Online Appendix to “My Professor Cares: Experimental Evidence on the Role of Faculty Engagement”

SCOTT E. CARRELL. MICHAL KURLAENDER

Appendix A—Additional Tables

Table A1. Pilot Randomization Checks

Variable	1	2
Male	-0.155	-0.091
	(0.173)	(0.173)
First Generation College Goer	0.058	0.05
	(0.166)	(0.169)
HS GPA	0.153	0.081
	(0.210)	(0.214)
Under-represented Minority	-0.227	-0.296
	(0.196)	(0.196)
CA Resident	0.2	0.139
	(0.244)	(0.243)
Entering Cohort==2012	-0.091	-0.162
	(0.252)	(0.249)
Entering Cohort==2012	0.083	-0.042
	(0.239)	(0.240)
Observations	53	53
P-value: Joint Significance of all individual cova	0.8905	0.8449
Includes TA Fixed Effects	No	Yes

Notes: Each specification represents results for a regression where the dependent variable is an indicator for treatment status.

Table A2. Scale-up Professor Characteristics

Variable	Summary Stats (mean/std)	Selection Regressions 1	2	3	4
Rate My Professor Overall Rating	3.77	-0.16			-0.06
	(0.61)	(0.12)			(0.12)
Rate My Professor Difficulty Rating	2.84	-0.06			-0.01
	(0.73)	(0.10)			(0.11)
Full Professor	0.43		0.25		0.14
	0.50		(0.13)		(0.14)
Associate Professor	0.13		0.05		0.02
	(0.34)		(0.19)		(0.19)
Assistant Professor	0.07		-0.08		0.05
	(0.26)		(0.24)		(0.26)
Female	0.33			0.11	0.15
	(0.47)			(0.12)	(0.13)
Black	0.03			0.63	0.48
	(0.10)			(0.34)	(0.37)
Asian	0.12			0.56	0.48
	(0.32)			(0.17)	(0.20)
Latino	0.06			0.24	0.22
	(0.24)			(0.24)	(0.26)
Observations	69	68	69	69	68
P-value: Joint Significance covariates	NA	0.400	0.199	0.005	0.070

Each specification represents results for a regression where the dependent variable is an indicator for participating in the experiment.

Table A3. Courses in Scale-up

Art 3B
Astronomy 4
Biology 22
Chemistry 1A (2 courses)
Criminal Justice 5
Economics 1B
Engineering 45 (2 courses)
English 50B
Ethnic Studies 11
Family and Consumer Sciences 10
Geology 7
History 5
History 7
History 17B
History 50
History 51
Math 24 (2 courses)
Music 18
Philosophy 4 (2 courses)
Psychology 2 (2 courses)

Table A4. Scale-up Randomization Checks

Specification	1	2	3	4
	All Students	URM Students	Underclass URM Students	Upperclass URM Students
Panel A. Individual Covariates				
Female	0.060	0.052	0.065	0.011
	(0.019)	*(0.030)*	*(0.038)*	*(0.053)*
	[.002]	[.094]	[.064]	[.826]
Latino	0.025	0.042	0.060	0.006
	(0.019)	*(0.038)*	*(0.046)*	*(0.078)*
	[.226]	[.256]	[.146]	[.942]
Black	-0.033			
	(0.037)			
	[.364]			
Asian	0.014			
	(0.025)			
	[.544]			
High School GPA	0.019	0.021	0.055	-0.070
	(0.022)	*(0.039)*	*(0.044)*	*(0.106)*
	[.414]	[.550]	[.236]	[.432]
Prior College GPA	-0.018	0.004	0.017	-0.049
	(0.015)	*(0.021)*	*(0.023)*	*(0.040)*
	[.274]	[.882]	[.516]	[.422]
Total College Units	-0.056	-0.018	-0.133	0.070
	(0.117)	*(0.114)*	*(0.144)*	*(0.224)*
	[.594]	[.948]	[.582]	[.816]
Freshman	-0.063	-0.023		
	(0.102)	*(0.136)*		
	[.52]	[.902]		
Sophomore	-0.051	-0.043	-0.003	
	(0.072)	*(0.099)*	*(0.055)*	
	[.484]	[.744]	[.970]	
Junior	-0.076	-0.053		-0.01
	(0.048)	(0.065)		(0.092)
	[.142]	[.488]		[.926]
Observations	2,914	1,257	935	322
Panel B. Predicted Grade				
Treatment	-0.013	0.021	0.061	-0.058
	(0.022)	(0.036)	(0.046)	(0.046)
	[.610]	[.510]	[.100]	[.260]

