I am a development economist. My research is on the economics of information, mass media, and networks in development: how information is produced, how it travels, and what it does to people's lives.

My evidence comes from India, from randomized experiments I designed and ran, from the staggered arrival of radio and cable television, and from administrative records. I am an Invited Researcher at the Abdul Latif Jameel Poverty Action Lab (J-PAL). I have raised about $164,000 in research grants: three from J-PAL's Governance Initiative (2014, 2015 and 2016), the University of Chicago Provost's Global Faculty Award (2022), and a University of Chicago Kiphart Center Grant (2024). I organize the field work for my experiments, and I have recruited, supervised, and mentored research assistants for both data analysis and field-based roles. I originate ideas, and I write solo or seek co-authors depending on the topic and scope: of the nine studies below, five are sole-authored and four are joint.

I began with the question of what information does once it reaches people. One study tested whether a cheap, non-partisan radio campaign could reduce the payoff to buying votes. During India's 2014 general election we randomized an anti-vote-buying campaign across 60 All India Radio stations. Where it aired, the parties that local journalists identified as the heaviest vote buyers lost 6 to 10 percentage points of vote share, with no change in turnout, at a total cost of about $23,000. Voter survey data show that the campaign increased the salience of corruption as an election issue and decreased voting for parties that offered gifts. From a measurement perspective, we show that journalist interviews can impartially identify vote-buying parties. The findings suggest that when voters are provided with credible, non-partisan information about corruption, they are more likely to punish corrupt politicians at the ballot box. The study was published in the *Journal of Development Economics* in 2023, with Laura Schechter. An experiment on electoral integrity in Colombia, published in the *American Economic Review* in 2022, uses it as its cost benchmark and finds it "approximately five times as cost-effective" as its own campaign.

Whether information changes what people do depends on what kind of information it is. A second study, sole-authored in *World Development* in 2023, uses an unplanned pause in the expansion of All India Radio, caused by border conflicts with China that diverted resources away from the development sector, to estimate how farm radio programs affected the adoption of high-yielding rice and wheat during the Green Revolution. Radio mattered for rice, a technology that needed local know-how, and only briefly for wheat, a more standardized one. I find that the regional farm radio broadcasts increased rice yields by 15%, a magnitude potentially large enough to justify the investments in the expansion of the regional radio network.

Governments have long used broadcasting to shape how citizens see themselves. "Mass Media and Nation Building: Evidence from India" (with Sifei Liu and Pragya Mittal) asks whether state-run mass media can build a nation out of a linguistically and ethnically diverse population. After independence, India expanded All India Radio, a government monopoly that carried news and unity-promoting programming, through the staggered rollout under the five-year plans. We use the stations' primary service areas I assembled from archival broadcasting records and linked to districts. We assembled outcomes from the linguistic censuses of 1931 and 1961 and from vote shares of national and regional parties in constituency results of the 1951–52 and 1957 post-independence general elections. We estimate the impact of radio on national cohesion using staggered difference-in-differences comparing districts that gained radio coverage with those that gained it later or never gained it.

A medium may also change how people live, apart from anything it tells them. "Cable TV and Social Change: Quasi-Experimental Evidence from Rural India" uses three national household surveys from 1993 to 2012 to estimate how the arrival of cable television changed women's status and participation in community life. The surveys record when cable reached each village along with media consumption, social participation, and norms and beliefs. I estimate staggered difference-in-differences comparing villages that received cable with villages that had not yet adopted it or never did. In an earlier version of

the paper, I find that the introduction of cable television improved women's status within households, evidenced by reductions in the acceptance of "wife-beating," but had no effects on their autonomy in decision making or mobility outside the home. Notably, the introduction of cable television significantly decreased women's participation in formal village groups, potentially because of substitution between the two leisure activities, with negative implications for long-term social capital. The paradoxical effect suggests that mass media can crowd out social interactions that are vital for building and maintaining social capital, community cohesion, and social networks.

If broadcast can crowd out social capital, can a program build it? "Building Friendships and Social Capital: Evidence from a Low-Cost Peer-Interaction Program" (with Laura Schechter) asks whether a short and simple program that gives women opportunities to interact can create friendships. Young married women in India often have few opportunities to form local friendships. When women move to their husband's households after marriage, they leave behind many of the relationships they formed while growing up. In the 2017 International Social Survey Programme, 12% of young married women in India report having no close friend, against under 1% of young married men. We ran a randomized controlled trial with 166 young married women in a peri-urban town in Gujarat. Within each cluster, we randomly invited 84 of them to six facilitated in-person meetings over 12 weeks, with basic smartphone and WhatsApp training and a cluster WhatsApp group. The meetings use discussions and games to help women get to know one another. They do not offer financial services or health education; they are intended to foster social interaction.

