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TUESDAY, SEPTEMBER 14, 2021 2:00 p.m.

PUBLIC HEARING ON
BALLOT ORDER SELECTION RANDOMIZATION

BEFORE :
HONORABLE RYAN E. MACKENZIE, MAJORITY SUBCOMMITTEE CHAIR
HONORABLE MALCOLM KENYATTA, MINORITY SUBCOMMITTEE CHAIR
HONORABLE SETH GROVE,
HONORABLE DAWN KEEFER
HONORABLE JEFF WHEELAND
HONORABLE JARED SOLOMON
HONORABLE BRETT MILLER (VIRTUAL)
HONORABLE FRANK RYAN
HONORABLE KRISTINE HOWARD
HONORABLE BENJAMIN SANCHEZ
HONORABLE JOE WEBSTER
HONORABLE CHRISTOPHER M. RABB
HONORABLE JOSEPH WEBSTER (VIRTUAL)

Pennsylvania House Of Representatives Commonwealth of Pennsylvania

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MAJORITY CHAIRMAN MACKENZIE: All right. Well, I will call this meeting to order. This is our second of two subcommittee hearings that we are holding today. This subcommittee hearing is on the topic of ballot order selection and randomization. This is an, I think, important topic, and I think we're going to learn. I think a lot of folks are going to learn a lot more about this topic because it's not something that has come up very often, at least to my knowledge, in previous discussions. But as of late, I've seen that there is a growing interest in this topic.

This topic has been gaining interest in many states around the country as they've realized that current laws may be providing an unintended boost or hindrance to certain candidates based on unrelated factors like luck of the draw or the parties -- whoever has the sitting governor in those particular states.

The increased statistical evidence demonstrating this impact has led to both reforms as well as lawsuits against current practices. And in Pennsylvania, we currently follow a two-part system. For primary elections lots are drawn, and candidates are places on the ballot in a random order through that method. Then for the general
election, the party of the current governor is listed first of the ballots in all races. Other states have followed similar methods, but most notably, California has recently shifted to a more randomized system.

In this hearing, we hope to gain an insight into both the impact of our current approach, as well as practical implications that any reform would have on the administration of elections. We're going to hear three panels really today. Two are listed here. The first is Professor Darren Grant. He's a professor at Sam Houston University. We will then have a county election director, Forrest Lehman, from Lycoming County.

And then finally, we're going to close with two of our own members, Representative Solomon and Representative Rabb, who have both, I guess, either introduced or circulated co-sponsor memos on this topic. So we will hear from them and their thoughts on that. So with that, I will turn it over to the Democratic Chair for any opening comments.

MINORITY CHAIRMAN KENYATTA: Thank you so much, Mr. Chair. You know, we're two for two today in terms of some really good substantive topics in front of us, and I look forward to a robust conversation. I think exactly what you said is spot on. We want a process that does not advantage anybody, a process that allows people to come in
and vote as easily as possible, but also make sure that the choices are presented in a way that's fair. And so look forward to hearing from the testifiers today, and in particular, my colleagues who've been bringing these issue before all of us, so thank you, Mr. Chairman.

MAJORITY CHAIRMAN MACKENZIE: Great. Thank you. So the first panel, as mentioned, we have Dr. Darren Grant, and he is joining us virtually. And actually, before we do that, why don't we just go around? Myself and the Democratic chair have presented ourselves here in person, but we'll go around with the other members.

REPRESENTATIVE WHEELAND: Thank you.
Representative Jeff Wheeland, 83rd District, Lycoming County.

REPRESENTATIVE RYAN: Representative Frank Ryan 101st District, Lebanon County.

REPRESENTATIVE NELSON: Representative Eric
Nelson, 57 th District, Westmoreland County.
REPRESENTATIVE KEEFER: Representative Dawn
Keefer, 92nd District, York and Cumberland Counties.
REPRESENTATIVE GROVE: Seth Grove, 196th
District, York County.
REPRESENTATIVE SANCHEZ: Ben Sanchez from the 153rd and Montgomery County.

REPRESENTATIVE SOLOMON: Jared Solomon, State

Representative in Northeast Philadelphia 202nd.
MAJORITY CHAIRMAN MACKENZIE: Thank you. And I see Representatives Howard, Webster, and Miller joining us virtually. All right. I will turn it over to Dr. Grant.