Notes: Each column by panel reports results from a separate regression where a treatment indicator is regressed on the variables listed in the colum. For Panel B, predicted grade was estimated using a linear specification using all covariates in Panel A. All specifications include classroom fixed effects. Standard errors in parentheses are clustered at the classroom level. Square brackets contain p-values from randomization-based inference using a counterfactual of randomly assigning treatment status within classrooms 500 times. Significance levels are starred using randomization-based inference p-values.

Table A5. Selection into Survey Response

Specification	1	2	3	4
	All Students	URM Students	Underclass URM Students	Upperclass URM Students
Treatment	0.025	0.021	0.040	-0.041
	(0.020)	*(0.026)*	*(0.027)*	*(0.042)*
	[.118]	[.374]	[.126]	[.414]
Female	0.089	0.112	0.115	0.123
	(0.014)	*(0.026)*	*(0.026)*	*(0.065)*
	[.000]	[.000]	[.000]	[.018]
Latino	0.009	0.034	0.054	-0.021
	(0.017)	*(0.027)*	*(0.029)*	*(0.049)*
	[.622]	[.244]	[.096]	[.736]
Black	-0.021			
	(0.025)			
	[.432]			
Asian	0.030			
	(0.020)			
	[.152]			
High School GPA	0.029	0.067	0.042	0.126
	(0.020)	*(0.040)*	*(0.047)*	*(0.092)*
	[.184]	[.034]	[.268]	[.100]
Prior College GPA	0.059	0.056	0.062	0.022
	(0.011)	*(0.017)*	*(0.023)*	*(0.042)*
	[.000]	[.000]	[.004]	[.666]
Total College Units	0.030	0.140	0.135	0.087
	(0.090)	*(0.128)*	*(0.171)*	*(0.201)*
	[.74]	[.296]	[.480]	[.678]
Freshman	0.085	0.206		
	(0.094)	*(0.113)*		
	[.326]	[.128]		
Sophomore	0.093	0.149	-0.058	
	(0.072)	*(0.081)*	*(0.048)*	
	[.160]	[.148]	[.308]	
Junior	0.030	0.081		0.044
	(0.041)	*(0.065)*		*(0.080)*
	[.476]	[.268]		[.622]
Observations	2,914	1,257	935	322

Notes: Each column reports results from a separate regression where a survey response indicator is regressed on the variables listed in the column. All specifications include course by phase fixed effects. Standard errors in parentheses are clustered at the course by phase level. Square brackets contain p-values from randomization-based inference using a counterfactual of randomly assigning treatment status within classrooms 500 times. Significance levels are starred using randomization-based inference p-values.

Table A6. Scale-up Results: Short-run Outcomes (without controls)

Panel A: Grade outcomes

Specification	1	2	3	4	5	6	7	
Outcome	Grade	% Points Earned after First Feedback	Passed (>D)	A or B	"Gave Up"	Dropped Course	Grades in Other Courses	N (Grades) N (*Dropped*)
All Students	0.028	0.014	0.004	0.012	-0.047	-0.010	0.047	
	(0.049)	*(0.011)*	*(0.016)*	*(0.022)*	*(0.011)*	*(0.010)*	*(0.038)*	2,771
	[.466]	[.304]	[.750]	[.468]	[.002]	[.190]	[.180]	*2,918*
All URM Students	0.126	0.031	0.017	0.052	-0.052	-0.0169577	0.093	
	(0.066)	*(0.018)*	*(0.027)*	*(0.027)*	*(0.021)*	*(0.013)*	*(0.052)*	1,197
	[.062]	[.158]	[.470]	[.054]	[.058]	[.094]	[.096]	*1,257*
Underclass URM Students	0.197	0.044	0.047	0.059	-0.060	-0.030	0.131	
	(0.069)	*(0.021)*	*(0.025)*	*(0.033)*	*(0.027)*	*(0.013)*	*(0.060)*	891
	[.008]	[.074]	[.100]	[.066]	[.054]	[.008]	[.040]	*935*
Upperclass URM Students	-0.047	-0.026	-0.049	0.039	-0.014	0.011	-0.001	
	(0.131)	*(0.017)*	*(0.057)*	*(0.058)*	*(0.016)*	*(0.026)*	*(0.101)*	306
	[.724]	[.590]	[.296]	[.502]	[1.00]	[.790\]	[.996]	*322*

