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To whom it may concern:

I am delighted to strongly recommend **Ms. Jamie McCasland** for faculty positions in economics. She is likely to be one of the top new Ph.D.'s in development economics on the market this year, and should be considered by all departments, including at top-10 economics departments, business schools, and public policy departments. She is a creative young development economist whose research is yielding new insights into the functioning of African labor markets, and her job market paper is likely to be an influential contribution in both development and labor economics.

Before she enrolled in the Economics Ph.D. program at Berkeley, I had the pleasure of working closely with Jamie for two years as her research supervisor. I hired Jamie to work in Kenya in 2007, following her impressive undergraduate performance at UCLA. Majoring in Economics, Jamie earned nearly perfect grades in a wide range of economics, mathematics, and statistics courses, with a stellar GPA. Jamie's undergraduate advisor, Ken Sokoloff at UCLA, now sadly deceased, gave her a glowing recommendation. Before working with me, Jamie served as a Peace Corps volunteer on a reproductive health project in Kenya, picking up excellent Swahili and Luo language skills and a deep appreciation of the cultural differences between U.S. and East Africa. Jamie was a field research manager, essentially my eyes and ears in the field, from 2007 to 2009. This position is challenging both professionally and personally: Jamie was overseeing implementation of three research projects, managing a staff of 25-30 Kenyan enumerators and field staff; she ensured data collection and data entry proceeded on schedule in the face of constant logistical problems; and then played a key role in the data management and econometric analysis. She had an incredibly effective leadership style: perhaps in part due to her excellent language skills and sense of the local cultural landscape, Jamie has a talent for resolving conflicts through patient discussions and consensus building. Her social and management skills in the field are actually quite remarkable, and have also proved to be an asset during her dissertation research, as I discuss below.

Jamie then enrolled in the U.C. Berkeley Economics Ph.D. program in fall 2009. She continued her outstanding academic performance, with excellent grades in her core classes, a full "A" in my Ph.D. development economics course, and strong training in Labor Economics and Econometrics at Berkeley. She also served as a hard-working and popular teaching assistant for my graduate development course.

Jamie has had deep intellectual interests in the functioning of labor markets in low income economies for as long as I have known her, and her dissertation research is an important contribution in this area. Jamie's research builds on a Government of Ghana program to provide vocational and small business training to unemployed youth in that country. As in much of the developing world, youth unemployment rates are very high in Ghana, and there remains little consensus regarding its underlying causes. In

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particular, there is a debate regarding how much of this unemployment is due to a basic lack of job skills on the part of young workers (perhaps a consequence of low quality education and poor health earlier in life), versus how much is the result of labor market “frictions”, including possibly job search costs, ethnic favoritism or other contracting difficulties. Jamie and her co-authors (Megan Hardy, a Ph.D. student at Brown University, and Prof. Isaac Mbiti of University of Virginia on some aspects of the overall project) persuaded their Ghanaian colleagues to randomize access to the government program, which is over-subscribed in any case, making a lottery a fair way to deal with the limited number of spots. They put in place a rich set of surveys that measure individuals’ skills at baseline, including cognitive ability, as well as their attitudes towards entrepreneurship, risk, and their professional ambition.

In her job market paper, Jamie focuses on a component of the Ghana project that randomly “matches” the placement of these youth trainees into small local enterprises. These job placements are meant to be temporary, and are very similar in spirit to the apprenticeship arrangements that are quite common in rural Ghana, for businesses which range from tailor shops to hair salons to small food processing operations. Jamie’s job market paper is a fascinating study of what happens when the labor constraint is “eased” for these small enterprises, and in the process she contributes to key current debates about youth unemployment in low income economies. While many other recent studies in development have implemented “capital drop” experiments, no other study (to my knowledge) has implemented this sort of “labor drop” on small firms, in order to gauge both take-up (i.e., actual hiring of the assigned workers) and effects on revenues and profitability.

Setting up the project required a multi-year effort on Jamie’s part, including several trips to Ghana per year to meet with government officials, reach agreement on the central research hypotheses, get their approval for project design and survey instruments, and to carefully monitor implementation along the way. The project’s research design is sophisticated and required considerably more creativity than most other field experiments. Due to the fact that different firms received different degrees of (non-random) interest by potential workers, Jamie carried out scores of separate “lotteries”, each of which was conducted among firms that received similar amounts of worker interest during the application phase. (In other words, since lots of workers wanted to work at particular firms, these “popular” firms are grouped together in the same randomization “cell”, and different numbers of workers are allocated to each of them, allowing Jamie to make valid apples-to-apples comparisons conditional on the inclusion of lottery fixed effects.)

