Mobilizing the Youth Vote?
Early Voting on College Campuses

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Abstract

Might having additional opportunities to cast a ballot increase the probability that an individual turns out to vote? Scholars disagree over whether or not added electoral convenience bolsters voter turnout. Examining the effects of early in-person voting on public colleges and university campuses in Florida, we argue that turnout should increase when institutional barriers are lowered, as individuals—especially those who are young—have greater options to mobilize themselves, or be mobilized by others, to vote. Using individual-level election administration data and offering a series of models (differences-in-differences (DD), differences-in-differences-in-differences (DDD), and matching combined with differences-in-differences), we estimate the causal effect of the expansion of early in-person voting on eight college campuses on voter turnout. On-campus early voting increased youth turnout by 2.5 percentage points in Miami Dade and by 5.2 percentage points in Alachua county. We find consistent evidence that on-campus early voting increases turnout, especially among young voters.

Key words: turnout, youth voting, early voting, voter mobilization

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Might additional opportunities to cast a ballot increase the likelihood that an individual turns out to vote? Perhaps surprisingly, scholars disagree over whether or not added electoral convenience bolsters voter turnout. We argue, all else equal, that turnout should increase when institutional barriers are lowered, as individuals have greater options to mobilize themselves, or be mobilized by others, to vote. Complementing existing studies that rely on cross-sectional or survey data, our natural experiment to assess turnout effects of expanding convenience voting follows recent election administration studies that exploit as-if random variation in treatment assignment across geographic boundaries in a single state (Hood III and Buchanan 2017; Keele and Titiunik 2018; Walker, Herron and Smith 2018; Keele et al. 2019; Amos, Smith and Claire 2017). By limiting our research design to institutional variation within a single state, we are able to isolate the impact on turnout of a single administrative change—namely, allowing registered voters to cast a ballot in person on the campus of a public college or university prior to Election Day.

During the waning months prior to the 2018 General Election, voters in eight of Florida's 67 counties were given an unexpected "treatment" by their Supervisors of Election (SOE)—the opportunity to vote early in-person on the grounds of a public college or university campus. SOEs in the remaining counties opted not to offer early in-person (EIP) voting on public campuses. Drawing on individual-level administrative data, we offer a set of differences-in-differences (DD), differences-in-differences-in-differences (DDD), and differences-in-differences with exact matching models to estimate the causal effect of the expansion of on-campus EIP on voter turnout. As a preview of our findings, our estimates indicate that on-campus early voting increased turnout by 2 - 5 percentage points, especially among young voters.

Our on-campus EIP study is important for three reasons. First, it provides insight as to whether the adoption of a single election administration reform—permitting early in-person voting to occur on public college and university campuses—might have a positive effect on voter turnout. Second, our research design allows us to gain purchase as to whether the introduction of on-campus early voting of public colleges and universities might have a pronounced effect on the turnout of young voters, who are perennially low propensity voters, including in Florida. Third, our study provides additional evidence of how quasi-experimental methods using administrative data can help evaluate the causal impact of election reforms on expanding and diversifying the electorate.

1 Early In-Person Voting and Turnout

The opportunity to cast a ballot before Election Day has become well-entrenched across the American states (Gronke 2013). Although there has been some notable backsliding (Herron and Smith 2014; Weaver 2015; Herron and Smith 2015; Bentele and O'brien 2013), states controlled by both Democratic and Republican state legislatures have generally expanded the methods by which citizens may cast ballots prior to Election Day (Biggers and Hanmer 2015; Hood III and Bullock III 2011). In both the 2012 and 2016 presidential elections, roughly one-third of all voters nationwide cast ballots by means other than showing up at their designated local precincts on the first Tuesday after the first Monday of November.

Intuitively, it is easy to imagine that expanding opportunities for voters to cast ballots prior to Election Day should lead to higher voter turnout. More locations, more days, and expanded hours to vote, all else equal, should likely lead to an increase turn out. Indeed, this logic is one of the leading reasons why legislators in more than 30 states have expanded early in-person voting, beginning in California in 1978 and spreading across the country (Biggers and Hanmer 2015). But does added convenience of voting opportunities actually increase turnout? The scholarly literature is split on this issue.

Some scholars, drawing on aggregate, cross-sectional, and survey data report minor, negligible, conditional, or even dampening effects on turnout when states adopt early in-person voting (Stein and Garcia-Monet 1997; Stein and Vonnahme 2008; Giammo and Brox 2010; Larocca and Klemanski 2011; Springer 2012). With the expansion of convenience voting, the calculus of individual voters becomes more complex. Most notably, Burden et al. (2014) contend that early voting does not boost turnout, at least when not paired with other electoral reforms. Adopted alone, they find that early in-person voting might actually depress overall turnout. If one considers Election Day to be the denouement of civic engagement, as Burden et al. (2014) argue, the added convenience of voting early might lead to the demobilization of some potential voters. The anticipation of a signal, collective moment—turning out on Election Day—is supposedly dissipated as voters cast their ballots prior to Election Day.

Other scholars report that early voting can alter the composition of who votes. Some initial studies found that voters who cast their ballots prior to Election Day were more likely to be habitual voters (Southwell and Burchett 2000; Hanmer and Traugott 2004; Berinsky 2005), and were disproportionately more likely to be partisan, older, and white (Stein 1998; Berinsky, Burns and Traugott 2001; Neeley and Richardson Jr 2001; Kropf 2012). Others, though, find

that early in-person voting abets peripheral voters turning out, particular minority and young voters, who are prone to utilize the process on weekends (Herron and Smith 2012, 2014). That young voters might be drawn to convenience voting is not new; in one of the first studies on the expansion of early voting in Oregon, Fitzgerald (2003, 1) found that "allowing people to vote early in person at convenient locations also has a positive, although smaller and not statistically significant, effect on youth voting."

Cognizant of the limits of cross-sectional modeling of the impact of institutional reforms on turnout (Erikson and Minnite 2009), some scholars have employed more recently research designs that hold constant state-level variation to account for unobserved state-level confounders (Keele and Minozzi 2012). Most notable are natural experiments that leverage geographic boundaries to assess any causal linkage between an institutional change and turnout. In their study of individual-level voting records, Walker, Herron and Smith (2018) model a set of natural experiments matching voters on race, party, and geography to examine how changes in the availability of early voting hours affected voter turnout in the 2016 presidential election, finding that changes had a conditional impact. Amos, Smith and Claire (2017) show in their study of changes of Election Day polling locations on turnout in a single county, the availability of early voting sites may help offset transportation or information costs when localities consolidated or move Election Day polling locations. Our study is informed by these studies, as we are interested in assessing whether a specific institutional change—introducing EIP voting on a public campus—increases turnout.

2 Why Florida?

Not surprising given its history of election melodrama (Hasen 2012), the process of early voting in the Sunshine State has not escaped controversy. In 2011, the Florida legislature enacted House Bill 1355, which cut the number of days of early voting across the state from a total of 14 days to only eight days, eliminating the first five days and the final Sunday before Election Day. Critics of the legislation contend the not-so-subtle goal of the Republican-controlled legislature was to depress early voting by black registrants (Herron and Smith 2014). In the 2008 General Election, 31.9% of the electorate, or nearly 2.7 million Florida voters, cast their ballots in person prior to Election Day. African Americans were especially likely to turn out on the final Sunday of early voting, a day that was subsequently eliminated

by the legislature (Herron and Smith 2012).[1] The reduction in the number of days of early voting was correlated with a sharp decline in early voting in the 2012 presidential election; only 2.4 million registrants (or 28.1% of the electorate) voted EIP, a precipitous drop. The decline in early voting was especially sharp among African Americans, despite President Obama once again on the statewide ballot (Herron and Smith 2014). In 2013, facing sharp criticism from long lines during the early voting period, the legislature permitted SOEs to allow two full weeks of early voting, including the final Sunday. In the 2016 General Election, nearly 3.9 million registered voters, some 40.3% of those who turned out to vote, cast their ballot at an early voting location, a new high watermark.[2] EIP voting remains popular across all ages.

As we discuss below, our research design leverages the decision made in late summer of 2018 by eight Supervisors of Elections to offer early voting sites on public college/university campuses in their counties. The option for SOEs to locate early voting sites on public campuses was a result of a federal lawsuit filed in the spring of 2018. In a strongly-worded decision handed down on July 24, 2019, U.S. District Court Judge Mark Walker ruled that the Florida Division of Elections had incorrectly interpreted Florida's early voting statute when it issued an administrative rule in 2014 that on-campus buildings could not be used for early voting. "Throwing up roadblocks in front of younger voters does not remotely serve the public interest," Judge Walker ruled, calling the Division of Elections' determination that public colleges and universities student facilities did not fit with the legislature's definition of a "government-owned community center."[3] Judge Walker's ruling did not require SOEs to provide on-campus early voting; rather, it merely made on-campus early voting permissible (Fineout 2018).