Panel B: Survey outcomes

Specification	8	9	10	11	12	
Outcome	How **approachable** was the instructor in class?	How **available** was the instructor outside of class?	How useful was the instructor's **feedback** in helping you learn?	How much do you believe the instructor **cared** about your success in the class?	How well did the instructor keep you **informed** about your progress in the class?	N (Survey)
All Students	0.189	0.147	0.095	0.299	0.319	
	(0.074)	*(0.052)*	*(0.076)*	*(0.102)*	*(0.107)*	
	[.012]	[.026]	[.246]	[.000]	[.000]	733
All URM Students	0.167	0.167	0.089	0.403	0.373	
	(0.137)	*(0.119)*	*(0.147)*	*(0.177)*	*(0.207)*	
	[.178]	[.104]	[.484]	[.002]	[.004]	294
Underclass URM Students	0.184	0.133	0.065	0.425	0.372	
	(0.176)	*(0.160)*	*(0.195)*	*(0.219)*	*(0.262)*	
	[.172]	[.232]	[.700]	[.004]	[.026]	220
Upperclass URM Students	0.241	0.415	0.402	0.286	0.463	
	(0.337)	*(0.273)*	*(0.274)*	*(0.325)*	*(0.308)*	
	[.368]	[.070]	[.142]	[.360]	[.080]	74

Notes: Each column reports results from a separate regression. All specifications include classroom fixed effects. Standard errors in parentheses are clustered at the course by phase level. Square brackets contain p-values from randomization-based inference using a counterfactual of randomly assigning treatment status within classrooms 500 times.

Table A7. Scale-up Results: Long-run Outcomes (without controls)

Specification	1	2	3	4	5	6
Outcome	Persist 1-Semester Later (or Graduate)	Persist 3-Semesters Later (or Graduate)	Persist 5-Semesters Later (or Graduate)	Persist 7-Semesters Later (or Graduate)	Total Units Earned as of Fall 2020	Graduate by Fall 2020
All Students	0.026	0.020	0.012	0.011	2.428	0.008
	(0.007)	*(0.011)*	*(0.014)*	*(0.019)*	*(1.676)*	*(0.018)*
	[.004]	[.170]	[.480]	[.488]	[.076]	[.676]
Observations	2,918	2,918	2,918	2,918	2,918	2,918
All URM Students	0.054	0.065	0.052	0.058	5.947	0.054
	(0.013)	*(0.023)*	*(0.023)*	*(0.026)*	*(2.336)*	*(0.026)*
	[.000]	[.000]	[.024]	[.022]	[.010]	[.040]
Observations	1,257	1,257	1,257	1,257	1,257	1,257
Underclass URM Students	0.082	0.082	0.076	0.075	8.063	0.074
	(0.013)	*(0.026)*	*(0.029)*	*(0.031)*	*(2.697)*	*(0.031)*
	[.000]	[.002]	[.008]	[.012]	[.004]	[.024]
Observations	935	935	935	935	935	935
Upperclass URM Students	-0.016	0.020	-0.005	0.021	1.954	0.018
	(0.025)	*(0.035)*	*(0.040)*	*(0.043)*	*(2.377)*	*(0.046)*
	[.586]	[.668]	[1.00]	[.658]	[.466]	[.770]
Observations	322	322	322	322	322	322

Notes: Each column reports results from a separate regression. All specifications include classroom fixed effects. Standard errors in parentheses are clustered at the course by phase level. Square brackets contain p-values from randomization-based inference using a counterfactual of randomly assigning treatment status within classrooms 500 times.

