

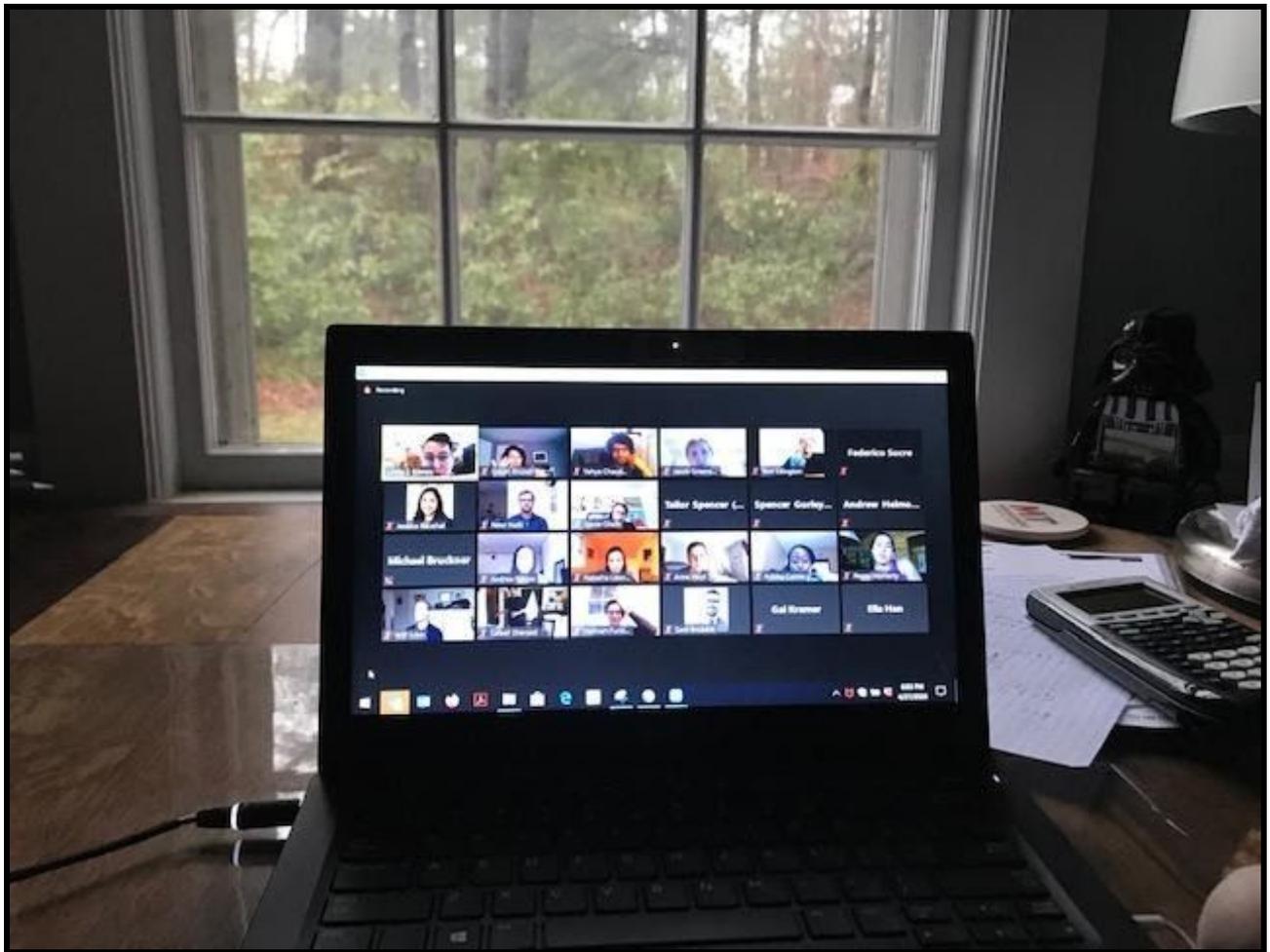


HARVARD Kennedy School

RAPPAPORT INSTITUTE for Greater Boston

Greater Boston Applied Field Lab

Summary of Activities 2019 – 2020



Highlights

The start of our 15th year of experiential learning through the Rappaport Greater Boston Applied Field Lab began much like the others. We screened projects from multiple communities during the fall semester, and then selected student applicants from across the Harvard graduate schools. We launched the course with in-person visits from local city leaders and led a day-long field trip for the students to visit the project sites.