Unfortunately, we are not privy to the discussions between SOEs and college administrators that led to the adoption of on-campus early voting locations in some of the counties by the October 7 state deadline for polling locations. We do know that some SOEs moved quickly to cement an on-campus polling location after Judge Walker's ruling. Alachua County SOE Kim Barton, for example, reached out to the University of Florida to locate an early voting

[1] Florida Department of State, Division of Elections. "November 2008 General Election Ballots Cast." 2009. URL: http://dos.myflorida.com/media/693351/2008ballotscast.pdf.

[2] Florida Department of State, Division of Elections. 2017. "Voting Activity by Ballot Type for 2016 General Election." URL: http://dos.myflorida.com/media/697842/2016-ge-summaries-ballots-by-type-activity.pdf.

[3] See League of Women Voters of Florida, Inc., et al. v. Detzner, Case No. 4:18-cv-00251 (MW/CAS), (US District Court for the Northern District of Florida). Available: https://www.leagle.com/decision/infdco20180725987

cite at the Reitz Union, the hub of student activity on campus, and the university embraced it. "We just want our students to develop a lifetime habit of voting," University of Florida President Kent Fuchs, was quoted as saying, as voting on campus is "also just trying to make it more convenient for them, so they don't waste time in line" (Bousquet 2018). Others were more circumspect. As late as August 17, 2018, the Duval County SOE, Mike Hogan, claimed, "I don't think it's going to happen," when he referred to the possibility of having on-campus early voting at the University of North Florida (Rivers 2018).

In the end, eight SOEs permitted registered voters in their counties to cast a ballot at on-campus polling location at a public college or university during the two-week early voting period, running Monday, October 22 through Sunday, November 4, 2018 (two days before Election Day). The eight counties and participating public universities were Alachua (University of Florida), Duval (University of North Florida), Escambia (University of West Florida), Hillsborough (University of South Florida), Leon (Florida State University and Florida A&M University shared a location on the FSU campus), Miami-Dade (Florida International University), Orange (University of Central Florida), and Palm Beach (Florida Atlantic University). In addition, the Miami-Dade SOE negotiated to place additional early voting locations on two Miami-Dade College campuses, North and Kendall.[4] A total of 52,229 registered voters cast early in-person ballots at the 10 on-campus public school locations; of those, 42% were cast by 18-22 year-olds, compared to only 3% of all ballots cast at an non-campus early voting location by the same age group.

3 Data and Methods

Our study uses a natural experiment to estimate whether the adoption of public campus early voting locations increased voter turnout in the 2018 General Election, especially among young voters. Our as-if random geographic treatment of public campus early voting sites must assume, as do other studies that utilize this strategy (Keele and Titiunik 2016, 2018; Walker, Herron and Smith 2018; Amos, Smith and Claire 2017; Weaver 2015), that an individual does not self-select into the treatment, in this case, that an individual becomes a registered voter in a county because of a future possibility of having on-campus early voting. We think this

[4]We do not include private schools, Nova Southeastern University (Broward County) and Edward Waters College (Duval County), in our analysis, as their facilities do not constitute a government-owned community center.

would be highly unlikely, as the decision to place early voting locations on public campuses in Florida was determined very late in the election cycle. Furthermore, we know of no evidence suggesting that individuals register in a county for the possibility of on-campus early voting.

Our as-if randomized natural experiment is aided by the fact that the opportunity to place an on-campus early voting location—the "treatment"—is exogenous. With Judge Walker's order in place, all 67 of the state's SOEs were permitted to reach out to college/university administrations to identify early voting polling locations. It also benefits from the fact that there were only minor election administration changes in Florida between the 2016 presidential and the 2018 midterm elections. This stability over time allows us to better isolate the possible effect of one convenience voting reform, holding constant other election administration changes.

Drawing on statewide voter file data and taking advantage of the early voting sites on campuses in eight counties in the 2018 General Election, we analyze whether the convenience of an on-campus early voting site affects turnout. We are particularly interested if young voters are more likely to vote due to the introduction of early voting on public campuses, given the historically poor turnout of younger voters. Young voters face considerable barriers when trying to vote (Wattenberg 2008; Ashok et al. 2016). Already less likely to be contacted and mobilized by campaigns (Bennett 1991) or be conditioned as regular voters, young voters are not yet habituated to turn out (Plutzer 2002; Franklin 2004; Shino and Smith 2018).

Young voters also appear to be particularly sensitive to election administration changes that raise obstacles to voting. This is particularly the case in Florida, where young voters are more likely to face long lines at the polls on Election Day (Herron and Smith 2013), more likely to have their vote-by-mail ballots rejected (Smith 2018), and more likely to cast provisional ballots and have them rejected (Merivaki and Smith 2019). Scholars have shown that young voters are more sensitive to changes to the process of early in-person voting than older voters. When Florida reduced the number of days of early in-person voting prior to the 2012 General Election, particularly when it eliminated the final Sunday of early voting, early voting among young voters tailed off in 2012 (Herron and Smith 2014). Using individual-level data, scholars have also shown that in Florida, turnout decreases more sharply among young voters when precincts are either eliminated or relocated, as it increases their information and transportation costs (Amos, Smith and Claire 2017).

For these reasons, we hypothesize that registered voters, particularly young registrants who are the least habituated, who reside in counties placing early voting locations on public campuses will be more likely to vote, as the added convenience will help reduce the information,

transportation, and time costs associated with turning out. On-campus early voting locations reduce the costs for voters when trying to locate or get to their assigned Election Day precinct; they also offer the flexibility of being able to cast a ballot during any day of the week, including on the weekend. Certainly those who backed the federal lawsuit expected such a positive impact of making early voting accessible on Florida's public campuses. "This is truly a victory for the citizens of Florida, especially with so many young people motivated to vote," Patricia Brigham, the President of the League of Women Voters of Florida, declared immediately after the federal court ruling in July 2018, continuing that, "The court ruling demonstrates that making it easier for our students to vote truly matters" (Fineout 2018). Although any registered voter in the eight Florida counties that implemented the new reform were permitted to cast a ballot at a college or university early voting location, we think the on-campus locations are most likely to affect young prospective voters, many of whom are trying to figure out how to vote for the first time. All else equal, then, we expect registered voters–particularly young voters–to be more likely to turn out in the counties that offered on-campus early voting locations.

The dataset we use for our analysis includes individual voters registered in Florida as of October 31, 2018, which we merged (using a unique voter ID number) to the statewide vote history file from December 31, 2018, to include the vote history of voters in the 2016 and 2018 General Elections. It is an unbalanced panel dataset, as some individuals registered (and thus entered into the dataset) after the November 2016 election. This includes individuals who were not yet old enough to vote in 2016; they are excluded from the analysis. Our unit of analysis is registrant-year, and the dependent variable in all the models is turnout in the 2018 General Election. We consider registered voters to be in the treatment group if they reside in a county that implemented on-campus early voting and in the control group if they reside in a county adjacent to any of the eight treated counties.

Table 1 shows summary statistics for Alachua County, which implemented the policy, and the surrounding counties that did not offer an on-campus early voting location. It shows the sample composition means (turnout, registration year, age, percent white, percent female, percent registered as partisan (Democrat or Republican)) both before and after the implementation of the on-campus voting reform for Alachua County, as compared to its respective group of control counties. The population composition of Alachua County's registered voters is similar before and after the implementation of the policy. The population composition is also similar between the control and treatment group. There are no significant differences with

respect to turnout, registration year, gender, race, or political party registration. However, Alachua County's registered voters are younger and more diverse compared to its adjacent counties that make up the control group. These trends are consistent for both 2016 and 2018 election years.[5]

Table 1: Summary Statistics on Alachua County & Surrounding Counties

	Control/before (2016)				Control/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.69	0.46			0.60	0.49		
Registration year	2004	10.82	1998	2012	2004	10.87	1998	2012
Age	53.44	18.65	38	68	52.72	19.12	36	68
White	0.79	0.41			0.79	0.41		
Female	0.53	0.50			0.53	0.50		
Partisan	0.78	0.41			0.78	0.41		
Number of voters	517,833				528,751			
	Treatment/before (2016)				Treatment/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.68	0.47			0.60	0.49		
Registration year	2004	11.81	1998	2013	2004	11.86	1999	2014
Age	45.22	18.97	28	61	44.17	19.30	27	60
White	0.67	0.47			0.66	0.47		
Female	0.53	0.50			0.53	0.50		
Partisan	0.76	0.43			0.76	0.43		
Number of voters	185,969				193,574			

Note: Sample characteristics for Alachua County, which is the treatment group, and its surrounding counties (Bradford, Clay, Putnam, Marion, Levy, Gilchrist, Union, and Columbia), which constitute the control group. The table shows sample characteristics for the control and treatment groups before and after the implementation of the policy. The after treatment sample includes new registrants that were 18 and 19 years old in 2018 who were excluded by the before treatment sample because they were not voting age eligible in 2016.