Table A8. Scale-up Results Short-Run Outcomes: Including Matched Pair Sample

Panel A: Grade outcomes

Specification	1	2	3	4	5	6	7	
Outcome	Grade	% Points Earned after First Feedback	Passed (>D)	A or B	"Gave Up"	Dropped Course	Grades in Other Courses	N (Grades) N (*Dropped*)
All Students	0.050	0.015	0.010	0.020	-0.044	-0.010	0.058	
	(0.047)	*(0.011)*	*(0.016)*	*(0.020)*	*(0.011)*	*(0.009)*	*(0.030)*	3,730
	[.172]	[.262]	[.444]	[.19]	[.008]	[.158]	[.066]	*3,922*
All URM Students	0.116	0.032	0.016	0.051	-0.047	-0.0164502	0.082	
	(0.060)	*(0.016)*	*(0.026)*	*(0.026)*	*(0.021)*	*(0.013)*	*(0.054)*	1,620
	[.048]	[.120]	[.506]	[.048]	[.058]	[.094]	[.088]	*1,702*
Underclass URM Students	0.151	0.034	0.035	0.046	-0.049	-0.029	0.088	
	(0.066)	*(0.017)*	*(0.023)*	*(0.032)*	*(0.025)*	*(0.012)*	*(0.071)*	1,189
	[.028]	[.134]	[.154]	[.114]	[.106]	[.012]	[.098]	*1,244*
Upperclass URM Students	-0.001	-0.011	-0.038	0.056	-0.023	0.010	0.053	
	(0.120)	*(0.030)*	*(0.057)*	*(0.054)*	*(0.032)*	*(0.027)*	*(0.097)*	431
	[.998]	[.812]	[.432]	[.308]	[.672]	[.682]	[.584]	*458*

Panel B: Survey outcomes

Specification	8	9	10	11	12	
Outcome	How **approachable** was the instructor in class?	How **available** was the instructor outside of class?	How useful was the instructor's **feedback** in helping you learn?	How much do you believe the instructor **cared** about your success in the class?	How well did the instructor keep you **informed** about your progress in the class?	N (Survey)
All Students	0.191	0.145	0.079	0.291	0.311	
	(0.075)	*(0.048)*	*(0.076)*	*(0.105)*	*(0.101)*	
	[.022]	[.034]	[.306]	[.000]	[.000]	1,013
All URM Students	0.165	0.151	0.079	0.393	0.366	
	(0.144)	*(0.127)*	*(0.148)*	*(0.190)*	*(0.210)*	
	[.188]	[.162]	[.526]	[.006]	[.016]	403
Underclass URM Students	0.196	0.145	0.072	0.443	0.382	
	(0.184)	*(0.158)*	*(0.202)*	*(0.236)*	*(0.270)*	
	[.168]	[.254]	[.592]	[.012]	[.038]	300
Upperclass URM Students	0.255	0.306	0.301	0.220	0.319	
	(0.340)	*(0.307)*	*(0.231)*	*(0.365)*	*(0.329)*	
	[.390]	[.236]	[.338]	[.540]	[.296]	104

Notes: Each column reports results from a separate regression. All specifications include classroom fixed effects and individual controls race, gender, high school and pre-treatment colege GPA, pretreatment units earned, and year of schooling (e.g., freshman, sophmore, or junior). Standard errors in parentheses are clustered at the course by phase level. Square brackets contain p-values from randomization-based inference using a counterfactual of randomly assigning treatment status within classrooms 500 times.

