

Abstracts of Papers Presented at the 2023 Annual Meeting

SESSION 1: WOMEN'S WORK

Mismeasuring Women's Work

When measuring women's labor force participation, we might want to know: How much time did women spend working, rather than in leisure? How much time did women spend on market work, as opposed to non-market work? Did women do their work inside or outside the home? How much time did women spend in domestic services, as opposed to agriculture, manufacturing or other services? Unfortunately measuring labor force participation will not give us accurate answers to any of these questions. This paper uses data from nineteenth-century European household accounts to demonstrate that using labor force participation to measure women's work is misleading. If we really want to understand women's work in the past, we need to adopt continuous, rather than binary measures, and we must stop assuming that market work equates to work done outside the home, and that household production equates to domestic services.

JOYCE BURNETTE, *Wabash College*

The Political Economy of Women's Suffrage and World War I

After nearly a century of activism, American women won suffrage rights within one month of WWI's close with the passage of the Nineteenth Amendment. Wartime mobilization drew thousands of women into traditionally male-dominated industries, altering society's view on the suitability of women in the workplace and public sphere. This paper studies the effect of women's labor force participation (LFP) during WWI on political support for the Nineteenth Amendment. I introduce newly-digitized data charting the allocation of women's labor across war-related industries throughout WWI to show that a 3.65pp (1SD) increase in women's LFP from 1910–20 was associated with a 14pp increase in the probability that a congressman supported the Nineteenth Amendment. I implement two identification strategies, difference-in-differences, and shift-share instrumental variables, to verify the causality of this relationship. My findings imply that LFP and civic engagement are complements, and that market labor may offer means to widened political rights.

MADISON KURR ARNSBARGER, *University of Pittsburgh*

The Great Migration and the Labor Force Participation of Females

This paper explores the complex impacts of the Great Migration on the allocation of female labor between market and non-market work. Black female migrants to Northern cities had labor force participation rates of over 50 percent with a large share of those women working in domestic services. This impacted white female labor supply in competing ways. Black female domestic workers served as a substitute to the market labor of white domestic workers. However, they also allowed white females employable in white collar occupations to shift their time from household production to market work. I estimate these impacts of black female inflows on female labor force participation. Preliminary results suggest that the inflow of black females into Northern cities substantially altered the supply of private household service employees, and that this inflow is associated with slight decreases in white female labor force participation but increased white family sizes.

JOHN PARMAN, *College of William and Mary*

SESSION 2: EUROPEAN POLITICAL ECONOMY

Surveillance and Political Development

In this paper, we examine the impact of tsarist repression on political preferences during the Russian Revolution of 1917, using previously unexplored data from the operations of the Okhrana between the 1880s and 1917. Constructing a measure of local repression intensity, we estimate

operationalize surveillance's impact on electoral outcomes during the 1917 Constituent Assembly, the only free and general elections in Russia to date. We measure political support for the radical left in terms of votes cast for the Bolshevik Party. We find that stronger repression at the local level decreased electoral polarization and shifted the ideological center of gravity to the left. This negative effect at the district level is consistent with a predominantly economic motivation of national minorities. We further find positive effects of the anti-Semitic dimension of Tsarist repression on voting for the right at the district level, ruling out a pure economic explanation. We conclude that local-level repression by the Okhrana, in particular, increased support for the left in revolutionary Russia, but not for the Bolsheviks as suggested by earlier studies and in general rather dampened the polarization of politics in 1917, setting the stage for Civil War.

JULIA ZIMMERMANN, *Freie Universität Berlin*, and
THEOCHARIS GRIGORIADIS, *Freie Universität Berlin*

The Political Effects of the 1918 Influenza Pandemic in Germany

How do health crises affect political competition? We exploit spatial heterogeneity in the intensity of the 1918 Influenza pandemic in a panel of election results across German electoral districts from 1893 to 1933 to study effects on voting behavior in a dynamic differences-in-differences framework. We find that regions with higher flu mortality (excess mortality due to Influenza, purged of excess mortality due to war), experienced an immediate and lasting shift of votes toward left-wing parties. Despite suppression of news about the pandemic to keep up morale during the final days of WWI, the flu must have been quite salient for voters. In subsequent elections, they rewarded parties that signaled the highest competence in health issues rather than punishing incumbents for the missing policy response or shifting allegiance to extremist parties.

ERIK HORNUNG, *University of Cologne*,
STEFAN BAUERNSCHUSTER, *University of Passau*,
MATTHIAS BLUM, *German Medical Association*, and
CHRISTOPH KOENIG, *University of Romer Tor Vergata*

The American Origins of the French Revolution

France sent five thousand men to fight alongside George Washington's army in the American Revolutionary War. We show that the French combatants' exposure to the United States of America increased support for the French Revolution a decade later. French regions (départements) from which more American combatants originated had more revolutionary societies, volunteers for the revolutionary army, riots against feudal institutions, and emigrants from the Old Regime's elite. To establish causality, we exploit two historical coincidences: (i) originally, a French army of seven and a half thousand was ready to board ships but one-third did not sail to America because of logistical problems; (ii) among the regiments who fought in America against the British, some regiments were stationed in the United States before and after the main battle, while others were stationed in the Caribbean colonies. We find that only the combatants who were exposed to the United States affected the French Revolution after their return.

LUKAS ROSENBERGER, *Northwestern University*, and
SEBASTIAN OTTINGER, *CERGE-EI Prague*

SECTION 3: MACRO/FINANCE

Market Efficiency before the SEC: Evidence from the Teapot Dome Scandal

We study the stock market reaction to the Teapot Dome affair during the Harding administration of the early 1920s, in which oil industry moguls bribed a cabinet member for the illegal leasing of federal naval oil reserves. Using a novel dataset of high-frequency stock prices, we find a significant response to public revelation of Sinclair Consolidated's leases; however, we also find that insiders had incorporated most of the news into share prices prior to the surprise news break. Other key events show insignificant price responses to news. Overall, Sinclair's top shareholders achieved

considerable excess returns to their illicit activity. Moreover, we observe extreme profiteering, via front-running private information, by insiders at the expense of outsiders—evidence that contradicts typical normative arguments for legalized insider trading. We also note that market makers imperfectly protected themselves against suspected insiders by increasing bid-ask spreads.

NOAH MATTHEW MACDONALD, *Emory University*, and
CAROLINE FOHLIN, *Emory University*

How Do Financial Crises Redistribute Risk?

We examine how financial crises redistribute risk, employing novel empirical methods and micro data from the largest financial crisis of the 20th century—the Great Depression. Using balance-sheet and systemic risk measures at the bank level, we build an econometric model with incidental truncation that jointly considers bank survival, the type of bank closure (consolidations, takeovers, and failures), and changes to bank risk. Despite roughly 9,000 bank closures, risk did not leave the system; instead, it increased. We show that risk was, in fact, redistributed to banks that were healthier prior to the financial crisis. A key mechanism driving the redistribution of risk was bank acquisition. Acquiring banks exhibit balance-sheet and systemic risk changes that are between 20–25% higher than nonacquirers. Our findings suggest that financial crises do not purge risk from the system, and that merger policies are commonly used to deal with troubled financial institutions during crises.