[5]Sample summary statistics for the other seven counties that implemented the policy and their respective control group are shown in Appendix A.

In the first part of the analysis, we use a differences-in-differences (DD) identification strategy to evaluate the impact of the early voting on college campuses on the 2018 General Election turnout in the eight Florida counties that implemented on-campus early voting. We specify the linear DD model as follows,

$$\begin{aligned} y_{ict} &= \gamma_c + \lambda_t + \tau I_{ct} + x'_{ict}\beta + u_{ict} \\ &= \alpha + \gamma_1 \mathbb{1}\{c=1\} + \lambda_1 \mathbb{1}\{t=2018\} + \tau\big(\mathbb{1}\{c=1\} \cdot \mathbb{1}\{t=2018\}\big) + x'_{ict}\beta + u_{ict} \end{aligned} \tag{1}$$

where y_{ict} is a dummy variable that denotes the turnout of voter i in county c in time t, and γ_c is a dummy variable that captures potential differences between the control and treatment counties prior to the implementation of the policy. λ_t is a time-period dummy for the election year 2018 and controls for factors that might have affected turnout in the absence of the intervention. The coefficient of interest, τ, on the interaction term I_{ct} represents the policy effect on turnout in 2018, which is the average treatment effect on the treated (ATT). The indicator function $\mathbb{1}\{\cdot\}$ takes the value of 1 and zero otherwise. We also control for individual level characteristics x_{ict}, and u_{ict} is the stochastic component of the model. We estimate the linear DD model using ordinary least squares (OLS). We use an unbalanced panel dataset as registrants who were 16 or 17 years old at the time of the 2016 General Election appear in the dataset only once (in 2018), unlike older registrants who are observed in both 2016 and 2018. The indicator function, $\mathbb{1}\{c=1\}$, takes a value of one if the registrant resides in the treated county $c=1$, and the indicator function for time represented by $\mathbb{1}(\{t=2018\}$ takes a value of one if year is 2018.

To evaluate the effect of the availability of on-campus EIP voting on the turnout of young voters, we further refine the treatment and control groups by creating additional treatment and control groups for a registrant's age, which is coded as 1 if the registrants were 18-20 years old in 2016 and 0 otherwise.[6] The adoption of campus early voting locations might have different effects on the turnout rates of registrants of different age groups. The policy is aimed at making voting more convenient for voters in general, but young voters in particular; therefore, we refine the treatment and control group by registrant age. Given that the turnout of registrants of different age groups might be affected by factors other than the policy, to

[6]We compare young college-age registrants living in a county that implemented the on-campus early voting to those living in a county that did not. Also, voter files do not have information on registrants education status, therefore we cannot identify who is a student and who is not. Focusing on 18-20 year olds in 2016 is a proxy for college-age youth.

control for the possibility of confounding factors, we implement a more robust identification strategy than DD, known as differences-in-differences-in-differences (DDD) (Wooldridge 2007). We specify the linear DDD model as follows,

$$\begin{aligned} y_{iact} &= \theta_a + \gamma_c + \lambda_t + \delta_1 I_{ac} + \delta_2 I_{at} + \delta_3 I_{ct} + \tau I_{act} + x'_{iact}\beta + u_{iact} \\ &= \alpha + \theta_1 \mathbb{1}\{a=1\} + \gamma_1 \mathbb{1}\{c=1\} + \lambda_1 \{t=2018\} + \delta_1 \big(\mathbb{1}\{a=1\} \cdot \mathbb{1}\{c=1\}\big) + \\ &\quad \delta_2 \big(\mathbb{1}\{a=1\} \cdot \mathbb{1}\{t=2018\}\big) + \delta_3 \big(\mathbb{1}\{c=1\} \cdot \mathbb{1}\{t=2018\}\big) + \\ &\quad \tau \big(\mathbb{1}\{a=1\} \cdot \mathbb{1}\{c=1\} \cdot \mathbb{1}\{t=2018\}\big) + x'_{iact}\beta + u_{iact} \end{aligned} \tag{2}$$

In the linear DDD approach, we refine the treatment by introducing a dummy variable a which equals one if the registrant is 18-20 years old in 2016 and zero otherwise. This variable captures the potential differences between the two age groups prior to the implementation of the policy. The coefficient of interest in the DDD equation (2) is τ, which estimates the policy effect on youth turnout for the 2018 General Election.

However, a possible drawback of the DD approach is that there may exist systematic differences between the registrants in the control and treated counties that might affect turnout and are not due to the policy implementation. Using the DDD approach allows us to control for two potential confounding factors (Wooldridge 2007). The first is the systematic difference in youth turnout across counties, which might be unrelated with the policy change. The second potential confounding factor is the possible difference in turnout across all registrants residing in the counties that received the treatment.

The common trend assumption is the main identification assumption which is required to hold for both DD and DDD models. It is a strong assumption, which assumes that the voting trends would be the same between the treated and control counties in the absence of treatment (Angrist and Pischke 2009). Even though the treatment and control group might differ, these differences are captured by the county fixed-effects. We test for the common trend assumption using data from the 2014 and 2016 Florida voter file and find that the assumption does not hold in both DD and DDD models[7]. Two possible explanations for the violation of the common trend assumption are that older individuals are more likely to vote and different election types have different turnout rates that might affect voter behavior. Therefore, to address these compositional differences we further refine the control and treatment group to include only young registrants who were 18-20 years old and eligible to vote in the 2016

[7]See table in Appendix E.

General Election. We estimate a series of DD models and DD with multivariate exact matching (Heckman, Ichimura and Todd 1997; O'Neill et al. 2016) for young college age registrants. The estimation of the DD model with exact matching is performed in two steps. In the first step, we perform exact matching on registrants' characteristics such as gender, race, party of registration, and turnout history prior to the introduction of on-campus early in-person voting. By matching individuals on their pre-treatment outcomes makes the common trend assumption more plausible due to the fact that by forcing the trends to be the same prior to the policy leads to a control group which provides accurate counterfactual trends. In the second step, we estimate the DD model using the matched data.

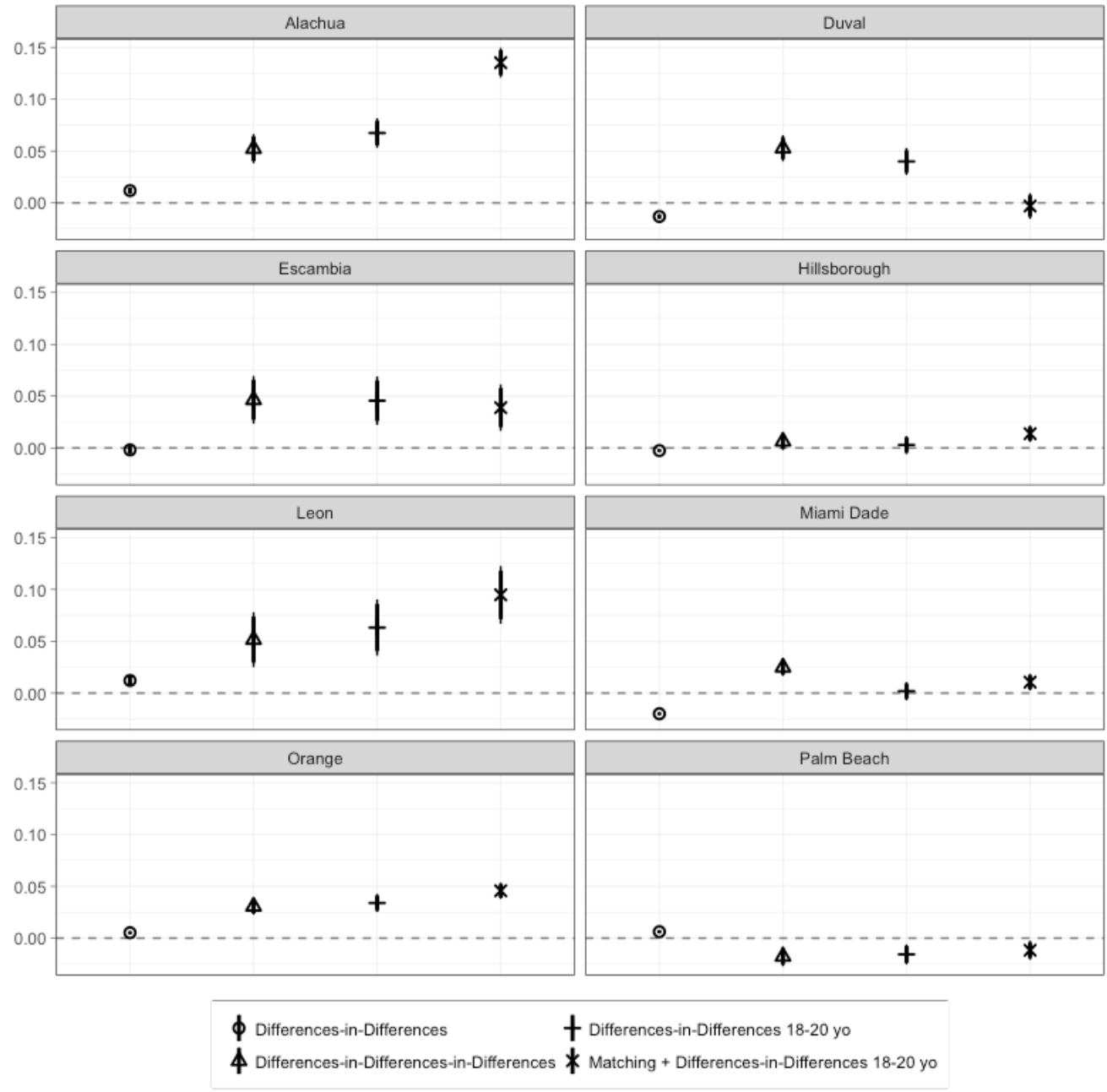
4 On-Campus Early Voting Policy Effect on General Turnout

