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**90-745 Methods of Policy Analysis – The Future of Work  
Spring 2024**

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**Class Time: Tues., Thurs. 5:00-6:20 PM**

**Location: Hamburg Hall  
(Room Number TBA)**

**Professor:**

Lee Branstetter  
Hamburg Hall 2222  
268-4689

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Office Hours: Thursdays 8:30 – 10:00 AM  
(via Zoom)

**Teaching Assistant (to be confirmed):**

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Office Hours: Tuesdays 9-11 AM  
Fridays 4:30-6 PM  
(via Zoom)

**Project Advisor (to be confirmed):**

Andrew Breazeale  
[abreazea@andrew.cmu.edu](mailto:abreazea@andrew.cmu.edu)

Office Hours: Mondays 11:00 AM-12:30  
Wednesdays 4:30-6:00 PM  
(via Zoom)

**Required Materials:** Students will be required to use the Canvas website to access course materials, including lecture notes and some of the required readings.

**Course Objectives:** After decades of slow wage growth and rising inequality, many American workers now fear even worse outcomes as new technologies increasingly replace human labor. Is this likely to occur? How will emerging technologies reshape the U.S. labor market? How important is the “gig economy,” and how big might it become? What impact will the shocks generated by the COVID crisis and inflation have on employment and income inequality in the short run and the long run? What can policy makers do to ensure that the growth of the American economy is more inclusive and equitable? This course has been designed to help Heinz students (and other interested CMU students) think seriously and rigorously about the future of work in the 21<sup>st</sup> century American economy. The course will place current concerns in the broader context of the major structural shifts in the U.S. labor market over the past several decades. Drawing upon the most recent quantitative analyses, the course will show that technological change has contributed to increasingly unequal outcomes in the U.S. labor market, and that this trend is likely to continue as a new wave of technological change unfolds. The course will also consider the degree to which globalization, immigration, rising monopoly power, declining union strength, minimum wage laws, and discrimination based on race and gender have contributed to rising inequality in U.S. incomes. The course will draw upon frontier research to identify old and new policy ideas that could help make economic growth more inclusive, and it will bring into the class policy entrepreneurs who are making a real difference.

**Systems Project Options:** The course will offer three different pathways for students to engage with the material. Two of these pathways involve the “project options.” These options pair MOPA – Future of Work with a systems synthesis projects linked to the content and themes of the course. Students will not just study the problems associated with the future of work – they will also get directly involved in the generation of meaningful solutions by completing original policy analyses for government agencies and nonprofits seeking to make that future more equitable. In order to be eligible for these options, students must also be registered for one of the affiliated systems projects. Students will be assisted by a project group advisor, Heinz Ph.D. candidate Andrew Breazeale, who will meet with them regularly to provide analytical and administrative support.

*Systems Project Option #1: Project + “MOPA Lite”*

These students will **not** be required to take midterm or final exams, and will have reduced homework assignments. Students electing this option will get 6 units of credit for the MOPA course and 12 units of credit for their course-affiliated systems project.

*Systems Project Option #2: Project + “Full MOPA”*

These students will take the full course, including the midterm, the final exam, and all homework assignments. Students electing this option will also get 12 units of credit for the MOPA course and 12 units of credit for their course-affiliated systems project.

**No Project Option:** Students interested in the course material but not interested in undertaking independent group projects have the option of being evaluated through a series of policy essays, a midterm exam, and a final exam. The grading and evaluation system for these students is described in further detail below.

**Pre-requisites:** The only pre-requisite for this course is an introduction to applied microeconomics at the level of Applied Microeconomic Analysis, the required course for Heinz College MSPPM students. However, students should be prepared to make extra effort to acquire understanding of such basic economics frameworks and analytical tools as the course and the tasks provided to our students by our institutional clients may require.

**Course Structure:** The course can be divided into six conceptually distinct content modules.

***Part 1 –Technology, Skills, Inequality, and the Future of Work.*** An appropriate understanding of the future of work has to begin with a solid understanding of the major structural changes in the U.S. labor market over the past four decades. This content module will focus on the well-documented phenomenon of skill-biased technical change. As our technology of production has advanced, demand for highly skilled labor has risen robustly while demand for the least skilled workers has weakened. Scientific study of rising income inequality reveals that the growing imbalance between the demand for high levels of skill and its supply is the single most important factor driving increased income inequality over the past four decades. We will examine how the next wave of new technologies might exacerbate this long-running trend, and what public policies could be put in place to ensure that American workers possess the skills the 21<sup>st</sup> century labor market will demand.

