

## RESEARCH STATEMENT

### **OVERVIEW**

My research focuses on intra-household decision-making and migration, specifically understanding the complex relationships between migration, education, and development. These topics are linked through human capital theory, which provides a framework for understanding how individuals and households invest in their own productivity. In my work, I have addressed fundamental issues in economics, including asymmetric information and imperfect commitment, the role of preferences in human capital investments, and nuanced patterns of selection into migration. I combine econometric analysis with game-theoretic models to illustrate the underlying incentives for investment – in human capital and household public goods – and how these incentives are moderated by the physical, social, and economic environment.

My work on household bargaining ([begin-italic]Journal of Population Economics[end-italics], 2011) shows that parental preferences are an important determinant of children's education, but these preferences are highly constrained by income and the need for household labor. Moreover, I find that imperfect commitment and asymmetric information among family members substantially affect the allocation of resources within the household, resulting in inefficiencies ([begin-italics]American Economic Review[end-italics], 2006; [begin-italics]Journal of Development Economics[end-italics], 2013; [begin-italics]Economic Development and Cultural Change[end-italics], 2016). Recent work on immigration ([begin-italics]Journal of Human Capital[end-italics], 2015 and [begin-italics]Geographische Rundschau[end-italics], 2016) reveals that patterns of self-selection are much more nuanced than traditional models suggest, involving multiple dimensions of skill as well as myriad motives and objectives.

My existing research has established that migrants have heterogeneous motives and objectives and, therefore, varying relationships with their origin households as well as differing effects on source and destination economies. This provides the foundation for a number of extensions to my research program, for which I have established new collaborations, inter-disciplinary linkages, and external funding. Ongoing research seeks to establish a clearer distinction between temporary and permanent migrants. To support this work, I have been awarded, as PI or Co-PI, over \$250,000 to conduct a unique panel data collection effort in Bangladesh, involving traditional and mobile phone surveys, to track both permanent and temporary migrants. This effort is part of a larger inter-disciplinary research program joint with earth scientists, sociologists, and geographers, to examine climate change resilience and adaptation in coastal Bangladesh, for which I have been Co-I on projects funded by the National Science Foundation and the Rockefeller Foundation.

### **COOPERATION AND EFFICIENCY WITHIN HOUSEHOLDS**

This research program examines the motives and potential for cooperative behavior, focusing on the roles of information, incentives and social norms. To date, the project has produced three full-length peer-reviewed journal articles, two editor-reviewed proceedings papers, and one working paper. I find evidence of significant information asymmetries between spouses, resulting in varying degrees of inefficiency in the intra-household allocation of resources. In Ghana ([begin-italics]American Journal of Agricultural Economics[end-italics], 2014, joint with graduate student LaPorchia Collins), where spouses independently manage separate agricultural plots, husbands and wives exhibit large discrepancies with respect to their spouses' earnings, expenditure, and Engel curves. Moreover, these discrepancies significantly reduce household profit, with the average effect being roughly equivalent to 15% of the variation between households.

In China [*Journal of Development Economics*, 2013, lead article and *American Economic Review Papers and Proceedings*, 2006), split-household migration exacerbates information problems but effects only allocations that are difficult to monitor, such as time and nutrient allocation. In contrast, observable goods such as child BMI and school enrollment remain unchanged, controlling for income. With regard to policy, this suggests that subsidies for agricultural inputs – where the value is transparent – may have very different effects from subsidies for agricultural credit – where the value could be more easily obscured – even if the two programs have the same overall effect on household income. Finally, as suggested by the Samaritan's Dilemma, altruism is found to reduce incentives for cooperation (*American Journal of Agricultural Economics*, 2012 and *Economic Development and Cultural Change*, 2016, joint with Richard Akresh and Charity Moore, graduate student), all else equal. This suggests that, in scenarios requiring voluntary provision of public goods, it may be optimal to maintain greater social distance between participants.

On-going work on this topic, joint with Md. Nazmul Hassan, in preparation for the *Review of Economics and Statistics*, utilizes survey data collected in Bangladesh (funded by OSU's Targeted Investment in Excellence Initiative and Institute for Population Research) to examine linkages between migrants and origin households. Preliminary results indicate that remittances are utilized by the migrant to incentivize certain allocations by the origin household, while origin households use their expenditures to discipline the remittances of the migrant.

#### **UNDERSTANDING SHORT-TERM MIGRATION**

Data on migration largely fail to distinguish permanent (establish a new residence and household) and temporary (intend to rejoin the origin household at a later date) migrants, leading to ambiguity in how both migrants (e.g., by duration or household membership) and income (e.g., as a remittance or as earnings of a current household member) are characterized and obscuring the interaction between migrants and origin households. The primary objectives of this research program are to document the characteristics of these two disparate types of migrants and analyze the determinants of migration for each, as well as to estimate the causal effect of migration, by type on well-being and economic activity. Research in progress (joint with Katrina Kosec and Valerie Mueller, under review at the *Journal of Political Economy*) combines a Roy model of self-selection with a search model of employment to explain how patterns of selection will differ across permanent and temporary migration and tests these implications with data from Pakistan.