In Figure 1, we plot the average treatment effect on the treated (ATT) of on-campus early voting sites policy on the 2018 General Election turnout.[8] The estimated ATT using differences-in-differences (DD) models that include registered voters of all ages. As shown in Figure 1, we estimate ordinary least squares models for all eight counties that implemented the policy (Alachua through Palm Beach). All models control for registrants' demographics, party of registration, registration year, and county fixed-effects. These models estimate the policy effect on the treated county (i.e. Alachua) compared to its adjacent counties (i.e. Bradford, Clay, Putnam, Marion, Levy, Gilchrist, Columbia, Union) that did not implement the policy. The DD estimation in Figure 1, shows that the on-campus early voting policy had a mixed effect on the 2018 General election turnout. The introduction of the on-campus early voting sites increased the turnout by 1.2 percentage points among those living in Alachua relative to those living in the surrounding counties. Positive significant effects of the policy are also observed for the Leon, Orange, and Palm Beach counties (see Table B1 in Appendix B). Overall, as shown in Figure 1, the ATT was positive in half of the eight counties that implemented the policy.[9]

[8] Full models for Figure 1 are shown in Appendix B

[9] We reestimate the analysis using logistic regression and results are consistent. See Appendix D.

Figure 1: On-Campus EIP Effect in the 2018 General Turnout



Note: Estimated linear models for the 2018 general turnout. Dependent variable is whether the respondent voted in 2018 coded as 1 or 0 otherwise. Each model controls for registrant's demographics and county fixed-effects. See Appendix B for tables.

Even though all registered voters residing in a county that voluntarily decided to implement the policy had the opportunity to cast an early ballot on campus, the policy was intentionally designed to make voting more convenient for young voters. Therefore, we would expect the policy to have a more pronounced effect on turnout for young registrants compared to older registrants. We utilize a differences-in-differences-in-differences (DDD) approach, which allows us to further refine the treatment and control group so as to evaluate the policy's targeted effect on the turnout of registrants who were 18-20 years old in 2016, compared to older registrants. In Figure 1, we plot the average treatment effect estimated using the DDD approach, which shows the treatment effect on the young registrants residing in the county that implemented on-campus voting compared to the control group. As shown in Figure 1, the availability of early voting sites on college campuses had a positive effect on the youth turnout (college age 18-20 year-olds) compared to older registrants in six of the eight counties that implemented the policy. The on-campus early voting policy implementation increased turnout by 5.2 percentage points among 18-20 year-olds living in Alachua relative to others living in the control group. Similar trends are observed for the other treated counties, except for Palm Beach. After the early voting period had concluded, the Supervisor of Elections of Palm Beach County noted the light turnout of students/youth at the FAU on-campus polling location. SOE Susan Bucher noted attributed the poor turnout to the lack of time to advertise the new location, saying, "[w]e didn't have the time to prepare." "Normally, with a new polling site we'd get the word out, go to the clubs, put up posters, and blanket the world," she continued, but "[w]e didn't have time to do that this year" (Cerabino 2018). Despite Palm Beach, there is clear evidence that on-campus early voting sites had a positive effect on increasing turnout among college age registrants.

The main assumption in the DD and DDD estimation is the common trend assumption—in this case, that the voting behavior of the treated and control units would be constant in the absence of any treatment. To test the validity of the common trend assumption, we re-estimate the DD and DDD models using 2014 and 2016 Florida voter file data. We find that the assumption is violated; therefore we make the treatment and control groups more similar to include only young college age registrants who were 18-20 years old in 2016. Conditioning on the young voter population, we re-estimate the DD models and plot the ATT in Figure 1. As shown in Figure 1, the on-campus policy increased Alachua County's youth turnout by 6.7 percentage points compared to its control group. In all, this effect is observed in five of the counties that introduced the policy. In addition, to make the common trend assumption

more plausible we estimate DD models using matched data for the youth. Estimating the ATT using DD with matched data for Alachua, we find that the implementation of the policy had a 13.5 percentage point increase in the youth turnout relative to its control group. The policy's positive effect on youth turnout persists in six counties that introduced the policy in 2018.[10]

In sum, we find consistent evidence that on-campus early voting policy had a positive effect on youth turnout in the 2018 General Election. This finding holds across different model designs. In the following section, we analyze the impact of on-campus early voting policy on voting early in the 2018 General Election.

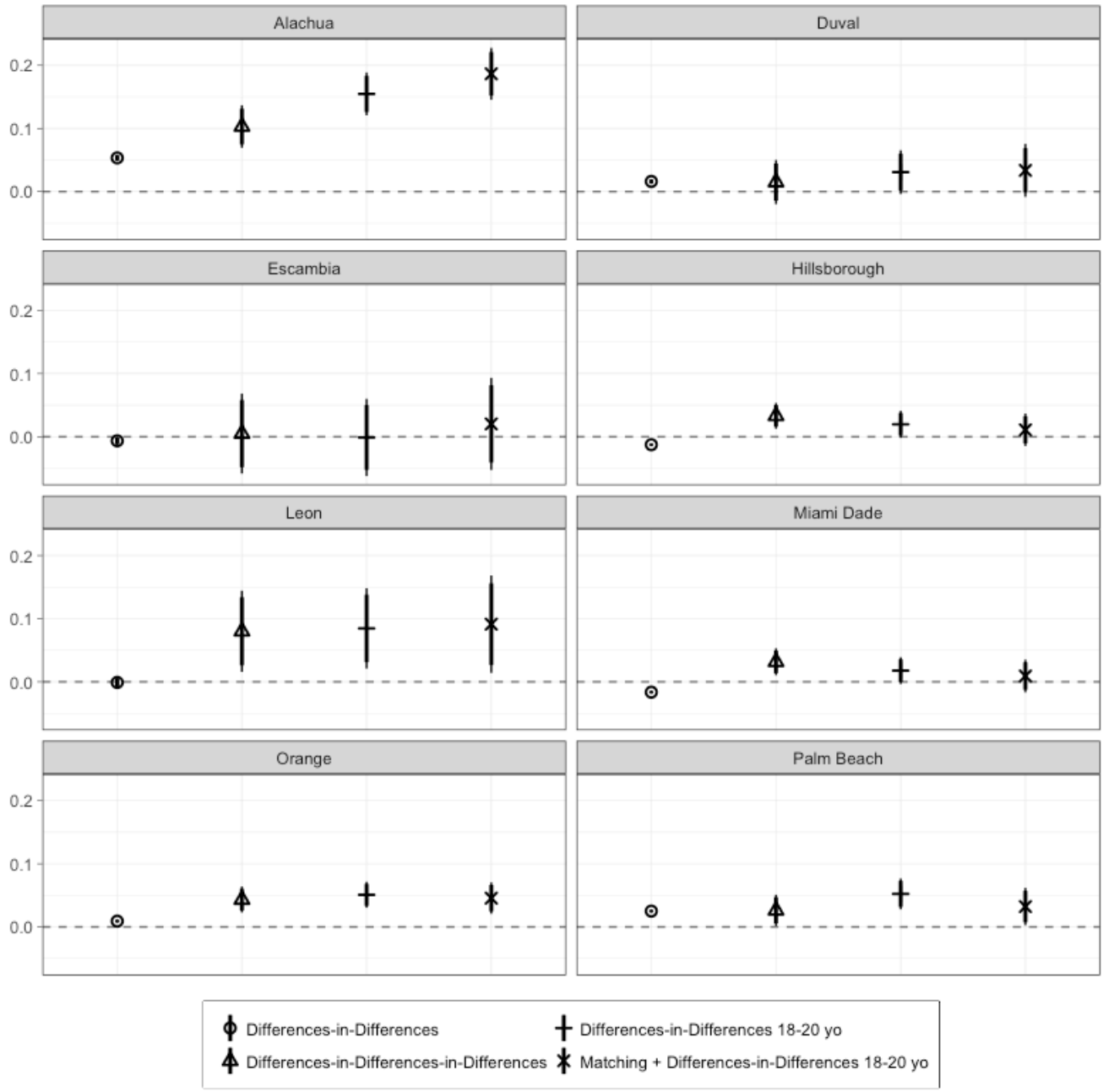
5 On-Campus Early Voting Policy Effect on Early Voting Turnout