**Part 2 – Immigration, International Trade, and the Future of Work.** Prominent voices on the left *and* right of the political spectrum in the United States have blamed rising inequality and stagnating incomes on foreign goods and foreign workers. We will use the conceptual tools of international economics and labor economics to examine these claims. The scientific evidence suggests that immigration and international trade have both brought significant benefits far greater than their costs, and that neither has been the primary driver of rising inequality over the past generation. That being said, both immigration and trade policy could be reformed to maximize the economic benefits of immigration and international trade while minimizing their social costs.

**Part 3 – Geography and the Future of Work.** In 21<sup>st</sup> century America, economic growth and opportunity are increasingly concentrated in particular areas and regions. Even within cities, access to high-quality schools, jobs, social services, and opportunities for economic advancement is often very inequitably distributed. This section of the course will examine the forces behind the changing geography of growth and opportunity in the 21<sup>st</sup> century American economy and review potential public policy responses.

**Part 4 – Market Power, Redistribution, and the Future of Work.** Some prominent politicians and labor union leaders have blamed the rise in inequality on the declining power of labor unions and the rising monopoly/monopsony power of leading corporations. We will critically examine the role played by declining union density and monopoly/monopsony power in driving rising inequality. We will also examine policy proposals for redistribution of wealth and income.

**Part 5 – The Gig Economy, the COVID Crisis, Rising Inflation, and the Future of Work.** The rise of Uber and Lyft and the increasing popularity of other online work platforms such as Upwork have led some to envision a future labor market in which work assignments and compensation flow through online platforms rather than traditional firms. This section of the course will review the latest research on the gig economy, place its growth and current size in the appropriate context, and examine whether new labor laws, regulations, or practices are needed to support gig economy workers. This section will also examine the short-run and long-run impact of the COVID crisis on U.S. labor markets. Since the sharp rise in U.S. and global inflation stems in part from the COVID crisis and policy reactions to it, we will also consider the economic impact of rising inflation and the options available to policymakers to bring it under control.

**Part 6 – Race, Gender, Class, and the Future of Work.** Discrimination on the basis of race and gender has been a longstanding feature of the U.S. labor market, but recent events have reminded all of us of the degree to which economic opportunity remains shaped by race and gender in 21<sup>st</sup> century America. This section of the course will provide students with a number of perspectives on these problems, including the formal models economists use to analyze and quantify discrimination in the labor market. We will also review a series of recent studies that appear to quantify a significant deterioration in the health and socioeconomic well-being of the white working class.

**Student Projects – (Relevant Only for Students Taking the Systems Project Options)**

## **Long-Run Impact Evaluation of CCAC Allied Health Programs on Income and Employment**

As the largest community college in the region, CCAC has long played a critical role in enabling Pittsburgh area residents of all backgrounds to build skills and improve their economic prospects. Like many other education and training providers, however, CCAC has limited visibility into the longer-run career trajectories of its graduates. Which programs are truly succeeding at putting their graduates on a pathway to prosperous jobs and lives in the changing U.S. labor market?

*This project will focus on CCAC's **allied health** programs.* These programs train students to take patient-facing roles as specialist technicians, such as “radiological technologists,” or as more general health care providers (e.g., nurses). The project will seek to combine the data resources of CCAC with those of Allegheny County’s Department of Human Services (ACDHS), which track a wide range of socioeconomic variables for county residents. (In doing so, we will leverage a longstanding relationship with ACDHS and an existing data sharing agreement between CMU and ACDHS.) To the extent that CCAC allied health/nursing graduates remain in Allegheny County after graduation, ACDHS data, obtained from state unemployment insurance records, could provide useful information on the long-run income and employment outcomes associated with this program. In particular, it would enable the estimation of “wage trajectory” models that show how the incomes of program graduates evolve over the first decade after graduation. This, in turn, could provide useful information to CCAC’s senior leadership, as they seek to optimize their investment of resources across their portfolio of programs. It could also provide useful information to state and national policymakers who are considering a large investment in community college capacity, but are unsure which programs to designate for expansion.

