcomes are available beginning several years before the sanitation project came and data collection continues for five years or more after service begins, which makes it possible to assess medium-run impacts.

“Does Public Human Capital Investment Induce Brain Drain? Estimates of the Causal Effect of Education on Migration”

Abstract: A positive association between education and migration is well-documented, but whether this relationship is causal is unknown. I use a plausibly exogenous education intervention from Indonesia’s INPRES school construction program to estimate the causal effect of education on migration. Preliminary estimates indicate that an additional year of primary education increases the propensity to migrate by roughly two to four percentage points. I present a model of public human capital investment and migration choice showing that this causal relationship may reduce the incentive of local governments to invest in human capital if the benefits of such investments accrue to other locales.