No one could have imagined the global challenges that would confront this year's class in March. Following Harvard's move to virtual learning, we readjusted the pedagogy so that students, city partners and the teaching team could push forward with the projects. We adapted the projects to help the community respond to the crisis. We expanded the Public Finance Summer Fellows program to meet the unprecedented demand from both students and client partners.

This report describes the semester as it unfolded, including details on how we adapted learning to an online format.

Key findings:

1. Students adapted with energy and passion. They were more committed than ever to delivering high quality work and to learning the new material, despite the challenging and often frustrating circumstances.
2. The "client partners" – Hingham, Massport, MBTA and Gloucester – remained highly engaged. They stayed in contact with the students through very frequent Zoom meetings. In some cases, the nature of the project shifted to address the crisis.
3. The teaching team put in a great deal of extra time and thinking to adapt the pedagogy and to pivot the project design to the new environment.
4. There was high demand for summer fellowships – both from client partners (who desired continuity with the students they already knew) and among students (who were motivated to work in local government, and to continue making a difference in these projects). Consequently, we placed 14 students as Rappaport Public Finance Summer Fellows instead of the usual four or five.
5. The course rating for the Field Lab (MLD-412) continued to be one of the highest at the Kennedy School, with a rating of 4.9/5.0.
6. Students felt that the course was one of the best at transitioning to the online format. As one student commented: *"This project was a great hands-on learning experience, and it felt like one-of-a-kind to be working on projects with city governments at this time. I really appreciated the effort the teaching team put into making this class feel like a community, even as we transitioned to be online. The team was the best at handling the transition relative to my other classes."*

Project Selection and Overview

During fall 2019, we reviewed project requests from over two dozen jurisdictions. We scoped about eight projects with prospective partners and ultimately selected four projects, based on the following criteria:

- Strong engagement from the Mayor or senior official;
- Challenging projects requiring analytical rigor and directly related to financial and operational issues;
- Defined goals that could be completed within an academic semester;
- Engaged project-level partner to work with the students directly; and
- Client partner wishes to host a summer fellow.

The projects selected were:

City/Public Agency	Topic	Client Partner
Gloucester, MA	Estimate financial viability of plans for building a Gloucester Performing Arts Center	State Representative Ann-Margaret Ferrante* State Senator Bruce Tarr
Hingham, MA	Analyze options for Hingham to fund federally mandated stormwater runoff infrastructure	Assistant Town Administrator Michelle Monsegur*
Massachusetts Bay Transportation Authority (MBTA)	Help MBTA rethink its energy supply and demand options for the South Boston Power Station	MBTA General Manager Steve Poftak
Massachusetts Port Authority (Massport)	Assess threats/opportunities for the Boston seafood cluster in the global supply chain	Massport Deputy Director Gordon Carr

*Indicates HKS course alumni

In each of the projects, we benefited from the presence of client partners who were familiar with the program and the Rappaport Institute. In both Gloucester and Hingham, the lead project officials were former students from Professor Bilmes' classes. At the MBTA, students were not only able to work with Steve Poftak, a former Rappaport Institute Director, but also with several recent graduates of the Field Lab program. Our day-to-day partner at Massport was Andres de Riva, a recent HKS/GSD graduate of the course.