Being invited creates friendships among participants. At program completion, invited women reported 0.8 more friends than women in the control group, more than twice as many. Eighteen months later, invited contact has become chosen contact: invited women meet more of the other invited women and fewer control women. The program also generates social capital detectable about 22 months later. In an incentivized coordination task, invitation increased the number of other women in her cluster choosing the same answer by 1.4, relative to a control mean of 4.4, while we find no detectable effect on a second task that rewarded the exchange of information. We interpret this ability to mobilize an actual peer network for coordinated action as functional social capital. The effects reach beyond the invited women: each invited woman whom two control women both knew at baseline raises the probability that the two are friends by 14 percentage points. The program cost about $55 per woman who attended and under $90 per friendship created, 80% of which persisted 18 months later.

Each of these studies takes the information as given. My newer work asks how it is produced and whether the coverage and quality can be strengthened and aligned with what communities need. "Supporting Grassroots Journalists: Impact on Local Reporting" (with Pragya Mittal and Laura Schechter) is a randomized trial, now past its pre-pilot, of whether training and supporting local reporters improves coverage of environmental and public problems. We study grassroots reporters in India, known as stringers, who play a key role in gathering and publishing local news but face numerous challenges, including low pay, demanding quotas, reliance on ad revenue, limited career advancement opportunities, and threats to personal safety. These constraints contribute to low morale and to a tendency to prioritize sensational and salacious stories over critical community issues, such as infrastructure deficiencies, public health hazards, and local development programs and needs. We aim to analyze the quantity and quality of the stringers' articles through text analysis and content evaluation, to assess whether the intervention improves journalistic output. We also ask whether better local coverage in turn changes political, policy, and socioeconomic outcomes in the communities they cover.

Universities are conceived to teach the "technology" of producing knowledge as well as to produce it. "Social Returns to Elite Technical Education: Evidence from India" asks whether India's elite engineering institutes raise the innovative output of their graduates. I link the records of all candidates in the 2009

Joint Entrance Examination, including their scores and school-leaving marks, to institute rosters and LinkedIn profiles for enrollment, and to patent filings and OpenAlex publication records for output over the following fifteen years. I estimate effects using regression discontinuity designs at three admission cutoffs: eligibility for an Indian Institute of Technology (IIT), admission to an established rather than a new IIT, and admission to a newer rather than an older field of study.

States structure and direct knowledge for instruction, and a school textbook is a record of what they chose. My new study measures how official school textbooks portray national and regional heroes as governing coalitions change, using text and image analysis of a corpus of 1,170 state textbooks from Maharashtra. The first case is Shivaji, the seventeenth-century Maratha king: I measure whether the books describe his opponents by their religion or by their dynasty and office, and compare editions before and after documented curriculum revisions. I have begun collecting the historical textbooks of Karnataka, Tamil Nadu and Kerala to extend the comparison across states. The next step in the project is to estimate the impact on later political choices and attitudes through a between-cohort analysis.

Spoken language is the oldest information technology. I study how the advent of writing changed how language itself is constructed and used through changing economic institutions. “Contracts and Curses: A Linguistic Excavation of Economic Institutions” asks whether the arrival of writing made “malediction” obsolete for binding contracts. Where nothing can be written down, curses deter breach by invoking supernatural entities. Once a record exists, especially with an authority to judge and enforce, curses become inferior. I assemble passages from a corpus of 2,338 languages, starting with those that first used writing before 1492, together with later recollections of transactions from before writing arrived, and code each passage naming a transaction as bound by curse or not. In the first phase of the project, I estimate a simple difference-in-differences: the change in curse-bound transactions when a society’s writing status changes, against societies whose status has not yet changed, restricting to the modes in which writing was imposed by outsiders.

Artificial intelligence is the next information, communication, and knowledge technology. My current portfolio includes tools to inspect and study it. The Transformer Unboxer follows a six-word sentence through a small but real large language model (LLM) transformer, the architecture behind today’s AI models, so that every matrix and calculation can be inspected. Feed Maxxer runs the published ranking formulas of social media feeds at toy scale. Crypto Minter mines a real block of a cryptocurrency ledger with every step visible. I plan to expand this portfolio to study adoption and impact of AI technologies, building on my prior work on legacy technologies and institutions.