KRIS MITCHENER, *Santa Clara University*, and
ANGELA VOSSMEYER, *Claremont McKenna College*

Financial Scarring and the Failure of the Freedman's Savings Bank

The Freedman's Savings Bank (FSB) was formed in the aftermath of the Civil War to provide a banking institution for ex-slaves. Thirty-seven branches spanned across 17 states and D.C. and attracted deposits from approximately 70,000 freedmen. In 1874 the bank failed, destroying half of Black wealth and instilling a deep mistrust in government and financial institutions throughout Black communities. We study the effect of the bank's failure on Black household insurance holdings. Using U.S. census data from 1850–1940, we find that counties with high exposure to the bank's failure placed a larger proportion of household savings in life insurance investments, which are low-risk and yield notoriously low returns. This evidence suggests that the FSB's failure engendered intergenerational financial scarring and likely contributes to the size and persistence of the racial wealth gap over the last 150 years.

MARK CHRISTOPHER VAN ORDEN, *University of California, Irvine*,
VELLORE ARTHI, *University of California, Irvine*, and
GARY RICHARDSON, *University of California, Irvine*

SESSION 4: INSTITUTIONS AND CULTURE

The Impact of the Black Death on the Adoption of the Printing Press

The diffusion of the printing press across Europe in the late fifteenth century has been linked to increased growth and the later spread of the Reformation. But what factors explain which cities adopted the printing press earlier than others? The literature on technical change supports the idea that market size is an important factor in the diffusion of innovation. A challenge, however, is that market size is endogenous to many unobserved variables. We leverage plausibly exogenous variation in mortality from the Black Death (1347–52) across European cities to estimate the causal impact of market size on early print adoption. Using the universe of data from the Universal Short Title Catalogue we create a new database linking early European printed material to historical city populations. We find that cities whose populations were more heavily impacted by the Black Death were less likely to be early adopters of the press. We also investigate the intensive margin proxied by number of editions.

NOEL JOHNSON, *George Mason University*,
ALEXANDER TAYLOR, *George Mason University*, and
ANDREW THOMAS, *George Mason University*

*Enlightenment Ideals and Belief in Science in the Run-up to the Industrial Revolution:
A Textual Analysis*

Recent accounts of Britain's economic takeoff have emphasized the importance of Enlightenment ideals that had an optimistic view of scientific and industrial pursuits. This paper tests these claims using quantitative data from 173,031 works printed in English from 1500–1900. We employ an algorithm to determine the proportion of each volume that is associated with science, religion, and political economy. We then determine the optimism sentiment of each volume. The analysis yields two primary findings. First, there is little overlap in science and religion. This indicates that the “secularization” of science was entrenched prior to the Enlightenment. Second, volumes at the nexus of science and political economy became more optimistic during the Enlightenment, although purely scientific and religious volumes reveal little optimism. This suggests that it was the more pragmatic works of science that contained the cultural values cited as important for Britain's economic rise.

JARED RUBIN, *Chapman University*,
ALI ALMELHEM, *The World Bank*,
MURAT IYIGUN, *University of Colorado, Boulder*,
and AUSTIN KENNEDY, *University of Colorado, Boulder*

Conflict and Gender Norms: Evidence from India

Where do gender norms that favor men come from? Does exposure to pre-colonial warfare shape the status of women in India today? Traditionally males might have been more valued due to their comparative advantage in violence; Although this may no longer be suited to the current environment, the cultural norm persists. Using district level data on pre-colonial conflict, we show that pre-colonial conflict exposure predicts lower female shares in 1931 and in 2011. In Demographic and Health Survey data, we find that pre-colonial conflict exposure reduces the probability that a child is female and predicts greater violence against women. The results survive controlling for centuries of foreign conquest, direct rule, language, and religion.

BISHNUPRIYA GUPTA, *University of Warwick*,
MARK DINCENCO, *University of Michigan*,
JAMES FENSKE, *University of Warwick*,
and ANIL MENON, *Cornell University*

SESSION 5: AMERICAN POLITICAL ECONOMY

*Changes in the Cross-State Distribution of Federal Funds When the New Deal Emergency Shifted
Control from Congress to the Executive*

During the 1930s the New Deal introduced the Agricultural Adjustment Administration (AAA) to pay farmers to take land out of production and the Farm Credit Administration to provide low-interest loans. Meanwhile, farmers faced some of the worst heat and droughts in American history. To examine the impact of these factors in cotton agriculture, we develop a new county panel data set for the years 1919, 1924, 1929, 1934, and 1939. Using analyses with fixed effects and instrumental variables, we examine their impact on overall income, the value of land and farm buildings, cotton yields per acre and farm, and decisions on whether to continue farming, the size of the farm, how much acreage to plant for each crop, and the use of machinery, work animals, and fertilizer. The results show that the AAA and farm loan programs worked at cross-purposes by having opposite effects on many of the farmers' decisions.

PRICE V. FISHBACK, *University of Arizona*, and
VALENTINA KACHANOVSKAYA, *University of Arizona*

Fence Laws: Liability Rules and Agricultural Development

This paper uses the evolution of fence laws in the American West to show that liability assignment can influence resource allocation and productivity. Local fence laws assign animal trespassing liability to either farmers or ranchers. I compiled a dataset documenting all county-level fence law changes from 1850 to 1930 for states on the Great Plains and compared adjacent counties with

different fence laws to identify the causal effect of fence laws on agricultural development. Results show that changing liability assignments had asymmetric effects. Shifting the liability from ranchers to farmers decreased rural population density and farmland areas. On the other hand, shifting liability from farmers to ranchers increased the share of farmland used for wheat and corn, which led to a higher total value of farm output. Reducing farmers' liability also shifted the composition of land acquisition by increasing the share of land acquired under Homestead instead of cash purchase.

JINGYI HUANG, *Brandeis University*

The Confederate Diaspora

This paper shows how white migrants out of the postbellum South forged a Confederate cultural diaspora across the United States. These migrants brought their cultural attachments to new parts of the country, laying the groundwork for Confederate symbols and racial norms to become pervasive nationally in the early twentieth century. Former Confederates, especially those from slaveholding backgrounds, sorted into positions of power and established institutions throughout the country, which played an important role in the diffusion and entrenchment of Confederate culture. Migrants also transmitted cultural norms to their children and to non-Southern white populations. The legacy of the Confederate diaspora endures today through greater racial inequities in labor, housing, and policing.

