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MIT PLACEMENT OFFICER

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**DOCTORAL
STUDIES**

Massachusetts Institute of Technology (MIT)
Ph.D., Economics, Expected completion June 2012
DISSERTATION: "Information, Bias, and Efficiency in Expert Evaluation:
Evidence from the NIH"

DISSERTATION COMMITTEE AND REFERENCES

Professor David Autor
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Professor Michael Greenstone
MIT Department of Economics
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Professor Pierre Azoulay
MIT Sloan School of Management
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**PRIOR
EDUCATION**

Harvard College, 2005
A.B. in Mathematics, History of Science, *cum laude*

CITIZENSHIP

United States

GENDER Female

YEAR OF BIRTH

1983

FIELDS

Primary Fields: Labor
Secondary Fields: Economics of Innovation and Entrepreneurship; Public
Finance

**TEACHING
EXPERIENCE**

Competitive Strategy (MBA, MIT Sloan Course 15.714),
Teaching Assistant to Professor Scott Stern and Professor

2011

	Pierre Azoulay	
	Advisor in Applied Math and Economics, Harvard College	2008-2011
	Graduate Resident Tutor in Quincy House, Harvard College	2007-2011
RELEVANT POSITIONS	MIT Research Assistant to Professor Jonathan Gruber	2006-2008
	MIT Research Assistant to Professor Esther Duflo and Professor Abhijit Banerjee	2005-2006
	Poverty Action Lab, Project Coordinator (Udaipur, India)	2005-2006
	Research Associate, Indian National Commission on Health and Macroeconomics	2004
FELLOWSHIPS, HONORS, AND AWARDS	George and Obie Shultz Fund	2010
	Economics Department Fellowship	2006-2008
	National Science Foundation, Honorable Mention	2006-2007
	Eliot and Anne Richardson Fellowship, Harvard College (3 University wide)	2005
	Summa Thesis Reading, Harvard College	2005
PROFESSIONAL ACTIVITIES	Presentations: 2012: Rotman School of Management, Harvard Business School, Harvard Kennedy School, Dartmouth College, London School of Economics, Kellogg School of Management, Boston University, Berkeley Haas, Columbia GSB. 2011: Allied Social Science Association Annual Meeting (discussant), Consortium for Competitiveness and Cooperation (CCC) Conference, National Bureau of Economic Research (NBER) Productivity Lunch. Referee: American Economic Journal: Applied Economics, Economics of Education Review, Journal of Public Economics, Quarterly Journal of Economics.	
RESEARCH PAPERS	“Information, Bias, and Efficiency in Expert Evaluation: Evidence from the NIH” (Job Market Paper) Experts are likely to have more information regarding the potential of projects in their area, but are also more likely to be biased. This paper develops a theoretical and statistical framework for understanding and separately identifying the effects of bias and information on expert evaluation and applies it in the context of peer review at the National Institutes of Health (NIH). I use exogenous variation in review committee composition to examine how relationships between reviewers and applicants, as measured by citations, affect the allocation and efficiency of grant funding. I show that, due to bias, each additional related reviewer increases the chances that an applicant is funded by 2.9 percent. Reviewers, however, are also more informed about the quality of proposals from related applicants: the correlation between scores and quality is approximately 30 percent higher for related applicants. On net, the presence of related reviewers improves the quality of research that the NIH supports by 2-3 percent. My results show that reducing conflicts of interest may come at the direct cost of reducing the quality of funding decisions.	

“Gender and Ethnicity Bias in NIH Peer Review: Does It Exist and Can We Do Better?”

There has been longstanding policy concern about the lack of women and minorities in the upper tiers of the biomedical sciences. This report examines whether female and minority applicants are treated differently in NIH peer review. Analyzing scores assigned to over 55,000 R01 research grants, I find that female investigators face greater hurdles. A female PI receives, on average, a half percentile worse score than comparable men for research that eventually produces the same number of publications and citations. Gender bias reduces the number of women who are funded by approximately 3 percent. I find limited evidence of smaller bias against Hispanic investigators and no evidence of bias against Asian investigators. These biases, however, do not substantively affect the quality of the research that NIH supports; the portfolio of projects that the NIH would fund in the absence of gender or ethnicity considerations produces no more publications or citations. Analysis of study section composition reveals that the presence of female reviewers attenuates bias, suggesting that while bias does exist, demographic balance on study sections can improve peer review.