Table A8. Scale-up Results Long-Run Outcomes: Including Matched Pair Sample

Specification	1	2	3	4	5	6
Outcome	Persist 1-Semester Later (or Graduate)	Persist 3-Semesters Later (or Graduate)	Persist 5-Semesters Later (or Graduate)	Persist 7-Semesters Later (or Graduate)	Total Units Earned as of Fall 2020	Graduate by Fall 2020
All Students	0.027	0.021	0.012	0.011	2.744	0.009
	(0.007)	*(0.010)*	*(0.012)*	*(0.017)*	*(1.307)*	*(0.015)*
	[.002]	[.144]	[.458]	[.458]	[.038]	[.592]
Observations	3,922	3,922	3,922	3,922	3,922	3,922
All URM Students	0.051	0.057	0.044	0.048	5.220	0.042
	(0.013)	*(0.021)*	*(0.020)*	*(0.022)*	*(1.824)*	*(0.019)*
	[.000]	[.012]	[.056]	[.050]	[.006]	[.088]
Observations	1,702	1,702	1,702	1,702	1,702	1,702
Underclass URM Students	0.075	0.063	0.056	0.053	5.889	0.046
	(0.014)	*(0.025)*	*(0.025)*	*(0.028)*	*(2.348)*	*(0.026)*
	[.000]	[.016]	[.022]	[.056]	[.008]	[.086]
Observations	1,244	1,244	1,244	1,244	1,244	1,244
Upperclass URM Students	-0.014	0.023	-0.001	0.023	2.005	0.024
	(0.025)	*(0.032)*	*(0.039)*	*(0.041)*	*(2.281)*	*(0.046)*
	[.576]	[.462]	[.964]	[.574]	[.436]	[.586]
Observations	458	458	458	458	458	458

Notes: Each column reports results from a separate regression. All specifications include classroom fixed effects and individual controls race, gender, high school and pre-treatment colege GPA, pretreatment units earned, and year of schooling (e.g., freshman, sophmore, or junior). Standard errors in parentheses are clustered at the course by phase level. Square brackets contain p-values from randomization-based inference using a counterfactual of randomly assigning treatment status within classrooms 500 times.

Appendix B—Research Protocols

Recruitment Letter

Dear [Faculty member's first and last name]:

We are pleased to invite you to participate in an exciting opportunity on our campus. Recently, our Center for College & Career Readiness (CCR) was awarded a grant from the College Futures Foundation to explore innovations to improve college persistence and completion. As a result of this funding, the Center, in partnership with collaborators from University of California Davis, is continuing their work on an exciting faculty-based project. The project aims to carry out a "light-touch" intervention where faculty provide students with a few structured individualized emails about their progress in the course throughout the term.

The Co-PIs for the project are XXX, Director of the Center for College & Career Readiness and Professors Michal Kurlaender and Scott Carrell from University of California Davis. Based on initial review of classes, the Co-PIs have determined that your course **(Class Number – Course Title),** scheduled for fall semester, meets the criteria for inclusion in the project. Participation in the study is voluntary, but faculty who participate will be compensated for their time at a rate of $500 for the term.

Please let us know if you are interested in participating by *replying all* to this email or by contacting XXX directly using the contact information below. We will schedule a follow up phone call with you to share additional details and to answer questions you may have. [INSERT CONTACT INFO]

In keeping with the goals of our campus Strategic Plan, we are eager to find promising innovations to provide support to our students, and to increase our persistence and degree completion rates. We believe supporting all of our students through degree completion demands new innovations across our campus, and this effort to increase information about college success at the most micro level – the faculty member in the classroom – has great promise. We look forward to your participation.

Sincerely,

XXX	XXX
Provost & Vice President for Academic Affairs	Dean of Undergraduate Studies

FAQs with Participating Faculty

How are students chosen for additional email correspondence (the intervention) from faculty?
As required by our grant funding, the research team will randomly select students to receive the correspondence. The random selection methods differ based on the class size. For smaller classes with multiple sections taught by the same professor, we will randomly select one section where all students receive the correspondence. The second section will serve as the control group where no students will receive the correspondence. For large courses, we will randomly select a subset of students within the course to receive the correspondence. Randomization of students will enable us to determine whether the intervention has meaningful effects on student outcomes. Faculty will be notified which sections or students are to receive correspondence (treatment group) or not receive the additional correspondence (control group).