ANDREAS FERRARA, *University of Pittsburgh*,
SAMUEL BAZZI, *University of California, San Diego*,
and MARTIN FISZBEIN, *Boston University*

SESSION 6: HEALTH

Meat, Meal, and Molasses: How Post-Civil War Farm Tenancy Created Food Deserts

We present evidence that present-day nutritional inequality is rooted in post-Civil War agricultural arrangements. The tenancy system in the South led to concentration in agricultural production and a reduction in local food variety. Southern black tenants formed food habits based on reduced food variety, which have persisted until today. To identify the effects of these persistent food habits, we develop a novel link between 1940 Census location identifiers and present-day Census tracts and link historical Census records. We find that locations in Northern cities in which black migrants from Southern counties with a high tenancy share settled during the Great Migration are more likely to exhibit food deserts today. Our findings suggest that health policy responses should consider demand side factors that contribute to nutritional inequality.

RALF MEISENZAHN, *Federal Reserve Bank of Chicago*,
PHILIPP AGER, *University of Mannheim*, and
STEFAN GISSLER, *Federal Reserve Board*

Safeguarding Consumers through Minimum Quality Standards: Milk Inspections and Urban Mortality, 1880–1910

We examine the effect of enforcing minimum quality standards (MQSs) on consumer health. In the late 1800s, the urban milk supply was regularly skimmed and diluted with water, but consumers could not easily determine its quality because dyes, caramel, and salt were added. To protect consumers, milk inspectors were tasked with enforcing a well-defined MQS. Using city-level data for the period 1880–1910, we find that milk inspections reduced mortality from waterborne and foodborne diseases by 12–19 percent. Ours is the first study to provide evidence that MQSs can improve consumer health when directly applied to an experience or credence good.

MICHAEL MCKELLIGOTT, *University of Chicago*,
KERWIN CHARLES, *Yale College of Management*,
D. MARK ANDERSON, *Montana State University*, and
DANIEL REES, *Universidad Carlos III de Madrid*

Vaccines, Verdicts, and Vitriol: The Effect of Smallpox Court Decisions on Anti-Vaccine Sentiment

We estimate the effect of court decisions upholding compulsory vaccine laws on mortality and anti-vaccination sentiment. We measure anti-vaccine sentiment using language in newspapers in the *Chronicling America* newspaper archive from 1880 to 1922. Research assistants coded whether roughly 2,300 articles contained anti-vaccine sentiment. We use this training data and machine learning techniques to then predict sentiment for nearly 48,000 articles. We similarly estimate the relationship between smallpox mortality and newspaper language during the vital statistics era to generate mortality estimates during the pre-vital statistics era. Difference-in-differences estimates suggest that pro-vaccine court decisions nearly eliminated smallpox, but anti-vaccine sentiment increased for a period of two years before returning to baseline. Regression discontinuity in time estimates yield similar findings following the *Jacobson v. Massachusetts* Supreme Court decision.

MARTIN SAAVEDRA, *Rutgers University*, and
PAUL BREHM, *Oberlin College*

SESSION 7: CARE

The Professionalization of Nursing: Causes and Consequences

Nursing was one of the first occupations that welcomed single women into the labor force. Yet we know comparatively little about the women who became nurses and the broader consequences of professionalization. I examine these topics in the U.S. context from 1870 to 1940. I construct a panel of nurse training schools to document the rise of professional nursing starting in the 1880s. Using a proximity instrument, I ask whether training schools measurably increased the share of women working in healthcare. I construct a novel dataset of nursing school alumni records linked to census records. With these data, I measure the background, marriage, and labor force participation patterns of nurses. Preliminary results show that many nurses had long careers high despite occupational hazards like war and disease. As the occupation formalized, nursing began to reflect broader social changes, such as the increase in marriage among educated women born from 1870 to 1900.

ANTHONY BALD, *Harvard University*

Care and Work for Persons with Intellectual and Developmental Disabilities in the United States: Links between Past Policy and Current Outcomes

For much of the twentieth century, U.S. states cared, to varying degrees, for persons with intellectual or developmental disabilities (IDD) in institutions. Today, federal law requires states to care for persons with IDD in the community, but outcomes vary widely by state. This paper is the first quantitative examination of the influence of historical policy on current state-to-state variation in labor market outcomes for persons with IDD. Preliminary results suggest that states with greater early reliance on institutionalizing persons with IDD are more successful in creating employment in the community for them today. The paper considers mechanisms of persistence, particularly state budgeting processes; seeks confirmation in the narrative history and gray literature on disability policy; and addresses the role of anti-persistence in the form of reliance on sheltered workshops in the 1970s.

MARY ESCHELBACH HANSEN, *American University*

Efficiency and Dignity in the Unbundled Home

The industrial economy made a dual promise to the American homemaker in the twentieth century: first, that machines would save her untold amounts of time; and second, that this influx of life-changing technology would nix the drudgery but maintain the dignity of her position. This paper evaluates the track record of these promises and explores their relation to the paradox of modern convenience, human capital in the home, methods of national accounting, and the idea of afterwork-life balance. The concept of an “unbundled” schedule is introduced to explain how innovation in housework often results in more streamlined processes which are less easily combined with

other routine tasks, representing a simultaneous increase and decrease in efficiency. The paper also considers the extent to which the work of the homemaker has transitioned from skilled to unskilled labor, mirroring the earlier transformation of craftsman to assembly line worker outside the home.

MEREDITH McDONOUGH THORNBURGH, *Princeton University*

SESSION 8: PREMODERN LIVING STANDARDS AND LABOR MARKETS

Wages and Labor Relations in the Middle Ages: It's Not (All) about the Money

Historians have long appreciated that wages are among the best evidence to explore the dynamics of preindustrial economies. Yet, there remains a degree of arbitrariness surrounding the data and assumptions that underpin many wage series. One issue, hitherto overlooked, is the composition of wage payments. In medieval England, as in most pre-modern societies, wages were paid both in cash and “in-kind.” To date, wages paid in-kind have either been ignored or their value has been estimated using a consumer price index (CPI) basket of goods. We demonstrate that both approaches lead to significant measurement error. We apply a more robust historical method, based on the systematic gathering of wage payments, accurately costed with their in-kind components, to the abundantly available medieval archival evidence. This facilitates the creation of a more accurate wage series which deviates significantly from earlier studies.

JORDAN CLARIDGE, *London School of Economics*,
VINCENT DELABASTITA, *Radboud University*, and
SPIKE GIBBS, *University of Mannheim*

The Unequal Spirit of the Protestant Reformation: Particularism and Wealth Distribution in Early Modern Germany

This paper studies the impact of the Protestant Reformation on wealth distribution and in-equality in confessionally divided Germany, between 1400 and 1800. The Reformation expanded social welfare, but provided it in a particularistic way to insiders only. This gave Protestantism an ambiguous character in terms of redistribution and its impact on inequality. I develop a theoretical framework of this trade-off between welfare expansion and particularistic provision, and test its implications empirically, using a Difference-in-Differences and an Instrumental Variable strategy. In line with the theoretical framework, I document that the Reformation exacerbated inequality overall, by making marginal poor people relatively poorer. The result is driven by the introduction of new particularistic poor relief policies in Protestant communities. The inegalitarian character of Protestantism, typically found in contemporary societies, can be traced back to the sixteenth century.