“School Accountability and Principal Mobility: How No Child Left Behind Affects the Allocation of School Leaders”

The move toward increased school accountability may substantially affect the career risks that school leaders face without providing commensurate changes in pay. Since effective school leaders likely have significant scope in choosing where to work, these uncompensated risks may undermine the efficacy of accountability reforms by limiting the ability of low-performing schools to attract and retain effective leaders. This paper empirically evaluates the economic importance of principal mobility in response to accountability by analyzing how the implementation of No Child Left Behind (NCLB) in North Carolina affected principal mobility across North Carolina schools and how it reshaped the distribution of high-performing principals across low- and high-performing schools. Using value-added measures of principal performance and variation in pre-period student demographics to identify schools that are likely to miss performance targets, I show that NCLB decreases average principal quality at schools serving disadvantaged students by inducing more able principals to move to schools less likely to face NCLB sanctions. These results are consistent with a model of principal-school matching in which school districts are unable to compensate principals for the increased likelihood of sanctions at schools with historically low-performing students.

“Cheaper By the Dozen: Using Sibling Discounts at Catholic Schools to Estimate the Price Elasticity of Private School Attendance” (with Susan Dynarski and Jonathan Gruber) NBER Working Paper #15461

The effect of vouchers on sorting between private and public schools depends upon the price elasticity of demand for private schooling. Estimating this elasticity is empirically challenging because prices and quantities are jointly determined in the market for private schooling. We exploit a unique and previously undocumented source of variation in private school tuition to estimate this key parameter. A majority of Catholic elementary schools offer discounts to families that enroll more than one child in the school in a given year. Catholic school tuition costs therefore depend upon the interaction of the number and spacing of a family’s children with the pricing policies of the local school. This within-neighborhood variation in tuition prices allows us to control for unobserved determinants of demand with a set fine geographic group fixed effects while still identifying the price parameter. We analyze this variation by using data on over 3700 school tuition schedules collected from Catholic schools around the nation, matched to restricted Census data that identifies precise location that can be matched to the nearest Catholic school. We find that a standard deviation decrease in tuition prices increases the probability that a family will send its children to private school by one half percentage point, which translates into an elasticity of Catholic school attendance with respect to tuition costs of -0.19. Our subgroup results suggest that a voucher program would disproportionately induce into private schools those who, along observable dimensions, are unlike those who currently attend private school.

**WORKS IN
PROGRESS**

“Spillovers from Publicly-Funded Biomedical Research onto Industry”
(with Pierre Azoulay, Joshua Graff-Zivin, and Bhaven Sampat)

We measure the extent to which NIH investments in basic science affect the research choices of private sector firms. Using newly available data on patent-publication links and exploiting the structure of NIH grant review, we address two key econometric challenges to identifying spillovers. First, we measure the pool of knowledge relevant for a firm by directly linking a firm's patent output to the publications those patents cite, to the grants that fund those publications, and ultimately to a pool of related research supported by the same grant funding committee. Second, we address concerns about the endogeneity of federal funding for disease areas by instrumenting investments in particular disease area with changes in funding arising from other disease areas that use similar methods. This is possible because the review committee an application is evaluated in tells us about the methods the application uses, while the patenting firm and funding institute tell us about the disease area of application. This analysis allows us to examine what kinds of firms are most likely to take advantage of publicly funded research and to quantify the impact of these spillover projects on innovation.

“The Impact of Committee Composition on Committee Decisions in NIH Grant Funding”

I document significant variation in the quality of decisions made in NIH grant review panels and ask what might explain this variation. In this project I focus on how committee composition and group dynamics (for instance how broad a committee is, whether it includes highly influential scientists, etc.) can affect how committees identify high quality research. These results could be relevant for policy makers interesting in designing committees to evaluate, for instance, interdisciplinary research.