How many students will receive the intervention?
For small classes, all students will receive the correspondence. For large courses, no more than 70 students will be randomly selected to receive the emails.

How will you assess the outcome of the intervention?
Because the intervention is randomly assigned, we will compare outcomes of students who receive the correspondence to those who do not receive the additional emails.

How will student progress/performance be measured?
We will measure both short-run and medium-run outcomes. Short-run outcomes include completion of the course and course grade. The medium-run outcomes we plan to investigate include persistence into the subsequent term(s), and entry or persistence into specific college majors.

How many emails do you expect faculty to send during the semester as part of this program?
We request a minimum of three emails per student throughout the semester: 1) after the first assignment, 2) midway through the term, ideally after the first exam, and 3) end of the term.

Will the emails be structured by the researchers or faculty? Will faculty be able to tailor each message to each individual student?
Emails will be sent by the course instructor to students in the treatment group. Research assistance will be provided to work with faculty on email content that is tailored to specific course structure and instructor style. Below are examples:

<u>Example of Email 1 from professor to student after submission of first assignment/exam</u>
STUDENT PROFILE 1 (DID NOT TURN IN FIRST ASSIGNMENT)
Dear [Student Name],
I see you didn't turn in HW#1; although you only have to submit 5 out of the 7 homework assignments for full credit, the material in every homework is important for doing well in this class. I want to emphasize that doing well in this class requires coming to class regularly, completing the homework assignments, and seeking help when the concepts are unclear. To remind you, my office hours are: Monday and Wednesday 3:15 - 4:15 pm. Please feel free to come see your TA or me if you have any questions.
Sincerely, Professor X

STUDENT PROFILE 2 (TURNED IN FIRST ASSIGNMENT)
Dear [Student Name],
I noticed you did well [struggled with] on HW#1. Keep up the good work [Please make sure you] by coming to class regularly, completing future homework assignments, and seeking help when the concepts are unclear. To remind you, my office hours are: Monday and Wednesday 3:15 - 4:15 pm. Please feel free to come see your TA or me if you have any questions.
Sincerely, Professor X

Example of Email 2:
STUDENT PROFILE 1 (< C ACCEPTABLE PERFORMANCE)
Dear [Student Name],
We are approaching the mid point in the semester. I am concerned that based on your performance on the [Fill-in: Midterm, quiz, homework/?] you may be struggling in this course. However, don't be discouraged, there is still plenty of time to recover. To do well in the upcoming [Fill-in Final, next assignment, HW, ??] I encourage you to [fill-in: come to class regularly, review lecture notes, go to office hours].
Sincerely,
Professor X

STUDENT PROFILE 2 (B/ C PERFORMANCE)
Dear [Student Name],
We are approaching the mid point in the semester. You've done well so far on [Fill-in: Midterm, quiz, homework/?]. To strengthen your grade in the course and do well in the upcoming [Fill-in Final, next assignment, HW, ??], I want to encourage you to [fill-in: come to class regularly, review lecture notes, go to office hours].
Sincerely,
Professor X

STUDENT PROFILE 3 (B+ OR HIGHER PERFORMANCE)
Dear [Student Name],
We are approaching the mid point in the semester. You've done very well so far on [Fill-in: Midterm, quiz, homework/?]. To keep up your grade and do well in the upcoming [Fill-in Final, next assignment, HW, ??], I encourage you to [fill-in: come to class regularly, review lecture notes, go to office hours].
Sincerely,
Professor X

Email 3:
This will be structured as E-mail 2 with a focus on passing the course for students in the <C group.

What will I tell a student who didn't receive an email (but may be aware that their peer did) and inquires as to why?
If a student inquires about why they did not receive correspondence from you, please indicate that you are randomly emailing students regarding their performance in the course. Then proceed to advise the student as you usually would. Please make note of this if it occurs, as it will be tracked by the research team.

What else is required for participation?
We would like you to forward students' responses to the emails (if they occur). We would also appreciate access to your course grade book, any records of office hour attendance, and any other communication/interactions that may occur. We will also request your participation in a short survey at the end of the term.