FELIX SCHAFF, *European University Institute*

Market Structure and Competition for Indigenous Labor

This paper assembles novel data from the account books of the Hudson’s Bay Company (HBC) to study the wage effects of a new entrant into a monopsonistic market for native labor. We show that in the setting of Canada’s colonial economy, where native labor is difficult to coerce and mobile between firms, increased competition improves wages for native workers. This unique case study allows us to isolate concentration as the main channel of labor market power and quantify the wage impacts of a transition from monopoly to duopsony. We find that a 100km increase in distance to the nearest competitor location is associated with a 1.5 percent decline in wages. We additionally demonstrate that heightened inter-firm competition between colonial companies led to a proliferation of trading posts, in line with the predictions of a simple model of spatial competition.

DAVIS KEDROSKY, *Northwestern University*,
LUKAS LEUCHT, *University of California, Berkeley*, and
CHIARA MOTTA, *University of California, Berkeley*

SESSION 9: URBAN

The Price of Housing in the United States, 1890–2006

Housing is central to economics, both as a key service and as an asset, with real estate the largest component of household balance sheets. However, existing long-run series covering local housing markets in the United States are limited, particularly before 1975. This paper presents new price indices for owned and rented housing based on millions of archival newspaper listings that consistently cover major cities in the United States between 1890 and 2006. We use this data to present several new facts about urban housing markets in the twentieth century.

ALLISON SHERTZER, *Federal Reserve Bank of Philadelphia*,
 RONAN LYONS, *Trinity College Dublin*,
 ROWENA GRAY, *University of California, Merced*,
 and DAVID AGORASTOS, *University of Pittsburgh*

Washed Away: Lasting Effects of the Ohio Flood of 1913

The Ohio Flood of 1913 was one of the most devastating twentieth century natural disasters in the United States. This paper analyzes the impact of this extreme event on long-run economic outcomes. Using a reweighted differences-in-differences approach, we find that the Flood depressed manufacturing output and wages in affected counties but had little effect on agricultural output. Longitudinal links in the LIFE-M data allow us to track the outcomes of children who were in counties highly affected by the Flood when it struck. We find negative wage and employment impacts for children entering the labor market in the immediate aftermath of the 1913 Flood. In addition, we find negative effects on the educational attainment of children under the age of five when the Flood occurred. This evidence of long-run scarring highlights the enduring consequences of natural disasters.

ALEXA PRETTYMAN, *University of California, Los Angeles*,
 JOHNNY HUYHN, *University of California, Los Angeles*,
 and MARTHA J. BAILEY, *Towson University*

Agglomeration over the Long Run: Evidence from County Seat Wars

We study the long-run effects of urban growth using a regression discontinuity (RD) design on close elections that selected “county seats” (capitals) in the frontier United States. An election victory signaled a community’s prominence in the mobile frontier period which proved attractive to new migrants. By 2010, election victors are causally 310 percent larger and have 8.5 percent higher Zip-level income. The timing of these effects helps characterize when historical shocks matter for long-run outcomes. The effects are primarily driven by elections that occur soon after a county is created, indicating that these shocks matter only early in history. These transitions occur relatively quickly, with most economic and demographic transitions occurring within two decades of an election victory. In contrast to other important historical shocks, county seat status did not involve significant public investments and only transferred a small number of jobs.

CORY SMITH, *University of Maryland*, and
 AMRITA KULKA, *University of Warwick*

SESSION 10: EGG TIMER SESSION — INNOVATION, FINANCE, AND URBAN

—PART A: INNOVATION/FINANCE

The U.S. Rubber Famine during World War II

Contrary to what is widely believed, manufacturing productivity fell sharply in the United States between 1941 and 1945. The main causes were the sudden, radical, and ultimately temporary changes in the product mix. By April 1942 Japan had created additional disruption by cutting off almost all

supplies of natural rubber, the one strategic material for which the United States had effectively no domestic sourcing. The resulting famine aggravated downward pressures on U.S. productivity and adversely affected the country's military capability. The risks, widely foreseen, could be mitigated by stockpiling, cultivation of guayule, or production of synthetic. Jesse Jones' role in slow walking the first and third of these strategies reveals flaws in the constant calls for "czars" to direct war mobilization. This largely forgotten history has relevance for the post-pandemic reassessment of the benefits of cheap foreign sourcing, especially where there is minimal home capability or possibilities for substitution.

ALEXANDER J. FIELD, *Santa Clara University*

"Dormant Securities": Imperial Guarantees for Colonial Loans, 1840–1940

We revisit the financial links between Britain and its colonies. Colonies floated securities in London. Contemporaries and historians since agree that colonies did not borrow on their own credit. Despite this, Britain explicitly guaranteed bonds for some colonies between the 1840s and the IBRD loans to European colonies in the 1950s. First, we test whether markets priced these guarantees. We find they did as guaranteed bonds paid lower spreads than other colonial bonds. The second question is whether colonial governments lobbied for guarantees. While some did, guarantees became less popular because of conditionality imposed by Britain. A final question regards the motivations for the United Kingdom to grant these guarantees. Initially reserved for strategic and humanitarian reasons, guarantees were later focused on subsidizing development projects, eventually underwritten by the World Bank. Guaranteed bonds were also a new class of safe assets, which were in high demand in European markets.

RUI ESTEVES, *Geneva Graduate Institute*, and
COSKUN TUNÇER, *University College London*

—PART B: URBAN

The Consequences of Hometown Regiment What Happened in Hometown When the Soldiers Never Returned?

War sometimes causes large loss of resources that may alter the path of economic development. However, the overall effect is ambiguous because of the strong resilience of market economies. Japan lost about two million soldiers in World War II, resulting in a large gender imbalance. Moreover, due to the hometown regiment system, the losses of males were concentrated in certain cohorts of certain prefectures. By exploiting the cohort-prefecture variation in the changes in gender ratio, we show that the permanent loss of young men slowed the development of the manufacturing sector, albeit limited quantitatively. Female labor force participation increased, and it was absorbed by both changes in the sectoral composition and the gender mix within the sector.

RYO KAMBAYASHI, *IER, Hitotsubashi University*, and
KENTARO ASAI, *Paris School of Economics*

The Local Effects of the First Golden Age of Globalization: Evidence from American Ports, 1870–1900

This paper uses digitized U.S. trade flows data at the customs district level from 1870 to 1900 to investigate whether trade shocks had an effect on the size and composition of U.S. ports' populations and economic activity. I find that trade stimulated districts' population levels, driven principally by urban population growth. Manufacturing activity also increased although I observe no similar increase for agricultural outcomes, implying that trade was a contributor to the structural transformation of America's economy during this period. On the other hand, I do not find any evidence that access to banks was affected by trade during this period. Finally, I show that trade shocks increased the tonnage of ships entering and clearing a given district, and that this tonnage increase came

disproportionately from steam-powered ships; trade shocks therefore had an effect on the adoption of new technologies for shipping in international trade.