In Figure 2, we plot the on-campus early voting policy ATT on early in-person voting in the 2018 General Election. The models are similar to those in Figure 1. The dependent variable is coded 1 if the registrant voted early in-person in 2018 and 0 otherwise. In Figure 2, we plot the estimated ATT using DD models for the early voting turnout for all Florida registrants in the eight counties that introduced the policy. In all estimated models we control for registrant's demographics, party of registration, registration year, and county fixed-effects.[11] As shown in Figure 2, on-campus early voting increased early in-person voting turnout by 5.3 percentage points among those residing in Alachua relative to its control counties. The ATT was positive in half of the counties that implemented the policy (see Table C1 in Appendix C).

[10] In Appendix F we estimate the ATT using coarsened exact matching (CEM).

[11] Full models for Figure 2 are shown in tables in Appendix C.

Figure 2: On-Campus EIP Effect in the 2018 Early In-Person Voting Turnout



Note: Estimated linear models for the 2018 early in-person voting turnout. Dependent variable is whether the respondent voted in 2018 coded as 1 or 0 otherwise. Each model controls for registrant's demographics and county fixed-effects. See Appendix C for tables.

The DD estimates show that on-campus early voting increased the utilization of early in-person voting in half of the eight counties that implemented the policy. Given the aim of the policy to increase youth turnout, in Figure 2 we also estimate DDD models testing whether the implementation of the on-campus policy increased early in-person turnout more generally among young voters. As shown in Figure 2, the availability of on-campus early voting sites in 2018 had a statistically positive effect on early voting turnout for 18-20 year olds registered in six (out of eight) counties that voluntarily implemented the policy. For example, on-campus early voting in Alachua is associated with a 10.3 percentage point increase in early voting turnout among young registrants relative to its control group.

Using the young voter population we re-estimate the DD models and plot the ATT on the early voting turnout in Figure 2. As shown in Figure 2, the policy increased the Alachua County youth early voting turnout by 15.5 percentage points compared to its control group. A positive effect is observed in four counties that introduced the policy. In addition, estimating the ATT using DD models with matched data for Alachua, we find that the implementation of the policy had a 18.7 percentage point increase in the youth early voting turnout. The policy's positive effect on youth turnout persists, even though smaller in magnitude, in four counties that introduced the policy in 2018.

6 Discussion

"If we build it, will they come?" This was the question some Florida Supervisors of Elections and college and university adminstrations were asking themselves after the ruling handed down by U.S. District Court Judge Walker in the late summer of 2018. Judge Walker's ruling lifted the ban on polling stations located on the campuses of public colleges and universities during the early in-person voting period. Would registered voters in general, and younger voters in particular, be more likely to turn out to vote if barriers to voting were lowered? Early press reports were skeptical, suggesting that on-campus voting did little to lift the turnout of young voters. "[I]n almost every case," according to a *South Florida Sun Sentinel* report immediately after the end of the early voting period, early voting sites on public campuses "were among the poorest performing" (Sweeney 2018).

In contrast to studies that use surveys or state-level treatments and cross-sectional data to assess whether early in-person voting might lead to higher turnout, ours leverages a natural experiment and uses administrative voting data with DD, DDD, and DD with matching to

isolate whether or not the implementation of early voting locations on public campuses led to an increase in overall voter turnout as well as the use of early in-person voting in 2018. Overall, with respect to registered voters in the eight counties who were exposed to the late-breaking treatment, we find mixed effects as to whether the adopted policy increased voter turnout. However, with respect to the subset of young registered voters, we find a broad increase in the turnout of young registrants who were exposed to the new opportunity to vote early in-person in facilities on the campuses of public universities and colleges. There is little question that after the eight SOEs and the participating college and university administrations built the new early voting locations, young voters came out to vote. We also find that in the treated counties young voters were more likely to vote early in-person, regardless of location. In short, we find strong evidence that the extension of early in-person voting to college campuses in Florida in 2018 led to higher turnout, all else equal. This study is particularity important for lawmakers, showing that on-campus early voting sites increase youth turnout and opening more sites in the next election cycle might have a positive impact on diversifying the electorate.

We would be remiss if we did not acknowledge limitations of our study. First, we have examined a single reform in a single state in a single election. There is no guarantee that our findings are generalizable to other settings or elections. But sacrificing generalizability might be a reasonable tradeoff, at least for social scientists interested in trying to isolate and measure the effects of a single institutional election reform. We have no reason to believe that such an effect might not also be observable in other settings. Stories abound about the negative effects on turnout–especially among young voters–when voting opportunities on campuses are reduced or removed. For instance, in Waller County, Texas, local election officials cut back on early in-person voting at Prairie View A&M University, a historically black university, spawning a federal voting rights lawsuit, and resulting soon thereafter in Elections Administrator Christy Eason announcing that the county would expand early voting hours on the university's campus (Zdun 2018). In 2014, the Watauga County Board of Elections voted to eliminate an early voting site on the campus of Appalachian State University, despite that "[t]he majority of Watauga County's voting age population (students, faculty, and staff) are on campus during weekdays" (Brown 2014).

Second, the increase in turnout we identify that was due to the opportunity to cast one's ballot on a college campus prior to Election Day might be a novelty effect. Any turnout increase might become mitigated over time, as the thrill of voting early in-person on a college campus wanes. The excitement should not be underestimated. "It definitely makes me feel

empowered," Sabrina Ochoa, a psychology major said after she was the first UF student to cast a ballot at the Reitz Union early voting location at 9am on October 22, 2018, noting that it was "convenient, to be able to vote here then go to class" (Brockway 2018).

Turnout among young registered voters in Florida, and across the county, continues to lag behind other age cohorts. Our study provides further evidence that turnout could increase, especially among registrants who have yet to become habituated, simply by providing polling places that are more convenient for them to cast a ballot. The convenience of on-campus early in-person voting may also have conditional and differential effects. Our finding that on-campus early in-person voting significantly lowered the costs of voting for young registered voters in Florida should be of interest not only to scholars who have had difficulty isolating any specific turnout effects of convenience voting reforms, but to voting rights activists and election officials who are normatively concerned about lagging turnout among young registered voters.