Student and Course Team Selection

The MLD-412 Field Lab attracts students from across all of Harvard's graduate schools, as well as from MIT and Tufts. Beginning in 2019, the Field Lab was co-listed at the Harvard Graduate School of Design, fulfilling the GSD's field learning requirement.



Professor Bilmes introducing the projects to the 2020 Field Lab students in the classroom

Students who apply to the class must have completed one or more of the prerequisite courses, which include HKS introductory budgeting, finance, operations or the introductory education finance class at the Harvard Graduate School of Education. This year, the 28 students selected represented Harvard Graduate School of Design, Harvard Graduate School of Education, and the Harvard T.H. Chan School of Public Health in addition to the Kennedy School. Several of the students were pursuing dual degrees in business administration (at Harvard, Wharton or Stanford) and/or in urban planning.



Phyllis and Jerry Rappaport talking with MLD-412 Teaching Fellow Stevie Olson and student Reine Rambert

The teaching team included Professor Linda Bilmes, Adjunct Professor Brian Iammartino and a talented team of teaching assistants. The Teaching Fellow, Stevie Olson, had been a student in MLD-412 the previous year, where he worked on a project for Congressman Seth Moulton regarding the cost of the car economy. That project led to a working paper that was widely publicized. <https://www.hks.harvard.edu/publications/64-billion-massachusetts-vehicle-economy>.

Course assistants included alumnus Ray Zhang (who had previously worked on an MBTA project), David Brown, a second-year Harvard Law School student and CPA, Program Manager Susan Krusell and Faculty Assistant Yahya Chaudhry.

Field Trip



Students Rodrigo Dorador, Hillary Anderson, Tailor Spencer Dortona, Ashley Carew, Antonio Castaneda

Early on February 7, students boarded a Yankee bus for the field trip to visit project partners. On the ride, students exchanged excited stories about the annual trip – twelve hours of travel and meetings to explore Field Lab projects up close.



Michelle Monsegur, HKS '14 and Field Lab alumna, Hingham Assistant Town Administrator, Tom Mayo, Town Administrator, with Professor Bilmes and Field Lab students

The first stop was **Hingham** town hall. Former Field Lab student Michelle Monsegur HKS'14, who is now Assistant Town Administrator for Hingham, along with Town Administrator Tom Mayo, and Randy Sylvester, DPW head, led the class on a tour of the community and explained the challenges of meeting new federal mandates for stormwater. Hingham faces rising sea levels, and is developing resiliency plans to prevent flooding storm surges. The class toured Hingham Harbor and was able to see the effects of stormwater runoff and the impact on the marina.

The Field Lab at Hingham Harbor



The class then traveled to **Massport's** Seafood District, where Massport Chief Development Officer Andrew Hargens, Deputy Director of Real Estate Strategy Gordon Carr, and Development Manager and MLD-412 alumnus Andres de Riva led a tour of Boston's Historic Fish Pier showing students how the fishing industry in Boston is innovating with new ideas and state-of-the-art equipment to meet the standards of the global fishing industry today.

Boston is home to one of four national hubs for fish processing; seafood is one of four business sectors within Massport's Maritime operations. This cluster employs several thousand blue-collar workers in the city. Tasked with protecting, preserving and assisting New England's seafood industry to flourish in the 21st century, these Massport officials described a host of complex issues and gave us a behind-the-scenes look into Boston's seafood cluster. Students had the opportunity to speak directly with fishermen, walk the floors of fish cutting/process firms, and see new high-tech investments at work in the development of new products made from fish remnants, such as fish-based dog food treats, fertilizers, and new biotech products.



Students Jacob Greenspon, CA Ray Zhang, Andrea Ringer, LeAnna Cates, Andrew Heimowitz, Rodrigo Dorador



Touring the historic working Boston Fish Pier



Above, Hillary Anderson, Jacob Greenspon, Andrea Ringer, TF Stevie Olson, LeAnna Cates





**Greater Boston Applied Field Lab with
MBTA Director of Environmental Affairs and Emergency Training Center Team
2020 Project Field Trip – February 7, 2020**

The next stop was the **South Boston Power Station**. MBTA Director of Environmental Affairs Andrew Brennan led the students to see the area at and near the South Boston Power Station.