JEFF CHAN, *Wilfrid Laurier University*

There Goes the Neighborhood: The Contrary Example of Social Housing in Red Vienna, 1923–1933

Economists have not been generous with social housing. Red Vienna presents a notable counter-example. Between 1923 and 1933, the Social Democratic controlled municipal council constructed around 330 apartment buildings. Leveraging and matching original geocoded datasets on the new buildings, neighborhood businesses, and occupations of tenants and nearby residents, we find that social housing generated significant externalities. We adopt spatial econometric and difference-in-differences methods. Businesses clustered in neighborhoods adjacent to the apartment blocks because they were a source of consumer demand and an available labor supply. Workers flocked to the buildings because of the material and non-material amenities they afforded, and their proximity to employment prospects and low-priced goods. A hub of activity, the new buildings sustained a resilient economic model of growth and redistribution.

MICHAEL HUBERMAN, *Université de Montréal,*

MICHAEL HOEDL, *University of Vienna,* and

MARIO HOLZNER, *The Vienna Institute for International Economic Studies*

SESSION 11: EGG TIMER SESSION — EDUCATION, INSTITUTIONS, AND POLITICAL ECONOMY

—PART A: EDUCATION/POLITICAL ECONOMY

Low Fees, Large Barriers to Education: Evidence from Rate Bill Abolition in the United States

Until the late nineteenth century, families in some municipalities paid small user fees, called rate bills, for their children to attend public schools. Urban school districts gradually repealed these fees and funded public education through local taxes. States eventually abolished rate bills, forcing rural areas to provide public education without tuition requirements. Using U.S. Census data and a staggered adoption difference-in-differences approach, I show that state-level rate bill abolition increased rural primary school attendance by 7.2 percentage points. These results suggest that small costs can be an obstacle to school attendance and inhibit the diffusion of education.

RICHARD UHRIG, *Bureau of Labor Statistics*

Municipal Socialism in the United States, 1900–1940

In the early twentieth century, a sizable socialist movement emerged across the United States, drawing support from populists, unions, and European immigrants. While socialist political candidates had little support at the national level, they were considerably more successful at the municipal level. Between 1900 and 1940, over 1,000 Socialist officials were elected or appointed across 348 cities and towns, and 146 cities elected socialist mayors. While prominent examples, such as Milwaukee, have been the subject of extensive research by historians, there has been no broad quantitative analysis of the resulting differences in governance and outcomes. We remedy this by examining how socialist officials affected local government spending, infrastructure bond issues, the treatment of unionized workers, government form, and the adoption of zoning.

JAMES STODLA, *Colby College,* and

TATE TWINAM, *College of William & Mary*

Brexit and the Blitz: Conflict, Collective Memory, and Euroscepticism

On 23 June 2016, the electorate of the United Kingdom voted to leave the European Union. Britain's relationship with the European project has a long history, and deep historical factors may

have played a role in shaping the outcome of the referendum. I show that the experience (and collective memory) of bombing during the Second World War is one such factor. Combining geo-referenced data from wartime intelligence reports and district-level results of the EU referendum, I show that districts with a greater number of bombing events exhibited higher Leave vote shares. This pattern is robust to controlling for other salient predictors of support for Leave and to using technical details of Luftwaffe technology to instrument for bombing. Collective memory is an important moderator; bombing predicts Leave vote shares only in districts where war graves from the Second World War are most prevalent.

ERIC MELANDER, *University of Birmingham*

—PART B: INSTITUTIONS/POLITICAL ECONOMY

The Road from Serfdom: Property Rights and the End of the Feudal Economic System

What were the causes of the transformation of feudalism to capitalism? How do changing market conditions affect economic institutions? I examine the disappearance of the feudal economic system and the formation of modern land property rights in the Kingdom of Hungary during the nineteenth century. The separation of the landlord and serf economies and the division of the commons finalized the abolition of the serfdom and created stable land property rights that were a prelude to modern agricultural production. I investigate this in the context of the economic integration (customs union and the construction of railroads) of the Habsburg Empire. I find that an improvement in market access increased the probability of the partition of landlord and serf economies. My results suggest that potential returns on secure property rights were important, but transaction costs played an important role in delaying their development.

ROBERT VENYIGE, *Corvinus University of Budapest*

The Borders of Christendom: Protestant-Catholic Fault Lines in Western Europe

What determines the spatial diffusion of belief systems? We study the political economy of Christianization in Western Europe as the result of (1) a bottom-up process that led to the spread of early Christianity across the Roman Empire; and (2) top-down efforts that led to the institutionalization of the Episcopalian approach based around Rome. We explain its effects by assessing the implicit and explicit borders of Catholicism in Europe from the reformation until our days. We find the Protestant-Catholic fault lines in northwestern Europe follow the borders of the Roman limes; we find the distance to it predicts (dis) attachment to Catholicism. We explain the results in light of a social network framework where Rome is the core node, and its control depends on how connected it remains to the rest of the churches. We show Roman infrastructure continued to be relevant by serving as the technological enabler of said connectivity.

FERNANDO ARTEAGA, *University of Pennsylvania*, and
E. ANDRE L'HUILLIER, *Harrisburg University*

SESSION 12: EGG TIMER SESSION —
MORTALITY, LAND REFORM, AND INEQUALITY

—PART A: MORTALITY/LAND REFORM

The Long Reach of Catastrophic Policy: Kazakhstan's Collectivization-Induced Famine, 1931–1933

We investigate the effect of the 1931–1934 famine in Kazakhstan on the height of women born in the areas most affected by famine, their daughters, and grandchildren. We find evidence that women born in Northern-Eastern Kazakhstan in 1929–34, are, on average, 0.35 standard deviations shorter compared to their counterparts born earlier or later. Daughters of women born during the famine are

the most affected, with the adult height 0.74 standard deviations shorter than daughters of mothers born in areas with less severe famine exposure. We document the negative impact of famine on adult height transmitted to third-generation men.

DANA BAZARKULOVA, *Nazarbayev University*,
CHARLES M. BECKER, *Duke University*, and
GALIYA SAGYNDYKOVA, *Nazarbayev University*

Where Were the Missing Girls: Re-Estimating Daughters' Survival in Chinese Lineages, 1350–1900

The high rate of female infanticide in imperial China was not a hidden secret, but quantitative evidence is scant. This paper re-investigates the survival of daughters from 1350 to 1900 using newly digitized genealogical records from six lineages in the Yangzi Delta. Using two separate samples of 19,516 fathers and 6,000 daughters, we find that daughters were more likely to be under-reported than killed—21.4 percent of the daughters died from infanticide and parental neglect and 47.5 percent survived but not reported. Although these proportions are comparable to estimates in earlier works, we argue that female infanticide was not as effective a check on population growth in late imperial China as the California School suggests. Female infanticide was more of a cultural norm than conscious birth control. The growing subsistence pressure might reduce the female infanticide rate, rather than the opposite, as conventional wisdom would have us believe.