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Appendix A: Descriptive Statistics for the Treatment and Control Groups

Table A1: Summary Statistics on Duval County & Surrounding Counties

	Control/before (2016)				Control/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.70	0.46			0.63	0.48		
Registration year	2004	10.35	1999	2013	2005	10.40	1999	2013
Age	50.7	17.60	36	64	49.91	18.08	35	64
White	0.84	0.37			0.84	0.37		
Female	0.52	0.50			0.52	0.50		
Partisan	0.78	0.42			0.78	0.42		
Number of voters	427,813				438,626			
	Treatment/before (2016)				Treatment/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.66	0.47			0.58	0.49		
Registration year	2003	12.03	1996	2012	2003	12.07	1997	2012
Age	47.96	17.65	33	61	47.32	17.98	32	61
White	0.59	0.49			0.59	0.49		
Female	0.54	0.50			0.53	0.50		
Partisan	0.78	0.42			0.77	0.42		
Number of voters	638,616				652,717			

Table A2: Summary Statistics on Escambia County & Surrounding Counties

	Control/before (2016)				Control/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.61	0.49			0.51	0.50		
Registration year	2005	10.80	1999	2013	2005	10.82	2000	2013
Age	48.98	17.20	35	62	48.29	17.59	34	61
White	0.88	0.32			0.88	0.32		
Female	0.51	0.50			0.51	0.50		
Partisan	0.78	0.41			0.78	0.41		
Number of voters	144,689				148,013			
	Treatment/before (2016)				Treatment/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.66	0.47			0.56	0.50		
Registration year	2003	12.52	1996	2012	2003	12.55	1996	2013
Age	49.57	18.40	33	64	49	18.70	32	63
White	0.72	0.45			0.71	0.45		
Female	0.53	0.50			0.53	0.50		
Partisan	0.79	0.41			0.79	0.41		
Number of voters	226,256				230,452			

Table A3: Summary Statistics on Hillsborough County & Surrounding Counties

	Control/before (2016)				Control/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.67	0.47			0.59	0.49		
Registration year	2004	11.55	1997	2013	2004	11.58	1998	2013
Age	52.88	18.65	37	67	52.23	19.06	36	67
White	0.77	0.42			0.76	0.42		
Female	0.53	0.50			0.53	0.50		
Partisan	0.72	0.45			0.72	0.45		
Number of voters	1,770,953				1,805,178			
	Treatment/before (2016)				Treatment/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.65	0.48			0.56	0.50		
Registration year	2004	11.42	1999	2013	2005	11.45	2000	2014
Age	48	17.81	33	61	47.23	18.19	32	61
White	0.58	0.49			0.58	0.49		
Female	0.52	0.50			0.52	0.50		
Partisan	0.71	0.45			0.71	0.46		
Number of voters	912,780				937,052			

Table A4: Summary Statistics on Leon County & Surrounding Counties

	Control/before (2016)				Control/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.74	0.44			0.67	0.47		
Registration year	2000	12.70	1994	2009	2000	12.81	1994	2010
Age	51.46	17.89	36	65	50.71	18.35	35	65
White	0.62	0.49			0.61	0.49		
Female	0.55	0.50			0.55	0.50		
Partisan	0.88	0.33			0.89	0.33		
Number of voters	64,353				65,849			
	Treatment/before (2016)				Treatment/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.70	0.46			0.63	0.48		
Registration year	2003	12.17	1996	2012	2004	12.25	1997	2013
Age	44.38	18.65	28	59	43.16	19.01	26	59
White	0.61	0.49			0.60	0.49		
Female	0.54	0.50			0.54	0.50		
Partisan	0.80	0.40			0.80	0.40		
Number of voters	210,235				220,649			

Table A5: Summary Statistics on Miami Dade County & Surrounding Counties

	Control/before (2016)				Control/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.67	0.47			0.57	0.50		
Registration year	2004	10.78	1998	2012	2004	10.84	1998	2012
Age	50.62	18.08	35	64	49.99	18.45	35	63
White	0.47	0.50			0.47	0.50		
Female	0.52	0.50			0.52	0.50		
Partisan	0.72	0.45			0.72	0.45		
Number of voters	1,289,652				1,315,762			
	Treatment/before (2016)				Treatment/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.66	0.47			0.55	0.50		
Registration year	2004	11.67	1997	2012	2004	11.71	1998	2013
Age	50.37	18.83	34	64	49.66	19.20	33	64
White	0.18	0.39			0.18	0.39		
Female	0.53	0.50			0.53	0.50		
Partisan	0.69	0.46			0.69	0.46		
Number of voters	1,465,003				1,498,328			

Table A6: Summary Statistics on Orange County & Surrounding Counties

	Control/before (2016)				Control/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.68	0.47			0.59	0.49		
Registration year	2004	10.94	1999	2013	2005	10.98	1999	2014
Age	51.94	18.64	36	66	51.24	19.05	35	66
White	0.69	0.46			0.69	0.46		
Female	0.53	0.50			0.53	0.50		
Partisan	0.72	0.45			0.71	0.45		
Number of voters	2,043,224				2,087,025			
	Treatment/before (2016)				Treatment/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.62	0.48			0.54	0.50		
Registration year	2006	9.97	2002	2013	2006	9.99	2002	2014
Age	46.24	17.39	31	59	45.54	17.72	30	59
White	0.47	0.50			0.46	0.50		
Female	0.51	0.50			0.51	0.50		
Partisan	0.69	0.46			0.69	0.46		
Number of voters	861,726				88,4034			

Table A7: Summary Statistics on Palm Beach County & Surrounding Counties

	Control/before (2016)				Control/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.67	0.47			0.58	0.49		
Registration year	2004	10.75	1997	2012	2004	10.81	1998	2012
Age	51.07	18.30	36	64	50.42	18.68	35	64
White	0.50	0.50			0.50	0.50		
Female	0.52	0.50			0.52	0.50		
Partisan	0.73	0.45			0.72	0.45		
Number of voters	1,394,355				1,422,895			
	Treatment/before (2016)				Treatment/after (2018)			
	Mean	SD	$P(25)$	$P(75)$	Mean	SD	$P(25)$	$P(75)$
Voted	0.70	0.46			0.61	0.49		
Registration year	2004	10.80	1998	2012	2004	10.85	1998	2013
Age	53.92	19.34	37	69	53.23	19.81	36	69
White	0.67	0.47			0.66	0.47		
Female	0.53	0.50			0.53	0.50		
Partisan	0.72	0.45			0.71	0.45		
Number of voters	931,834				950,576			

Appendix B: General Turnout

Table B1: 2018 General Turnout, Differences-in-Differences

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 – 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	14.387***	14.926***	12.675***	13.509***	14.698***	13.194***	14.872***	11.603***
	(0.082)	(0.067)	(0.113)	(0.041)	(0.136)	(0.043)	(0.043)	(0.047)
Year 2018	−0.090***	−0.070***	−0.097***	−0.083***	−0.073***	−0.094***	−0.091***	−0.095***
	(0.001)	(0.001)	(0.002)	(0.000)	(0.002)	(0.001)	(0.000)	(0.001)
EV campus/county	−0.001	−0.043***	0.049***	0.084***	0.008**	−0.009***	−0.014***	0.022***
	(0.004)	(0.003)	(0.002)	(0.003)	(0.002)	(0.001)	(0.001)	(0.001)
Year2018×EV campus/county	0.012***	−0.013***	−0.002	−0.003**	0.012***	−0.020***	0.005***	0.006***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
N	1,426,127	2,157,772	749,410	5,425,963	561,086	5,568,745	5,876,009	4,699,660

Note: The dependent variable is turnout. Turnout is coded 1 if the registrant voted in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. Registrants who were younger than 18 years old in 2016 are dropped from the sample. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$

Table B2: 2018 General Turnout, Differences-in-Differences-in-Differences

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 − 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	21.322***	20.939***	20.634***	18.632***	21.034***	16.743***	20.564***	15.914***
	(0.074)	(0.058)	(0.096)	(0.037)	(0.105)	(0.039)	(0.039)	(0.043)
Year 2018	−0.083***	−0.064***	−0.088***	−0.078***	−0.068***	−0.091***	−0.086***	−0.091***
	(0.001)	(0.001)	(0.002)	(0.000)	(0.002)	(0.001)	(0.000)	(0.001)
EV campus/county	−0.016***	−0.035***	0.048***	0.084***	−0.011***	−0.011***	−0.030***	0.031***
	(0.004)	(0.003)	(0.002)	(0.003)	(0.002)	(0.001)	(0.001)	(0.001)
Age 18-20	−0.052***	−0.048***	0.014*	−0.058***	0.027**	−0.041***	−0.043***	−0.045***
	(0.003)	(0.003)	(0.006)	(0.002)	(0.009)	(0.002)	(0.002)	(0.002)
Year2018×EV campus/county	0.013***	−0.015***	−0.003	−0.003**	0.012***	−0.021***	0.004***	0.006***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Age18-20×EV campus/county	0.204***	0.020***	−0.013	0.028***	0.112***	0.014***	0.049***	−0.039***
	(0.005)	(0.004)	(0.008)	(0.003)	(0.009)	(0.003)	(0.003)	(0.003)
Year2018×Age 18-20	−0.032***	−0.036***	−0.069***	−0.010***	−0.017	0.010**	−0.002	0.005
	(0.005)	(0.005)	(0.009)	(0.003)	(0.013)	(0.003)	(0.002)	(0.003)
Year2018×EV campus/county×Age18-20	0.052***	0.053***	0.046***	0.006	0.052***	0.025***	0.031***	−0.018***
	(0.007)	(0.006)	(0.012)	(0.004)	(0.014)	(0.004)	(0.004)	(0.005)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
N	1,426,127	2,157,772	749,410	5,425,963	561,086	5,568,745	5,876,009	4,699,660