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## **Long-Run Impact Evaluation of the Trade Institute of Pittsburgh’s Programs on Recidivism and Related Social Outcomes**

The Trade Institute of Pittsburgh (TIP) is a non-profit organization and vocational training provider dedicated to providing opportunities for individuals with barriers to employment and others who need additional supports to begin their careers. The Trade Institute is located in the Homewood community of Pittsburgh, Pennsylvania. Founded in 2013, the Trade Institute has engaged and empowered men and women throughout Allegheny County to meet a growing need for skilled tradespeople. TIP offers a 10-week tuition-free training program in masonry and carpentry, life skills courses, and social service supports. Students are matched with a job in a variety of trades or trade-related fields upon graduation.

Like many other education and training providers, TIP has limited visibility into the longer-run impact of its programs on graduates’ income, employment, or other outcomes. TIP seeks to significantly reduce recidivism (i.e., a return to criminal activity) among its graduates, but a lack of data makes the efficacy of these programs hard to evaluate. If TIP does not know what is working and what is not working, it is hard to know how to improve its programs. This year’s Heinz team will seek to provide TIP’s leaders with rigorous statistical estimates of the impact of participation in its programs on the recidivism of its graduates. To accomplish this goal, a Heinz team will analyze anonymized data in which TIP student records have been merged with

comprehensive data from the Commonwealth of Pennsylvania on the interaction of TIP graduates with the criminal justice system, before and after their participation in TIP programs. These comprehensive data will enable a detailed statistical analysis of the degree to which TIP has succeeded in attaining these goals as its programs have evolved and changed. Outcomes for TIP graduates will be compared with the outcomes of area residents who expressed interest in TIP programs or even enrolled in them, but did not graduate.

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### **Transportation Equity, Mobility Justice, and Bikesharing in Pittsburgh**

BikeShare PGH, founded by Heinz Alum David White, is an operator of bikesharing services in the city of Pittsburgh, a service rebranded as POGO in 2022. As a nonprofit dedicated to improving the mobility of underserved populations in a physically healthy and environmentally responsible way, BikeShare PGH has always prioritized making its expanding system of pedal-powered and e-bikes accessible to disadvantaged groups in the Pittsburgh region. The current project seeks to build on a successful project undertaken last year with BikeShare PGH by leveraging new and more accurate data on the actual demographics and income levels of POGO riders.

As already noted, BikeShare PGH has always sought to expand the mobility of underserved populations, and the expansion of its network of bikesharing stations has been guided, in part, by efforts to better connect these populations to jobs, parks, healthcare, and other social resources. However, BikeShare PGH does not require that POGO riders disclose their race or income level. The consequent lack of data on the actual income and demographics of its ridership has challenged BikeShare PGH's efforts to better serve disadvantaged groups. Given this data constraint, which is common to many other bikesharing networks, BikeShare PGH has often had to assume that rides originating in a neighborhood are undertaken by individuals whose race and income reflect the resident demographics of that neighborhood. Of course, this is often not true. The individuals starting a bike trip in a neighborhood could have demographic characteristics that are very different from that neighborhood's residents. Thus, the estimated impact of the evolving POGO network on disadvantaged populations could be very different from its actual impact. While some riders voluntarily disclose their income or ethnicity in order to qualify for reduced price services, most riders do not provide this information. Even when riders do provide this information, it is not always possible to confirm that the information provided is correct. Fortunately, it is possible to combine data on POGO riders with the vast data resources of the Allegheny County Department of Human Services (ACDHS) data warehouse, which contains extensive information on the demographics, ethnic identity, age, gender, and income levels of disadvantaged populations in the Pittsburgh area. These data can be "deidentified" in a way that preserves resident privacy.

This project will enable BikeShare PGH to measure the impact of its network on the mobility of disadvantaged populations much more accurately. It will also quantify the gap between estimates of minority/low-income ridership generated using standard modeling assumptions with the actual minority/low-income ridership attained by the POGO network. The findings could help BikeShare PGH adjust its future investments in docking stations and other policies to better meet the needs of riders from disadvantaged groups. The magnitude and nature of the gaps between estimates of minority/low-income ridership and reality, if sufficiently large, could lead to reconsideration of key results in the received literature on bikesharing and the mobility of underserved populations. It could also suggest

better ways to estimate minority/low-income ridership when individual demographic data are not available.