SIJIE HU, *Renmin University of China*,
and RUNZHUO ZHAI, *University of Oxford*

Persistent Specialization and Growth: The Italian Land Reform

Land distribution has ambiguous effects on structural transformation: large landowners can slow industrialization by limiting the provision of education, but larger scale and local market power might accelerate the mechanization of production. We examine the effects of redistribution following the Italian 1950 land reform and find that redistribution led to less industrialization. We explain this finding with a reduction in the scale of operations and a more intensive use of family labor. Agricultural specialization persisted for at least 50 years, consistent with models of occupational inheritance. Finally, we show that expropriated areas had lower growth during 1970–2000.

GIAMPAOLO LECCE, *University of Groningen*,
RICCARDO BIANCHI-VIMERCATI, *Northwestern University*,
and MATTEO MAGNARICOTTE, *University of Chicago*

—PART B: INEQUALITY

Historical Resource Booms and Inequality: Pennsylvania Anthracite Country in the Nineteenth Century

How have resource booms affected inequality and long-run standards of living? Like the recent U.S. oil/gas boom-bust cycle, in the nineteenth century Pennsylvania coal mining expanded to meet the nation's energy needs and prosperity was short-lived. A new set of annual wage data for 14 occupations from 1840 to 1928 is combined with other wage series, occupational distributions, and local prices to describe absolute and relative changes in standards-of-living (including bare-bones baskets and welfare ratios). From 1840 to 1860, real wages were generally flat; after the Civil War to the turn-of-the-century, earnings experienced a moderate real appreciation; and, after WWI, they rose rapidly. The coal-fueled industrial economy was expanding, and so was inequality: wages' coefficient of variation doubled over the 30 years from 1880 to 1910. This work helps provide refined income data, and reveals uncommon trends in white/blue-collar, male/female, and ethnic inequality.

JUSTIN BUCCIFERRO, *SUNY Cortland*

Were All the Good Men Married? Investigating the Marriage Premium in Sweden 1947–67

The wage premium married men receive is well-documented, but we do not know why married earn more than comparable unmarried men. Is the marriage premium related to productivity differences due to gains to specialization in marriage or to selection into marriage? Research indicate that the marriage gap has narrowed over time as specialization has diminished and the dual-earner household has become normative. We add a historical component using data on men in Sweden 1947–1967. Data come from a regional population sample with detailed information on earnings and occupation for both men (N= 13,845) and their wives. Comparing OLS and fixed effect (FE) estimates, we found large positive OLS estimates of the marriage premium, but considerably reduced FE estimates (5%), suggesting selection is important. Allowing the premium to vary over time, we found smaller premia in FE regressions, suggesting an increase in specialization across time among blue collar worker households.

MARIA STANFORS, *Lund University*, and
MARTIN DRIBE, *Lund University*

Learning about Personnel Economics from United States Naval History

This paper tackles various issues in personnel economics using the career profiles of American naval officers from 1870 until today. Specifically, we ask how pay, promotions, positions, peers, and prestige affect worker retention during three post-bella periods—after the Civil War, the Great War, and the Cold War. Random variation in task assignments and job promotions allows us to explore factors that causally impact retention of personnel. We develop a number of key insights: (i) increases in pay raises retention; (ii) promotions influence retention more than money alone; (iii) many experiences in the Navy involve “firm-specific” human capital; (iv) growth of modern/technical positions can threaten retention; (v) job exits can be contagious; and (vi) views of the American military held by one’s social group can shape retention. Studying economic history can help managers retain skilled personnel today.

AHMED RAHMAN, *Lehigh University*,
DARRELL GLASER, *United States Naval Academy*, and
ALEX MCQUOID, *United States Naval Academy*

SESSION 13: SLAVERY

The Profitability of the Transatlantic Slave Trade: Aggregate Estimates and Explanatory Factors

One of the most contentious issues in the study of the Atlantic slave trade is the profitability of the trade. In this paper, we contribute by pooling all available data on transatlantic slave ship voyage accounts into a joint dataset. Our results suggest that the profitability (total returns over outlay) on average was comparatively low compared to other investment opportunities, around 8 percent per venture, but with a very high variance. The most important driver of venture profitability was the on-board slave mortality during the Middle Passage. Another factor that impacted upon the profitability was the price of slaves in Africa. Some factors that the traders could control, including the degree of crowding of the slaves during the Middle Passage (when including mortality as a separate explanatory variable), as well as the skills of the ship’s captain in operating the trade, did also have some impact upon ventures’ profitability.

GUILLAUME DAUDIN, *Université Paris Dauphine-PSL*,
KLAS RÖNNBÄCK, *University of Gothenburg*,
GERHARD DE KOK, *Leiden University*, and
DAVID RICHARDSON, *University of Hull*

Was Free Soil Magic Dirt? Endowments versus Institutions

Earlier work found that “free-soil” areas had greater economic development than the region where slavery was legal, even in places that were ecologically similar, such as along the antebellum free-slave border. Was free soil a kind of institutional “magic dirt” or could free farms compete in the slavery-legal region? Here, we consider two classes of tests. First, we construct, separately for

the two regions, suitability indices using soil and climate endowments. The indices suggest free-soil techniques would have done even better in the Upper South than in the North. Second, we draw 30 randomly chosen pages from the 1860 agricultural census in Kentucky, which we compare with earlier samples from neighboring states across the Ohio River. Kentucky farmers that did not use slave labor apparently occupied land of lower value per acre but produced more output per farm value than either their slave-owning neighbors or farmers in the neighboring free states.

PAUL RHODE, *University of Michigan*, and
HOYT BLEAKLEY, *University of Michigan*

A Labor of Freedom: “Free Wombs” and Slave Emancipation in Postcolonial Uruguay

The workings of the transitions from slavery to freedom shaped development paths in the Americas. I rely on a new dataset based on manuscript population listings to examine selective slave emancipation in postcolonial Uruguay, where by 1836 a third of people of African descent were free. Freedom came primarily through their own labor—both in the sense of working and giving birth—as few benefited directly from the gradualist “free-wombs” policy. Reflecting long-standing status hierarchies, people born in Africa and those of darker complexion were more likely to remain enslaved. Using a probit model to control for the effects of age, origin, gender, and other covariates, I show that free Black people were more likely to be found in the less fertile rural areas. I argue that this pattern reflected an embedding of racial inequality onto de facto resource allocation before the de jure abolition of slavery in 1852.

EMILIANO TRAVIESO, *Universidad Carlos III de Madrid*

SESSION 14: LONG-RUN GROWTH

Holocene Climate Change and the Origins of Regional Development

This research examines the impact of Holocene climate change on human development in Europe over the past 12,000 years. I use spatial and temporal variation in early Holocene warming, along with Carbon-14 dated archeological data, to show that higher temperatures from 12,000 to 4,000 years before present were a key determinant of regional Neolithic transitions. I show that these transitions were primarily due to the settlement of warmer regions by Early European Farmers, an ethnic group from the Middle East; in contrast, the native European hunter-gatherers did not adopt agriculture on a significant scale. Warmer regions subsequently witnessed significant increases in population density. This diffusion of agriculture created a path-dependency in the spatial distribution of human activity, as areas that witnessed consistently warmer temperatures over the early Holocene now contain a higher population density and greater economic activity.