Note: The dependent variable is turnout. Turnout is coded 1 if the registrant voted in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. Registrants who were younger than 18 years old in 2016 are dropped from the sample. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$

Table B3: 2018 General Turnout, Differences-in-Differences for College Age Registrants

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 − 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	111.241***	104.997***	100.498***	104.034***	102.338***	102.935***	130.610***	94.231***
	(3.012)	(2.581)	(4.471)	(1.738)	(3.248)	(1.970)	(1.649)	(2.132)
Year 2018	−0.048***	−0.035***	−0.101***	−0.028***	−0.019	−0.017***	−0.010***	−0.027***
	(0.005)	(0.005)	(0.010)	(0.003)	(0.013)	(0.004)	(0.003)	(0.003)
EV campus/county	0.049*	−0.128***	0.041***	0.002	0.120***	0.015***	0.049***	−0.012***
	(0.021)	(0.014)	(0.008)	(0.016)	(0.012)	(0.003)	(0.004)	(0.003)
Year2018×EV campus/county	0.067***	0.040***	0.046***	0.003	0.063***	0.002	0.034***	−0.016**
	(0.007)	(0.007)	(0.012)	(0.004)	(0.014)	(0.004)	(0.004)	(0.005)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
N	68,751	87,080	27,401	204,232	44,569	208,015	236,080	163,207

Note: The dependent variable is turnout. Turnout is coded 1 if the registrant voted in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. Includes only registrants who were 18 to 20 year olds in 2016. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$

Table B4: 2018 General Turnout, Differences-in-Differences with Exact Matching for College Age Registrants

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 − 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	0.307***	0.269***	0.219***	0.233***	0.149***	0.225***	0.216***	0.215***
	(0.023)	(0.015)	(0.012)	(0.016)	(0.015)	(0.004)	(0.004)	(0.005)
Year 2018	0.168***	0.211***	0.128***	0.181***	0.255***	0.219***	0.192***	0.214***
	(0.005)	(0.005)	(0.009)	(0.003)	(0.013)	(0.003)	(0.002)	(0.003)
EV campus/county	0.005	−0.063***	0.029***	−0.001	0.082***	0.001	0.021***	−0.012***
	(0.022)	(0.014)	(0.008)	(0.016)	(0.012)	(0.003)	(0.004)	(0.003)
Year2018×EV campus/county	0.135***	−0.003	0.039***	0.014***	0.095***	0.011*	0.046***	−0.012*
	(0.007)	(0.006)	(0.011)	(0.004)	(0.014)	(0.004)	(0.004)	(0.005)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
N	62,270	80,228	24,576	188,610	40,170	191,800	215,792	151,806

Note: The dependent variable is turnout. Turnout is coded 1 if the registrant voted in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$

Appendix C: Early In-Person Voting Turnout

Table C1: 2018 Early In-Person Voting Turnout, Differences-in-Differences

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 – 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	0.728***	1.620***	−2.366***	−0.702***	1.331***	0.778***	−1.118***	−0.593***
	(0.112)	(0.096)	(0.157)	(0.050)	(0.191)	(0.060)	(0.058)	(0.065)
Year 2018	−0.115***	−0.123***	−0.090***	−0.071***	−0.054***	−0.103***	−0.113***	−0.106***
	(0.001)	(0.001)	(0.003)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
EV campus/county	−0.035***	−0.051***	−0.057***	−0.087***	−0.009*	−0.019***	0.058***	−0.115***
	(0.005)	(0.004)	(0.002)	(0.004)	(0.003)	(0.001)	(0.001)	(0.001)
Year2018×EV campus/county	0.053***	0.016***	−0.007*	−0.013***	−0.001	−0.016***	0.009***	0.025***
	(0.003)	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.001)	(0.001)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
N	757,152	1,144,698	357,222	2,746,782	319,730	2,723,490	2,930,796	2,429,789

Note: The dependent variable is early in-person voting turnout. Turnout is coded 1 if the registrant voted early in-person in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. Registrants who were younger than 18 years old in 2016 are dropped from the sample. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$

Table C2: 2018 Early In-Person Voting Turnout, Differences-in-Differences-in-Differences

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 − 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	0.512***	2.185***	−0.053	−2.316***	1.283***	−2.291***	−2.414***	−2.273***
	(0.101)	(0.083)	(0.134)	(0.046)	(0.148)	(0.054)	(0.053)	(0.060)
Year 2018	−0.115***	−0.122***	−0.088***	−0.074***	−0.053***	−0.107***	−0.114***	−0.109***
	(0.001)	(0.001)	(0.003)	(0.001)	(0.004)	(0.001)	(0.001)	(0.001)
EV campus/county	−0.039***	−0.051***	−0.058***	−0.088***	−0.010**	−0.019***	0.062***	−0.119***
	(0.005)	(0.004)	(0.002)	(0.004)	(0.004)	(0.001)	(0.001)	(0.001)
Age 18-20	−0.032***	−0.050***	−0.092***	0.000	−0.009	−0.050***	−0.007*	−0.055***
	(0.007)	(0.007)	(0.013)	(0.003)	(0.016)	(0.004)	(0.003)	(0.004)
Year2018×EV campus/county	0.054***	0.017***	−0.006	−0.013***	−0.001	−0.016***	0.009***	0.025***
	(0.003)	(0.002)	(0.003)	(0.001)	(0.004)	(0.001)	(0.001)	(0.001)
Age18-20×EV campus/county	0.073***	0.055***	0.045**	−0.019***	0.021	0.038***	−0.011*	−0.011
	(0.009)	(0.009)	(0.017)	(0.005)	(0.017)	(0.005)	(0.005)	(0.006)
Year2018×Age 18-20	−0.030*	−0.048***	−0.023	−0.040***	−0.068*	−0.037***	−0.059***	−0.038***
	(0.013)	(0.014)	(0.026)	(0.007)	(0.031)	(0.008)	(0.006)	(0.008)
Year2018×EV campus/county×Age18-20	0.103***	0.015	0.005	0.033**	0.080*	0.032**	0.043***	0.026*
	(0.017)	(0.018)	(0.032)	(0.010)	(0.033)	(0.011)	(0.010)	(0.013)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
N	757,152	1,144,698	357,222	2,746,782	319,730	2,723,490	2,930,796	2,429,789

Note: The dependent variable is early in-person voting turnout. Turnout is coded 1 if the registrant voted early in-person in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. Registrants who were younger than 18 years old in 2016 are dropped from the sample. $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table C3: 2018 Early In-Person Voting Turnout, Differences-in-Differences for College Age Registrants

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 – 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	−0.647	5.361	8.475	−0.977	−3.788	−32.267***	−19.877***	−26.686***
	(7.372)	(7.346)	(12.220)	(4.495)	(5.361)	(5.129)	(4.589)	(5.600)
Year 2018	−0.146***	−0.157***	−0.108***	−0.101***	−0.146***	−0.156***	−0.171***	−0.152***
	(0.016)	(0.016)	(0.028)	(0.008)	(0.032)	(0.010)	(0.008)	(0.009)
EV campus/county	−0.017	−0.052	−0.018	−0.039	0.060**	−0.007	0.055***	−0.127***
	(0.039)	(0.027)	(0.016)	(0.035)	(0.022)	(0.006)	(0.008)	(0.006)
Year2018×EV campus/county	0.155***	0.031	−0.001	0.020	0.085**	0.018	0.051***	0.052***
	(0.017)	(0.018)	(0.031)	(0.011)	(0.032)	(0.011)	(0.011)	(0.012)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
N	17,379	17,084	5,085	37,598	14,751	44,681	47,071	33,340

Note: The dependent variable is early in-person voting turnout. Turnout is coded 1 if the registrant voted early in-person in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. Includes only registrants who were 18 to 20 year olds in 2016. $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Table C4: 2018 Early In-Person Voting Turnout, Differences-in-Differences with Exact Matching for College Age Registrants