We then visited the MBTA “Emergency Training Center.” This state-of-the-art training facility is used to help MBTA employees and first responders simulate emergency situations. Since the ETC opened in the wake of the 2013 Boston Marathon bombing, the MBTA and the US Department of Homeland Security have used the center to offer realistic training exercises to agencies from around the world. Students experienced a simulated surprise explosion that demonstrated the importance and significance of the MBTA’s work.



**At right, Randy Clark, Director of MBTA ETC,
and Andrew Brennan lead the simulation**

We then boarded the bus to travel to **Gloucester**. Students were taken to the Gloucester House Restaurant, which sits adjacent to the site of the proposed civic/arts center and at the edge of Gloucester Harbor. State Representative Ann-Margaret Ferrante, State Senator Bruce Tarr, and Gloucester Mayor Sefatia Romeo Theken and several local business owners briefed the students on their vision for the center.



State Senator Bruce Tarr discussed the economic benefits a civic/arts center would provide to the City of Gloucester (above, left); Mayor Sefatia Romeo Theken with students Peter Nalli, Tailor Spencer Dortona, Sam Brobeck, Victoria Orozco (above, right)

State Representative Ann-Margaret Ferrante explains the proposed Gloucester cultural center



These sessions are supplemented by guest speakers who lecture on urban planning and economic development. Former Taubman Center and Rappaport Institute Center Director and Harvard Professor Edward Glaeser, who speaks to the MLD-412 class every year, presented his recent analysis of housing trends on March 9th, in person.

March 2020 – Rapid Move to Online Learning

When the student teams returned from site visits in early March, the first COVID-19 cases were just beginning to emerge in the US. Within one week, the Field Lab had to quickly shift everything – including teaching, skills training, interactions with client partners, field research and analysis – online.

Each skills session was modified for the Zoom platform. Class sessions used all the features of Zoom, including polling, and breakout rooms to emulate the classroom experience.

Performance Management Seminar

One of the skills taught regularly is “Performance Stat,” a transformative management approach first used by Bill Bratton in New York and then adapted in Baltimore as “Citistat”. In most years, Professor Bilmes invites MLD-412 alumnus Bryan Richardson, who founded Baltimore’s “School Stat” program and now serves as a senior vice president for education at the Gates Foundation, to help run a tabletop exercise to simulate several rounds of performance management with the class.

This year, we adapted the exercises for Zoom, using breakout rooms and involving Richardson remotely. Using Zoom in class for the first time, students were able to receive an abbreviated version of the original seminar.

Bryan Richardson of the Gates Foundation leading “Performance Stat” in a break-out room with student team Tom Ellington, Peggy Moriarty, Michael Bruckner, and Peter Nalli



Spatial Analysis GIS Training

We successfully adapted the teaching of geospatial techniques to the new format. In a typical year, we would provide a series of exercises in which all students mastered a ladder of skills. This would be taught during a 4-hour workshop, with the assistance of the teaching team and the Harvard GIS lab, and with the benefit of large monitors in the computer lab.



This year, we completely redesigned the Arc-GIS teaching module so that each skill was taught specifically for one of the actual Field Lab projects. For example, we redesigned one of the GIS skill-set exercises to be based in Gloucester, enabling students to map the number of potential visitors to a Gloucester Arts Center within a 15-minute, 30-minute and one-hour radius. We then adapted each of the other teams to use that specific skill to their needs. We were able to transform the GIS training so that three distinct sets of skills were adapted to the individual teams for use in various situations.