EVAN KEITH WIGTON-JONES, *Husson University*

Justices of the Peace: Legal Foundations of the Industrial Revolution

Longstanding debates have been concerned with the role of state capacity. A less studied channel emphasizes legal capacity—the ability of a state to enforce its laws. But exactly how is legal capacity developed? What are its longer-term effects? We study how local legal capacity developed in England and Wales during the Industrial Revolution. The monarchy long relied on unpaid magistrates, known as Justices of the Peace (JPs), to enforce the law in counties. We show that JPs increased in number and influence during the 1600s and 1700s. We also show that counties with more JPs around 1700 experienced more economic development over the following 140 years. Our identification strategy relies on a rich set of controls for geography and pre-seventeenth century development. We also use the number of JPs in 1544 and resident gentry around 1670 as instruments. Our findings have implications for locating the Industrial Revolution and the significance of legal capacity for economic development.

DAN BOGART, *University of California, Irvine*,
TIM BESLEY, *London School of Economics*,
NUNO PALMA, *University of Manchester*, and
JONATHAN CHAPMAN, *University of Bologna*

The Emergence of the Child Quantity-Quality Tradeoff—Insights from Early Modern Academics

The child quality-quantity tradeoff implies that children in larger families receive less human capital. We investigate this relation over the two centuries preceding the Industrial Revolution in a sample of academics from Northern Europe. We build a novel and consistent measure of human capital through time. We show that scholars with high number of publications switched around 1750 from having more siblings to having fewer than others. Such a switch is compatible with an evolutionary growth model in which the Malthusian constraint initially binds, giving rise to an evolutionary advantage of the richest, before being endogenously substituted by a Beckerian constraint with a child quality-quantity tradeoff. Our results lend credence to a reinterpreted Galor and Moav (2002) approach in which the waning of the Malthusian constraints is rooted in human capital accumulation during the eighteenth century.

DAVID DE LA CROIX, *UC Louvain*, and
THOMAS BAUDIN, *IESEG, University of Lille in France*

SESSION 15: LABOR

Mobility of the Innocents: Foundlings and Their Descendants in Nineteenth-Century Florence

The paper addresses social mobility in a disadvantaged group: foundlings' descendants in the historic province of Florence, identified by means of the characteristic surname Innocenti. Following Clark (2015), we compare the frequency of the Innocenti in well-defined status groups with their frequency in the general population. Combining different sources, we build a novel dataset to estimate the Innocenti share in the population, both historically and today. In the nineteenth and early twentieth centuries, we find that foundlings' descendants were overrepresented among prison inmates and underrepresented among top income taxpayers. In both cases, relative representation was regressing toward the average. Our estimates are considerably lower than what Clark views as a near-universal persistence rate of 0.80, and long-run persistence found by Barone and Mocetti (2021) linking contemporary taxpayers to the 1427 Florentine Catasto. Our view "from below" suggests surprising mobility for an economy that even in the 1930s was only semi-industrialized. Even if persistence was very high in this elite, our evidence indicates that in the rest of the distribution mobility was possible, even in the nineteenth century. Foundlings and their descendants were not glued to a sticky floor. Our sources do not allow us to extend the analysis to more recent decades, but we can get an impressionistic sense of mobility in this period from data on elite professions today. They show that the Innocenti are present in significant numbers, but remain underrepresented in occupations, like notaries or pharmacists, where family ties play a pivotal role.

GIULIANA FRESCHI, *Sant'Anna School of Advanced Studies*,
BRIAN A'HEARN, *University of Oxford*, and
GIACOMO GABBUTI, *Sant'Anna School of Advanced Studies*

Household Charitable Giving among U.S. Working-Class Families, 1918–1919

This paper examines household charitable giving in the period just before the New Deal increased government involvement in social services. The 1918–19 BLS Cost of Living Survey provides a window on middle-class giving to church, charity, and patriotic organizations, as well as investment in Liberty Bonds. A lognormal hurdle model is used to estimate the probability of any giving, and the amount given, to different types of organizations. From this, we estimate income elasticities of giving and the substitutability of giving to different types of organizations. The results are compared to findings from studies on modern giving. I find that giving to similar types of organizations was complementary in this time period. Church giving was particularly income inelastic. In contrast with today, families living in the northeast were most likely to give to churches. I consider a few explanations for this result.

JOANNA SHORT, *Augustana College*

Re-Evaluating British Unemployment between the Wars

During the interwar period, Britain experienced a severe employment downturn that coincided with the Great Depression and structural changes in the economy. The literature has debated the contribution of aggregate demand or supply factors to this downturn. This paper presents an alternative perspective focused on job and worker reallocation across industries. Using Labour Gazette data on unemployment in 100 industries, I measure sectoral-level job creation and destruction, estimate industry-level job finding rates to capture worker reallocation, and use Markov transition probabilities between sectors in a simulation of persistent unemployment. I find that the interwar British economy faced allocative shocks that generated significant job creation in some industries and job destruction in others. Impediments to job and worker reallocation in the face of these shocks contributed to high unemployment, but some groups of workers were more affected than others.

MEREDITH PAKER, *Grinnell College*

SESSION 16: ECONOMIC DEMOGRAPHY

Inheritance Customs, the European Marriage Pattern, and Female Empowerment

Through high celibacy rates and late ages at first marriage, the European Marriage Pattern (EMP) limited fertility in Western Europe well before the Industrial Revolution. While the EMP is considered an early determinant of European development, few studies have examined the roots of this institution. In this paper, we show that inheritance customs shaped the EMP and allowed to sustain it over time. We construct a novel Atlas of local inheritance customs for pre-industrial France and Belgium and examine individual-level marriage decisions from genealogical records for the eighteenth and nineteenth centuries. Our preliminary findings show that inheritance customs affected marriage patterns through two distinct channels: women's autonomy and eased economic constraints to form a household.

MATTHEW CURTIS, *ECARES, Université libre de Bruxelles*,
 PAULA GOBBI, *ECARES, Université libre de Bruxelles*,
 MARC GOÑI, *University of Bergen*, and
 JOANNE HADDAD, *ECARES, Université libre de Bruxelles*

The Myth of Female Hypergamy: Marriage in England, 1837–2021

It is widely believed that women have always valued social status in marital partners more than did men, leading to female marital hypergamy, and greater female intergenerational social mobility. However, systematic female hypergamy is only possible in populations if there is a surplus of men, or polygamy, or absence from marriage of lower status men and/or higher status women. Using the evidence of 1.7 million marriages in England 1837–2021 we show that there was never within this era any period of hypergamous marriage by women. The average status of their fathers was always the same as for their husbands' fathers, and the matching of women to men across status ranks was just the same as for men to women. Further there is no differential tendency of men and women to marry by social status. The evidence is of strong symmetry in marital behaviors between men and women throughout this interval.