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## **Requirements and Grading:**

The way students are evaluated in this course will differ substantially, depending on which course option they have chosen. These pathways are outlined below.

### **No Project Option Student Evaluation**

**Class participation – 10%.** Class discussions are an integral part of the course, and class participation will account for **10%** of the total grade. Unexcused absences from class or persistent tardiness in coming to class are grounds for reductions (50% or more) in this component of the grade. To receive full credit for this portion of the grade, students must consistently demonstrate through participation in class discussions that they have completed the required readings and thought through the issues in advance of the class.

**Flipped Classroom Quizzes – 20%.** In order to free up additional time for class discussion, a number of the key lectures will be pre-recorded and archived on the course website for students to study prior to class meetings. To ensure that students are learning the concepts provided by these pre-recorded content modules, they will include quiz questions and/or short essay assignments. Some of these quiz questions and essay assignments will be graded, and collectively, these quiz questions will account for **20%** of your grade. Students *may collaborate* in completing these quizzes and short essay assignments. *Grading policy: full credit for any questions complete by the start of the focal class, 10% off if they submit later that day but after class, 20% off for each additional day late.*

**Quizzes / Homeworks / Policy Essays – 20%.** As we move through the course, you will be required to complete short evaluation exercises designed to measure your understanding of the material we will review and discuss in class. “No project” option students and “Full MOPA” students will complete 4-5 of them. They will collectively account for 20% of your total grade.

**Midterm Examination – 20%.** Students will be required to complete a take-home midterm roughly halfway through the course. Project option students will be excused from this exam. The exam will be open-book and open-note, but no collaboration will be permitted. Students will have 100 minutes to complete the test.

**Final Examination – 30%.** Students will be required to take a comprehensive and cumulative final exam during the regular final exam period. The exam will be open-book and open-note, but no collaboration will be allowed.

Students taking the “Project + Full MOPA” option will be evaluated in the same way as the “no project” students, receiving the full 12 credits from the course according to the grading rubric

described above and the full 12 credits from the systems project according to the grading rubric described below.

### **Project Option “MOPA Lite” Student Evaluation**

**Class participation – 20%.** Class discussions are an integral part of the course, and class participation will account for **20%** of the total grade for “MOPA Lite” students. Unexcused absences from class or persistent tardiness in coming to class are grounds for reductions (50% or more) in this component of the grade. To receive full credit for this portion of the grade, students must consistently demonstrate through participation in class discussions that they have completed the required readings and thought through the issues in advance of the class.

**Flipped Classroom Quizzes – 30%.** Key “lecture” material will be pre-recorded and archived on the course website for students to study prior to class meetings. To ensure that students are learning the concepts provided by these pre-recorded content modules, they will include quiz questions and/or short essay assignments. Some of these quiz questions and essay assignments will be graded, and collectively, these quiz questions will account for **30%** of the grade of “MOPA Lite” students. Students *may collaborate* in completing these quizzes and short essay assignments.

**Short essays/Homeworks – 50%.** As we move through the course, you will be required to complete short evaluation exercises designed to measure your understanding of the material we will review and discuss in class. Project option “MOPA Lite” students will complete only two of these evaluations– one in the first half of the course and one in the second half. They will collectively account for 50% of your total course grade.

### **Project Evaluation (For Students Enrolled in an Affiliated Systems Project)**

**Project meeting participation – 20%.** Project meetings are an integral part of the project development process, and participation in these meetings will account for **20%** of the total grade. Unexcused absences or persistent tardiness are grounds for reductions (50% or more) in this component of the grade. Each group will need to hold a separate set of group meetings outside of MOPA class time. Please work with your designated group advisor to determine these times.