A few institutional details are useful before describing the results. First, the Ghana government program did not provide any wage subsidies for the workers who are “matched” to small businesses, providing little obvious incentive for the businesses to accept the young workers sent to them. However, this does not imply that the program was not valuable to the firms. Jamie argues that the program added value by “screening” job applicants, who needed to fill in a series of forms and attend several meetings in order to be eligible for the program. This may screen out the lowest skilled job seekers, who would not have the

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discipline to follow through on all the steps, providing a useful signal in a weakly institutionalized labor market like that in rural Ghana. Second, Jamie provides an interesting contrast to the traditional apprentice system. Traditional apprentices pay for the privilege of receiving training in a small business (say, with a tailor), with a large up-front fee, and then they get "paid back" with a proportion of the revenue they generate, i.e., if they stitch a shirt for a customer they usually keep a share of the revenue and pass the rest along to the business owner. Jamie argues that this system also provides some screening, since only workers of sufficiently high ability (and thus with sufficiently high expected future earnings as an apprentice) would choose to post the large up-front bond. In her fieldwork, Jamie found that many small business owners explicitly cited a screening motive as the rationale for requiring potential apprentices to post a bond. Based on her understanding of the setting, Jamie develops a simple but useful model of the labor market in which small firms face high costs to hiring on the open market, and in which the returns to labor input are highly heterogeneous (but imperfectly unobserved), leading to a strong desire on the part of firms to screen out low ability workers.

What happens in reality when young workers are "sent" to small businesses through this government program? If small firms were already able to hire all of the workers they needed, you might think not much would change at all. But this is not what Jamie finds. Jamie's first main empirical finding is that most firms do in fact hire these (randomly chosen) workers sent to them through the program, even in the absence of a wage subsidy. The "first stage" is strong: for each worker assigned to a firm, the number of employees in the treatment firm increases by 0.5 the following year, compared to control firms (few of which were able to hire additional workers). The government program appears to be providing a useful service to small firms, by lowering the search costs they face in the labor market, an important piece of evidence suggesting that labor market frictions are likely to be empirically important in this setting.

There are two other important empirical findings. First, Jamie collected multiple rounds of follow-up surveys in order to gauge the effect of increasing labor inputs on firm outcomes, and she shows that production, revenue and profitability all increase significantly in the firms that receive young workers. Each additional worker increases average profitability by roughly 10 percent, a large effect. It was not simply the case that these workers showed up and were taken on by small firms as a sort of charity case: they boosted the bottom line. This finding runs against some older theory in development that stresses how poor local economies have extensive "surplus labor" with marginal products close to zero.

In a fascinating piece of the analysis, Jamie next shows that these gains in profitability are especially large for young workers with high cognitive performance (on the tests that she administered during baseline surveys), and closer to zero for those with average or below average cognitive ability. This strongly indicates that the marginal products of labor are highly heterogeneous in this setting, generating further evidence for the importance of screening by worker ability in this context. Worker heterogeneity is intuitively important but is typically assumed away (due to lack of data, presumably) from most recent analyses using firm level data in Africa and other low income regions.

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Overall, I think very highly of this project. It is topical, focusing on an issue of major current public policy importance in less developed countries. It is a well-designed field experiment, using creative RCT methods, and yields novel and credible evidence on youth labor markets. The data is high quality. Taken together, Jamie's three main empirical findings shed new light on the functioning of African labor markets, and imply that the high rates of youth unemployment in Ghana and other low income settings are the result, at least in part, of substantial labor market imperfections.

Beyond demonstrating Jamie's creativity and other intellectual gifts, the project's success is also a vivid indication of her superior management, inter-personal and leadership skills in field research, all of which are leading indicators of future success in development economics field research. In terms of another dimension of her background that is important for development research, Jamie has strong language skills. She speaks fluent Spanish and English (of course), as well as very good Swahili and decent Luo (which I have observed first-hand in the field in Kenya), and has also studied French, all of which should make her even more successful in future fieldwork.

Overall, I am very impressed with Jamie's research potential, work ethic, and deep intellectual interest in international development, and in African labor markets in particular. Her job market paper is innovative and exciting, and I believe it is likely to be published in a top-5 Economics general interest journal. Personally, Jamie is engaging and can hold her own in any situation, but is also humble and polite to a fault. She is a delight to work with, and will be a superb teacher and colleague. I obviously think very highly of Jamie McCasland and strongly recommend her for all faculty positions in economics, including in the top-10 economics departments, business schools, and public policy departments.

Sincerely,

Edward Miguel