Financial Modeling Seminars

Professor Iammartino teaches financial skills including designing financial spreadsheets by using case study exercises from some of our best previous projects. This year, he replicated the teaching process using Zoom video meetings, screen sharing, and Google spreadsheet documents. Thanks to the “live” Google spreadsheet documents, students were able to see his Excel comments in real-time. We followed a similar adaptation in teaching advanced Excel skills and data visualization.

2020 Student Teams – Final Presentations

In this new and different world, the students completed their projects and delivered final presentations by Zoom, and provided financial spreadsheets, summary transmittal reports and other documentation. Despite the difficulty of the medium, the work was well-received and the students reported a strong feeling of accomplishment. One silver lining was that Jerry and Phyllis Rappaport, Kathryn Carlson, Polly O’Brien and Rafael Carbonell were able to attend these presentations, which the students appreciated greatly.

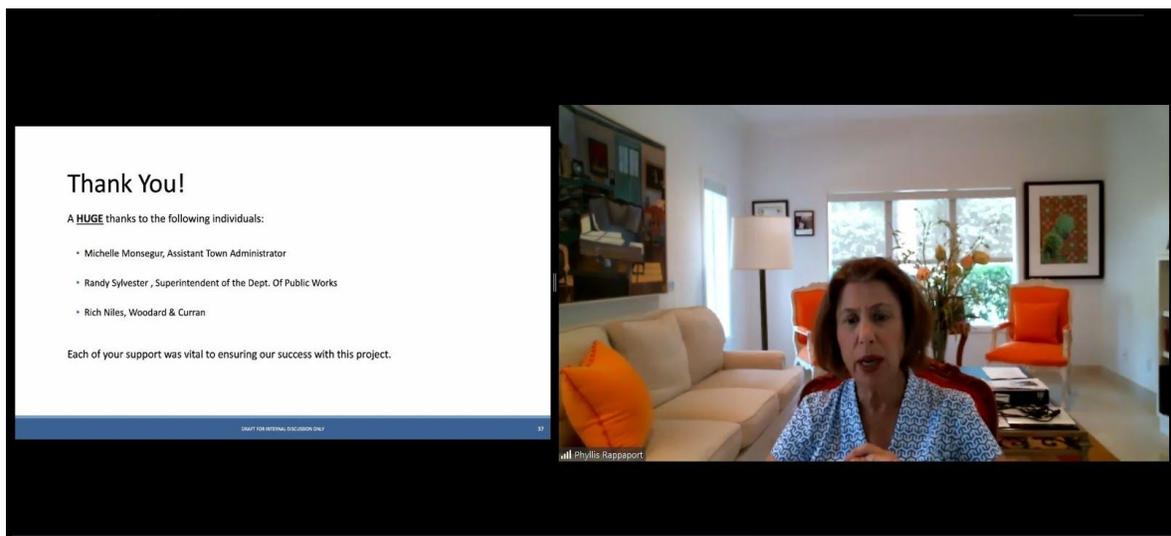
Hingham – Budgeting for Stormwater Management



Student Team: Hillary Anderson (HKS), Sam Brobeck (HGSE), Spencer Gurley-Green (HKS), and Anne Hoyt (HGSE)

The Town of Hingham sought the help of their HKS student team to develop a strategic plan to secure funding to protect local waterways while being mindful of economic considerations, including the financial impact on taxpayers.

Key Findings: Students conducted an analysis of financing opportunities, including grants, budget increases, and possible stormwater fees, by considering benchmarked communities, using mapping techniques to analyze the imperviable surfaces in Hingham, and weighing the effect of the COVID-19 crisis on municipal revenues. The team found that most communities use a stormwater fee to fund ongoing federal requirements



Massport – Strengthening Boston’s Seafood Cluster



Student Team: Will Dorsey Eden (HKS), Natasha Lawrence (HKS), Victoria Orozco (HKS), and Federico Sucre (HKS)

Findings: Based on research and interviews, the team identified a comprehensive list of needs and then categorized them into seven action areas that could be leveraged to strengthen the cluster: (1) access to finance, (2) infrastructure and logistics, (3) marketing seafood, (4) quality, (5) regulation, (6) technology and innovation, and (7) workforce development. The team’s research revealed a consistent desire for increased strategic collaboration among the cluster’s stakeholders as a means to strengthen the Boston Seafood Cluster, remove key barriers to the cluster’s development and increase its resilience. Additionally, the student team helped Massport identify COVID-19 related support for small businesses as well as analyzing how the crisis may impact the industry for the long term.