**Project Related Benchmarks–20%.** As you work with your fellow group members to complete your class-affiliated systems project, you will have to undertake a set of activities that will help you prepare for your group presentations. These activities and their due dates will vary somewhat depending on the project to which you are assigned. These details will be specified in a separate handout by the end of the third week of class. They will include items like the completion of a short report summarizing what is already known about the topic, a detailed description of the data to be used, and a short essay laying out the pros and cons of your chosen analytical methods. These assignments will collectively account for 20% of your grade.

**Preliminary Presentation - 20%.** At a time to be determined later, each student team will make a virtual presentation (via internet videoconferencing) of the early results of their project to the instructor, teaching assistant, and client organization staff. Each student will be asked to

evaluate the performance of other team members, the instructor will evaluate the overall performance of the team, and the client agency staff will also make an evaluation. The total grade for the preliminary presentation will place 30% of the weight on the evaluation issued by client agency staff, 40% on the evaluation given by the instructor, and 30% on the evaluation students give each other.

**Final Presentation – 20%.** There will be a final presentation, worth 35% of the total grade, which will be given by each student project team to their client agency. The exact timing of this presentation will be subject to the scheduling constraints of client organization staff, but it is likely to come during the last two weeks of class, just before the final examination period. Evaluation of the final presentation will consist of three components. Each student will be asked to evaluate the performance of other team members, the instructor will evaluate the overall performance of the team, and the client organization staff will also make an evaluation. The total grade for the preliminary presentation will place 60% of the weight on the evaluation issued by client organization staff, 20% on the evaluation given by the instructor, and 20% on the evaluation students give each other.

**Final Report – 15%.** Each group will be required to submit a written report to the client summarizing the conclusions of the project as delivered in the final presentation. This is meant to provide a written record of the team’s analysis that the client could access in future months or years. A set of PowerPoint slides may be difficult to decipher two years after a presentation – this report provides the full analysis depicted in the slides.

**Poster / Virtual Poster Session – 5%.** Each group is required to create a poster summarizing the project and present this as part of the end-of-semester systems project poster presentation.

### **General Class Etiquette**

Please come to (or log onto) class on time. Given the amount of material we have to cover, our time is limited. Your absence from any part of the class shortchanges you and your classmates. I will plan to start on time and end on time. This requires that all students be on time.

Please do not use class time to check e-mail, trade stocks, play video games, or pursue other activities that could distract you from our class.

Students are encouraged to show our guest speakers courtesy and respect. The guests who are sharing their insights via teleconference or videoconference are doing us the enormous favor of contributing their experience and insight to our class discussions without any direct compensation from Carnegie Mellon. You are welcome to pose “challenging” questions to our guest speakers, but you are strongly encouraged to do so in a respectful way, recognizing that access of future student generations to these outside experts will be, in part, a function of the quality of their experience in our classroom.

Likewise, students are expected to show one another similar courtesy and respect in classroom discussions. Students are welcome – indeed, encouraged – to “challenge” one another’s ideas in class, as well as the positions taken by the instructor. However, students are expected to do so in a way that maintains an atmosphere of civility and mutual respect.



All sources used for written assignments must be appropriately cited based on standard citation guidelines and CMU policies. Students are responsible for knowing how to cite sources appropriately. For official CMU definitions of cheating and plagiarism, and academic disciplinary procedures that will be followed in the case of a violation, see: <http://www.cmu.edu/policies/student-and-student-life/academic-integrity.html>. Plagiarism is a serious offense that can result in the student failing the course. Note that all academic integrity violations will be reported to the Associate Dean. Additional penalties may be imposed. See me if you have any questions about appropriate citation **before** handing in an assignment.

If you have a disability and are registered with the Office of Disability Resources, I encourage you to use their online system to notify me of your accommodations and discuss your needs with me as early in the semester as possible. I will work with you to ensure that accommodations are provided as appropriate. If you suspect that you may have a disability and would benefit from accommodations but are not yet registered with the Office of Disability Resources, I encourage you to contact them at [access@andrew.cmu.edu](mailto:access@andrew.cmu.edu).

Take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is here to help: call 412-268-2922 and visit <http://www.cmu.edu/counseling/>. Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.

If you or someone you know is feeling suicidal or in danger of self-harm, call someone immediately, day or night:

CaPS: 412-268-2922

Re:solve Crisis Network: 888-796-8226

If the situation is life threatening, call the police

On campus: CMU Police 412-268-2323