Future research will utilize an ongoing panel survey in Bangladesh that provides linked contemporaneous data on migrants at their destination and their households at the origin. I initiated collection of these data as Principal Investigator, with support from OSU's Targeted Initiatives in Excellence program (joint with Joseph Kaboski) and the Initiative in Population Research's Seed Grant program, and conducted in tandem with an NIH-supported project (Principal Investigators: Mark Pitt, Brown University and Mark Rosenzweig, Yale University). In the last year, I have received additional funding from the International Growth Centre, as Co-PI, to support a second round of data collection, as well as supplementary funding from the International Growth Centre, and OSU's Institute for Population Research and Sustainable and Resilient Economy Program, as PI, to support a mobile phone survey to collect high-frequency migration data. The additional funding will allow me to take advantage of the panel nature of the data, and the innovative design for the re-survey (will provide greater insight the actions and experiences of temporary migrants).

#### **PARENTAL PREFERENCES AND HUMAN CAPITAL**

This area of research focuses on the role of parental preferences in determining investments in children's human capital, specifically health and education. This research, in effect, highlights the limitations of

policy. Interventions can affect resources and incentives but ultimately can do little to alter underlying preferences; understanding the import of preferences, therefore, highlights where economic policy should end and where social policy may begin. The project has two main contributions. First, I find that the effect of parental preferences on human capital investments is quantitatively quite large, in absolute terms and in comparison to the constraints imposed by income and household production ([begin-italics]Journal of Population Economics[end-italics]). Second, I show that the impact of skill-based immigration restrictions on future generations will be dependent not only on the skill-composition of current immigrations but also on patterns of selection with respect to preferences for human capital investment ([begin-italics]Journal of Human Capital[end-italics]).

### **CLIMATE-INDUCED MIGRATION IN BANGLADESH**

This is an inter-disciplinary project, joint with researchers in Earth Sciences, Sociology, and Geography, which allows us to link high-resolution, high-frequency, and fine-scale environmental data (remote sensing and in situ) with socio-economic data on migration and adaptation. Early findings (published in [begin-italics]Geographische Rundschau[end-italics], joint with Boris Braun, Kathryn Dotzel, and Craig Jenkins, and in preparation for [begin-italics]Nature Climate Change[end-italics], joint with Valerie Mueller and AKM Saiful Islam) suggest that environmental factors have a significant effect on migration, though the magnitude is relatively modest, in part because much of the vulnerable population lacks the necessary resources to move. We are working towards the integrated development of a natural and social science framework, employing robust predictive modeling towards adaptation to and mitigation of sea-level rise and other hazards in coastal Bangladesh. An innovation of this project is the collection of high-frequency data on migration via mobile phones. This will allow us to identify even the most vulnerable migrants, particularly those who may migrate over short distances for short periods of time and perhaps lack the resources to move permanently to a more environmentally and climatically stable location. Support from the Belmont Forum, the International Growth Centre, and the Institute for Population Research and the Sustainable and Resilient Economy Program at The Ohio State University is gratefully acknowledged.

Research in progress has been recognized by the American Economic Association as high quality and of great interest to its members. The session I proposed on migration and climate change has been accepted for the 2017 AEA Annual Meeting as well as for publication in the 2017 [begin-italics]American Economic Review Papers and Proceedings[end-italics] issue. Future research will expand these studies to include high-frequency migration data as well as data linked with origin households, to gain a more complete picture of local resilience and adaptation. We are also actively pursuing external funding opportunities to support this research, with pending proposals at NASA and NAS.

### **DETERMINANTS OF DEMAND WITHIN PRODUCT CATEGORIES**

This research program has two components. The first examines inter-temporal trends in energy usage, in terms of absolute quantity and choice of fuel mix. To identify the determinants of the observed energy transition, we estimate the household demand for energy, disaggregated by type, using six large and nationally representative cross-section surveys. Changes in energy use are attributed to changes in income, demographic composition and demand/preferences. This project has produced one scholarly paper (second review at [begin-italics]Energy Economics[end-italics]). The second portion of this program uses 2006-2007 supermarket scanner data to estimate the price sensitivity of four groups of shoppers: higher-income, moderate-income, lower-income and rural dwellers. The results for national brands of cereals show own-price elasticities for moderate-income, lower-income and rural shoppers to be larger (absolute value) than those for higher-income shoppers; these relationships do not hold for private label brands. Further, private label brands are shown to be strong substitutes for national brands, but national brands are weak substitutes for private label brands. The project has produced one peer-reviewed publication ([begin-italics]Journal of Food Distribution Research[end-italics]).