Main Finding and Sub-Findings

Strategic collaboration is the key to strengthening the Boston Seafood Cluster

- A** Strategic communication across the cluster can optimize infrastructure and logistics planning
- B** There are foundations for a MA seafood marketing partnership that could create and diversify market opportunities for seafood
- C** Existing innovators need a central coordinator to harness the cluster's full potential

Jerome Rappaport

MBTA – South Boston Power Station



Student Team: Jacob Greenspon (HKS), Andrew Heimowitz (HKS), Jessica Kaushal (HKS), and Gal Kramer (HGSD)

The MBTA sought the help of a student team to provide a cost-benefit analysis of strategic options for the South Boston Power Complex.

Findings: The students analyzed the current conditions of the Plant, including its capital needs, operating costs, and revenues. Under the team’s assumptions, all potential capital upgrades had extremely long payback periods, which underscored to the team that the Plant should be deployed primarily as a strategic asset for the MBTA to generate backup power, and secondarily to generate revenue. They recommended that future capital projects consider resiliency measures and the potential difficulty of obtaining new permits. The students also urged MBTA to consider using a public-private partnership to operate and/or upgrade the facility in the future.

Steve Poftak, MBTA General Manager, discussing student research on the South Boston Power Station



Gloucester – Financial Model for Cape Ann Cultural and Civic Center

HKS graduate Representative Ann-Margaret Ferrante, who is an alumna of Prof. Bilmes budgeting course, represents the town of Gloucester. She reached out to seek the help of an HKS student team to develop a financial model for a multi-use performance and event facility in that city. The Gloucester Cultural and Civic Center (GCCC), shared its vision for a ~600 seat main stage, a smaller stage, and function/conference space for individuals, business and nonprofit organizations.



Student Team: LeAnna Cates (HSPH), Natalia Chavez (HKS), Ella Han (HKS), and Alex Khoury (HKS)

The challenge of this project was to understand the expected demand for the proposed performance and event facility and design a financial model that identified key assumptions and projected revenues and expenses.

Findings: After extensive research, interviews, and financial and geospatial modeling, the team's analysis suggests the Gloucester Forum is viable. Even under conservative assumptions, the students forecast that the Gloucester Forum would be able to break even within 5 years, in terms of operating budget. However the fundraising requirements to build the facility are considerable.

State Representative Ann-Margaret Ferrante engaging with students during their final presentation



Meet the 2020 Rappaport Public Finance Summer Fellows

A record number of 14 students were selected to continue research as Rappaport Public Finance Summer Fellows. Based on the many years of experience in the field lab, we know that the majority of these students take positions in state or local government, or in the Government Performance Lab (led by Professor Jeff Liebman) after graduation.



Hillary Anderson

Town of Hingham
Michelle Monsegur,
Asst. Town Administrator

Topic: Capital budgeting;
financial modeling for
COVID-19 challenges



Sam Brobeck

Town of Hingham
Michelle Monsegur,
Asst. Town Administrator

Topic: Capital budgeting;
financial modeling for
COVID-19 challenges



Tony Castaneda

MBTA – Green Line
Transformation
Angel Pena, Chief

Topic: Operating cost
modeling



Natalia Chavez

City of Gloucester
State Rep. Ann-Margaret
Ferrante

Topic: Financial model for
arts center



Will Dorsey Eden

Massport
Gordon Carr, Deputy
Director

Topic: Seafood cluster
research



**Spencer
Gurley-Green**

Town of Somerville
Angela Allen,
Purchasing

Topic: Digital signatures



Andrew Heimowitz

MBTA
Samantha Silverberg,
Deputy CAO

Topic: Performance
management



Anne Hoyt

Town of Hingham
Michelle Monsegur,
Assistant Town
Administrator

Topic: Stormwater



Alex Khoury
City of Salem
Rick Jackious
Chief of Staff to Rep.
Moulton
Topic: Small business aid