GREGORY CLARK, *University of California, Davis and University of Southern Denmark*,
 and NEIL CUMMINS, *London School of Economics*

Revisiting the Link between Electrification and Fertility: Evidence from the Early Twentieth Century United States

The decline in fertility occurring throughout the first half of the twentieth century in the United States and preceding the baby boom remains largely unexplored. This paper presents empirical and theoretical evidence linking this decline to the spread of electricity. Using data on early electrification efforts, I empirically disentangle two channels linking electrification and fertility: the

introduction of time-saving appliances that reduce the time needed for child-rearing; and the rise in female wages which raises the opportunity cost of childcare. I then use these empirical estimates to calibrate a model that features both channels and quantifies the aggregate impact of electrification on fertility. I find that electrification explains 3.1 percent of the overall fertility decline in 1900–1940 in the United States, and that this decline is driven by young childless women who can reap the labor market gains of electricity.

DANIELA VIDART, *University of Connecticut*

SESSION 17: INNOVATION

The Impact of Railroads on Innovation: New Evidence from Italy, 1855–1914

This paper analyses the impact of railway expansion on municipal-level measures of innovation in Italy by using two new geo-localized datasets. The first comprises all patents registered in Italy by Italian residents from 1855 to 1914, while the second provides a GIS database indicating the year of construction of all Italian railway stops. In our main exercise, we use a staggered difference-in-differences empirical approach. We find that railroads impacted on the intensity and diffusion of innovation only during the wave of railway construction motivated by nation-building purposes (about 1861–1880). In contrast to the new empirical literature on railways, and more in line with traditional historical interpretations of the role of railways for economic growth, the Italian case suggests that railways are not beneficial for invention if other basic conditions, such as human capital formation, are lacking.

ALESSANDRO NUVOLARI, *Sant'Anna School of Advanced Studies*,
 MARCO MARTINEZ, *Sant'Anna School of Advanced Studies*,
 and MICHELANGELO VASTA, *University of Siena*

Return Innovation: Evidence from the British Migration to the United States, 1870–1940

This paper studies the effect of out-migration on innovation in the country of origin of migrants. During the Age of Mass Migration, approximately four million English migrants settled in the United States. Using a novel individual-level dataset linking English immigrants in the United States to the U.K. census, we construct disaggregated migration flows between England and the United States spanning 1870–1940. We complement these with the newly digitized universe of U.K. patents. Using a new shift-share instrument and a difference-in-differences design, we find that exposure to U.S. technology through migrant ties influences the rate and direction of innovation in Britain. We interpret this finding as evidence of knowledge flows generated by migration ties. The individual-level analysis indicates that return migration has at best a modest effect on innovation. Instead, we find that out-migration fosters knowledge diffusion through social and economic networks that migrants retain with their areas of origin.

DAVIDE MARIA COLUCCIA, *Northwestern University*, and
 GAIA DOSSI, *London School of Economics and Political Science*

America, Jump-Started: World War II R&D and the Takeoff of the U.S. Innovation System

During World War II, the U.S. government's Office of Scientific Research and Development (OSRD) undertook one of the largest public investments in applied R&D in U.S. history. Using data on all OSRD-funded invention, we show this shock had a formative impact on the U.S. innovation system, catalyzing technology clusters around the country, with accompanying increases in high-tech entrepreneurship and employment. These effects continue growing to at least 1970 and appear to be attributable to agglomeration externalities, rather than sustained public R&D investment. In the aggregate, wartime R&D permanently changed the trajectory of U.S. innovation in the direction of funded technologies.

DANIEL P. GROSS, *Duke University*, and
 BHAVEN N. SAMPAT, *Columbia University*

SESSION 18: EDUCATION

Segregation Academies: The Effect of Segregated Private Education on Public School Systems in the Deep South

In the wake of public school integration in the Civil Rights Era, white parents fled to hastily formed, all white private schools known as “segregation academies.” I create a novel data set that documents the locations of these academies in the Deep South. Using this data, I argue these academies caused an absolute decrease in enrollment and relative decrease in investment in the surrounding public school districts. Specifically, I document an approximately 15 percent decrease in total public school enrollment in school districts located within a 10 mile radius of the new academies. In Alabama, whereby race enrollment data is available, this translates to a 25 percent decrease in the white share of enrollment. This white flight from public schools led to a decrease in local investment in public schools: school districts with a segregation academy received up to 8 percent less local funding than school districts without a segregation academy.

DANIELLE GRAVES WILLIAMSON, *Boston University*

Schools and the 1918-Pandemic: Evidence from Half a Million Death Certificates and 1,322 School Closings in Sweden

This paper studies the relationship between mortality and primary schools during the 1918–Pandemic in Sweden. We combine death certificates for more than half a million individuals (1915–1920) with newly collected archival data on school closures for 2,151 parishes. These unique historical data allow us to estimate high-frequency (weekly or daily) event studies, where we find a pattern of increasing (influenza) deaths in the week leading up to the closure and higher mortality the four following weeks, indicating that schools were closed in response to the development of the local epidemic. In a matched sample, in which closing and non-closing parishes have similar mortality trends up until the closure, we also find the school closures increased mortality. Using daily weather data, we demonstrate that this effect is only present when the school closure was followed by days with good weather. These findings highlight the importance of “safe” alternative environments for children when school closure is used as a policy to contain an epidemic. We also document that fast closures, relative to when the epidemic arrived locally, saved lives compared to late closures. Finally, we are not able to detect any effects on socioeconomic outcomes 30–50 years after the closures when comparing cohorts of school age during the epidemic to cohorts just too young to be in school during that year across closing and non-closing parishes.

CASPER WORM HANSEN, *University of Copenhagen*,

CHRISTIAN DAHL, *University of Copenhagen*,

MARTIN KARLSSON, *University of Duisburg-Essen*,

and PETER SANDHOLT JENSEN, *University of Southern Denmark*

College Majors and Economic Mobility over the Twentieth Century

Lower-income college graduates’ wages have declined relative to their higher-income peers over the past 100 years, signaling a potential weakening of higher education’s contribution to economic mobility in the United States. We investigate a series of potential explanations for this phenomenon by bringing together administrative student, faculty, and curriculum records spanning the twentieth century. In contrast to the returns to college, university resources have changed little over time. Newly-linked administrative and survey data on measured academic aptitude do not suggest that changing selection patterns into college-going could explain the observed decline. While changes in institution- and major-specific composition and returns both play important roles, we find striking changes in the latter since the 1930s. Lower-income students have gone from over- to under-represented in high-return college majors like engineering, meaningfully limiting American universities’ mobility potential.

SARAH QUINCY, *Vanderbilt University*,

and ZACHARY BLEEMER, *Princeton University*