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 – 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	0.545***	0.587***	0.294***	0.500***	0.426***	0.539***	0.410***	0.531***
	(0.058)	(0.041)	(0.039)	(0.050)	(0.043)	(0.014)	(0.015)	(0.015)
Year 2018	−0.158***	−0.182***	−0.105***	−0.119***	−0.114**	−0.152***	−0.185***	−0.153***
	(0.017)	(0.016)	(0.029)	(0.009)	(0.037)	(0.010)	(0.008)	(0.009)
EV campus/county	−0.141*	−0.026	−0.034	−0.058	0.015	0.009	0.061***	−0.111***
	(0.057)	(0.038)	(0.027)	(0.049)	(0.034)	(0.010)	(0.012)	(0.011)
Year2018×EV campus/county	0.187***	0.034	0.020	0.011	0.091*	0.009	0.046***	0.032*
	(0.021)	(0.021)	(0.037)	(0.013)	(0.039)	(0.013)	(0.013)	(0.015)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
N	9,026	8,442	2,456	18,896	7,106	22,116	23,698	16,584

Note: The dependent variable is early in-person voting turnout. Turnout is coded 1 if the registrant voted early in-person in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. Includes only registrants who were 18 to 20 year olds in 2016. Matching on the previous election outcome. $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Appendix D: Logistic DD and DDD Models for the 2018 General Turnout

Table D1: 2018 General Turnout, Differences-in-Differences (Logistic)

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 − 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	83.67***	89.10***	69.71***	74.25***	92.41***	63.55***	82.85***	57.97***
	(0.47)	(0.39)	(0.60)	(0.22)	(0.81)	(0.21)	(0.23)	(0.24)
Year 2018	−0.41***	−0.32***	−0.40***	−0.37***	−0.36***	−0.40***	−0.41***	−0.41***
	(0.00)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
EV campus/county	0.00	−0.23***	0.25***	0.40***	0.05***	−0.04***	−0.09***	0.11***
	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)
Year2018×EV campus/county	0.06***	−0.05***	−0.03**	−0.00	0.09***	−0.09***	0.05***	0.02***
	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
Log Likelihood	-836,160.87	-1,264,111.37	-455,142.91	-3,272,453.15	-320,418.07	-3,512,762.38	-3,535,706.93	-2,900,555.28
N	1,426,127	2,157,772	749,410	5,425,963	561,086	5,568,745	5,876,009	4,699,660

Note: The dependent variable is turnout. Turnout is coded 1 if the registrant voted in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. Registrants who were younger than 18 years old in 2016 are dropped from the sample. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$

Table D2: 2018 General Turnout, Differences-in-Differences-in-Differences (Logistic)

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 − 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	116.07***	114.61***	103.09***	94.90***	132.06***	77.65***	106.58***	75.15***
	(0.44)	(0.35)	(0.54)	(0.21)	(0.73)	(0.20)	(0.22)	(0.22)
Year 2018	−0.41***	−0.32***	−0.39***	−0.37***	−0.37***	−0.41***	−0.42***	−0.42***
	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
EV campus/county	−0.13***	−0.21***	0.25***	0.39***	−0.08***	−0.04***	−0.17***	0.16***
	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)
Age 18-22	−0.32***	−0.32***	−0.07***	−0.33***	0.07*	−0.26***	−0.30***	−0.27***
	(0.01)	(0.01)	(0.02)	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)
Year2018×EV campus/county	0.06***	−0.06***	−0.05***	−0.01	0.08***	−0.10***	0.04***	0.01**
	(0.01)	(0.01)	(0.01)	(0.00)	(0.02)	(0.00)	(0.00)	(0.00)
Age18-22×EV campus/county	0.85***	0.12***	−0.14***	0.11***	0.52***	0.05***	0.21***	−0.20***
	(0.02)	(0.02)	(0.03)	(0.01)	(0.03)	(0.01)	(0.01)	(0.01)
Year2018×Age 18-22	−0.07***	−0.09***	−0.21***	−0.02*	0.05	0.07***	0.06***	0.05***
	(0.02)	(0.02)	(0.03)	(0.01)	(0.05)	(0.01)	(0.01)	(0.01)
Year2018×EV campus/county×Age18-22	0.21***	0.22***	0.24***	0.06***	0.11*	0.13***	0.13***	−0.01
	(0.03)	(0.02)	(0.04)	(0.01)	(0.05)	(0.01)	(0.01)	(0.02)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
Log Likelihood	-845,144.68	-1,276,643.50	-462,424.92	-3,306,329.22	-318,934.33	-3,526,095.87	-3,571,733.66	-2,920,436.76
N	1,426,127	2,157,772	749,410	5,425,963	561,086	5,568,745	5,876,009	4,699,660

Note: The dependent variable is turnout. Turnout is coded 1 if the registrant voted in the 2018 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. Registrants who were younger than 18 years old in 2016 are dropped from the sample. $^{***}p < 0.001$, $^{**}p < 0.01$, $^{*}p < 0.05$

Appendix E: Placebo Test for 2014 and 2016 General Turnout

Table E1: 2016 General Turnout, Differences-in-Differences

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
				2016 − 2018				
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	13.700***	12.325***	10.763***	10.792***	13.649***	12.126***	12.331***	9.197***
	(0.120)	(0.077)	(0.129)	(0.047)	(0.151)	(0.049)	(0.054)	(0.054)
Year 2016	0.214***	0.233***	0.221***	0.193***	0.146***	0.275***	0.216***	0.269***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
EV campus/county	−0.096***	−0.064***	0.054***	0.046***	−0.014***	−0.026***	−0.058***	0.056***
	(0.004)	(0.003)	(0.002)	(0.003)	(0.003)	(0.001)	(0.001)	(0.001)
Year2018×EV campus/county	0.013***	0.010***	0.006**	0.037***	0.026***	0.018***	0.038***	−0.025***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.003)	(0.001)	(0.001)	(0.001)
Controls	✓	✓	✓	✓	✓	✓	✓	✓
County fixed-effects	✓	✓	✓	✓	✓	✓	✓	✓
N	759,742	1,782,252	612,044	4,358,258	470,986	4,565,820	4,018,926	3,877,264

Note: The dependent variable is turnout. Turnout is coded 1 if the registrant voted in the 2016 elections and 0 otherwise. Control variables include registrants race, age, gender, party of registrations, registration year, and county fixed-effects. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$

Appendix F: Coarsened Exact Matching

Our analysis shows consistent, though not universal, positive effects of campus early voting locations on the general and early voting turnout among young voters. To further test the validity of our findings, while removing the covariate imbalance between the treatment and control group, we utilize one-to-one coarsened exact matching (CEM) and estimating the average treatment effect on the treated (ATT) for registrants 18-22 years old and their propensity to vote in the 2018 General Election. Table F1, estimates the policy ATT for the 2018 general turnout, as the dependent variable is coded 1 if the registrant voted in 2018 and 0 if she did not. We find a consistent positive effect of the policy on the turnout of young voters across all eight counties with on-campus early voting, as compared to young voters in those counties that did not adopt the policy. As shown in Column 1, Table F1, the on-campus early voting policy had a 20 points ($p = 0.00$) impact on the general turnout of the youth of the Alachua County compared to its surrounding counties. Similar ATT effects for the youth general turnout, though smaller in magnitude, are observed in Duval, Escambia, Hillsborough, Leon, Miami Dade, and Orange counties. As shown in Table F2, similar positive ATT are

observed for youth early voting turnout in counties that implemented the policy compared to their adjacent counties that did not.

Table F1: 2018 General Turnout, Coarsened Exact Matching (18-22 Year-Olds)

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	0.35***	0.39***	0.32***	0.35***	0.46***	0.41***	0.38***	0.40***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
EV Campus	0.20***	0.01*	0.03***	0.03***	0.13***	0.01***	0.05***	-0.01*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
N	37,668	50,004	16,788	134,192	8,326	117,656	134,950	104,356

Note: The dependent variable is the 2018 turnout. Turnout is coded 1 if the registrant voted in the 2018 elections and 0 otherwise. Registrants are matched on race, party or registration, year of registration, and whether they voted in the 2016 election. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$

Table F2: 2018 Early In-Person Voting Turnout, Coarsened Exact Matching (18-22 Year-Olds)

	Alachua	Duval	Escambia	Hillsborough	Leon	Miami Dade	Orange	Palm Beach
	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$	$\beta(se)$
(Intercept)	0.27***	0.32***	0.25***	0.20***	0.33***	0.39***	0.28***	0.35***
	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)
EV Campus	0.12***	0.05***	-0.00	0.14***	0.06***	0.01**	0.09***	-0.08***
	(0.01)	(0.01)	(0.00)	(0.01)	(0.02)	(0.00)	(0.00)	(0.00)
N	15,886	19,976	5,526	48,836	3,822	49,338	56,386	41,022

Note: The dependent variable is the 2018 turnout. Turnout is coded 1 if the registrant voted in the 2018 elections and 0 otherwise. Registrants are matched on race, party or registration, year of registration, and whether they voted in the 2016 elections. ***$p < 0.001$, **$p < 0.01$, *$p < 0.05$