Gal Kramer
MBTA – Green Line
Transformation
Angel Pena, Chief
Topic: Operating cost
modeling



Natasha Lawrence
MBTA
Samantha Silverberg,
Deputy CAO
Topic: Performance
management



Victoria Orozco
Massport
Gordon Carr, Deputy
Director
Topic: Seafood cluster
research



Safeer Shersad
MBTA
Kat Benesh, Chief
Operations Policy, Strategy
& Oversight
Topic: Process redesign



Federico Sucre
Massport
Gordon Carr, Deputy
Director
Topic: Seafood cluster
research

COVID-19 Response



In April, Governor Baker tapped the nonprofit Partners in Health (PIH) to coordinate the state's contact tracing program. **Anne Hoyt (HGSE '20) and Jessica Kaushal (HKS '21)** are part of a student research team writing a policy brief on best-practices for a supported quarantine program. The main focus has been to design a flexible budget model to quantify the cost of a quarantine program for the state.



Alex Khoury (HKS '20) and Rodrigo Doridor (HKS '20) worked closely with a team convened by the City of Salem, MA and the staff of Rep Seth Moulton (D-MA 6th) to develop a support plan for small businesses facing losses due to COVID-19. They interviewed more than 90 small business owners in Salem to help understand the challenges and specific needs of this community. Based on this information, the students worked with city officials to craft a three-stage response plan and to explore funding options available to support the package of interventions.



Rappaport Summer Fellows Welcome Event — May 20, 2020

Phyllis and Jerry Rappaport hosted the 2020 Rappaport Summer Fellows via Zoom



Student Views on the Greater Boston Applied Field Lab Experience



“While tumultuous, this past semester was a great opportunity for me to understand deeply a number of places and challenges I never would have encountered otherwise. Our day-long field trip to potential client sites truly shines as a highlight of my time in graduate school.” **Peter Nalli**

“This class is the experience I came back to school for (minus the complication of the pandemic, of course). It's the most work I've done, but also the most rewarding. ... I am truly grateful.” **Tom Ellington**

“No course at Kennedy I've taken has been as thoughtfully composed, incorporated as much feedback, or offered such a valuable hands-on learning experience. I'm proud to be both a Kennedy and a Bilmes grad!” **Will Eden**

“This class was hands down one of my favorite and most valuable classes at HKS. I look forward to applying the learnings from this class to our actual jobs post-HKS. I appreciated all the guest lectures from the tutorials to the Q&A with different mayors. ...” **Ashley Carew**

“This class is the perfect way to put the skills we've gained at HKS to practice in the real world. Further, thank you for so generously and aggressively ensuring that all who wanted an internship this summer would have one.” **Hillary Anderson**

“When I was applying to HKS and saw the course catalogue, I thought MLD-412 was a course I needed to take if I got into HKS. (I even think I mentioned this in my HKS application.) The course has only exceeded my expectations and I am so grateful to have been able to take it.” **Andrew Heimowitz**

“More than any other experience at the Kennedy School/GSE, your courses have both held me to and guided me to a level of academic excellence that I had not thought myself capable of. I will be forever grateful for the way you went above and beyond for me personally and for our cohort of students. I will also laugh whenever I think of Ricky, of 'Auntie Linda,' and the many ways you brought levity and community to a dark and isolated time.” **Anne Hoyt**