DR. GRANT: Thanks, sir. Thank you for having me. It's nice to be here. And I'm going to just kind of testify following the written outline I gave you, and then that maximizes the opportunity for you to ask your questions. I serve as an economics professor at Sam Houston State University in Texas. I've been tenured for 10 years. In theory, we have a hurricane over us right now. In practice, I bicycled into work an hour ago. I've been through Pennsylvania several times. Familiar with the state. I have offered expert advice on this ballot order issue in several states in the past couple of years at the behest of Democrats, Republicans, and Libertarians. I've been a professor for over 25 years, and in that time since gaining my Ph.D. in economics, I've published almost two dozen research studies in (indiscernible) academic journals. Several of those concern elections and voting.

Some of my voting research, along with some current research that's ongoing explores both the determination of candidate order on ballots. That is ballots that are putatively randomized, but maybe not
actually randomized in practice. And then also the effective ballot order on vote share.

Now, I will first discuss -- and I published a study in the journal Public Choice on this topic in 2017 where I examined the effective ballot order on vote share in primary elections in Texas for statewide office. And Texas uses a system that is, in fact, not uncommon across the country in primary elections, which is that candidate order could be randomized at the county level.

And Texas has 254 counties, so that's a lot of randomization, a lot of variation. And so you can conduct a statistical analysis that's pretty solid from a research perspective because that randomization process really helps you there in terms of credibility. And look at the effect of being first on the ballot relative to being second, or third, or less.

Now, I did this for statewide office. So I didn't look at, you know, elections for county clerk or what have you. But there was still a reasonable amount of variation in the offices that were being contested. We had, you know, primaries for U.S. senator, governor, and then we also had primaries for less visible offices, shall we say, such as land commissioner, railroad commissioner, comptroller, and positions on both of Texas' two supreme courts. We've got a criminal supreme court, so to speak,
called the Court of Criminal Appeals and then the Supreme Court, which focuses more on civil matters.

And the bottom line there is that there was a ballot order effect observable and you know, statistically significant by the standards of, you know, social science research in virtually every race that I looked at. But its size varied. And the positions where people were most likely to be aware of the candidates, and maybe have heard of the candidates, and learned about the candidates, this ballot order effect was fairly small, but nonetheless, a person who was listed first on the ballot might gain a point or two, one percentage point or maybe two percentage points in vote share compared to someone who was listed last.

And so that means that if you had a two candidate race, for example, then the candidate who was listed first might get an extra point or two in vote share, and that can make the difference in a close race.

Now, for these other state offices the ballot order effect was quite a bit larger, and it wasn't unusual to someone gaining four or five points in vote share from being listed first instead of last on the ballot. And then in these judicial races, it was pretty common for the ballot order effect to be about 10 percentage points. And that means that maybe in a race where people are otherwise
split, if a candidate was listed first on the ballot, they get 45 percent. I'm sorry. They get 55 percent of the vote, and their opponent would get 45 percent. But then if you switch their ballot positions, it flip-flopped, and the other guy would get 55 percent, and that first person would get 45 percent.

In that study, I actually found one race where we had two candidates. The two candidate judicial primary, and both candidates had a last name of Green. One was Rick Green, and one was Paul Green. And in that case, voters were so doggone confused that the ballot order effect was actually almost 20 percentage points. And whoever was listed first tended to get about 60 percent of the vote, and whoever was unfortunate enough to be listed second in that county got 40 percentage points.

Now, those are primary elections. Also of interest, perhaps of particular interest today, are general elections, and $I$ have some ongoing work on that topic. I actually came up with kind of a set of results this summer that's I'm comfortable with probably six weeks ago. So no one's heard about them yet. You'll be the first. But this research is going on with the co-author of Stanford University and some others at the University of Wyoming. And it's looking at the effect ballot order on vote share in general elections for statewide office in Wyoming.

And Wyoming uses a system that's both similar and different from Pennsylvania's. It does award first position on the ballot to whichever party won the previous cycle, but they do it at the county level. And they're using the congressional race since they just have one Congress person. And so they're looking back at who won that particular county in the previous electoral cycle in the congressional race. And so in some counties you have a Democratic win. In some cases you have a Republican win, but that can flip up over time. And so you're able to tease out the effective ballot order.

And so that research find no effect. Nothing significant, nada for the highest profile general elections for president, U.S. senator. But in all the other races I looked at U.S. House, governor, auditor, treasurer, secretary, state, and superintendent of public education -that's what they do in Wyoming -- there's an effective two or three percentage points in vote share, which would favor the persons listed first.

These findings are consistent with a pretty large literature in the United States that examine ballot order effects. The handout that you may have received has these studies listed. My findings are a touch stronger than this literature as a whole. But the literature as a whole does find, you know, sizeable ballot order effects in primary
elections, especially, but smaller but still positive effects in general elections. And also these ballot order effects tend to be stronger in less visible races where voters may be less informed.

So when I testified to the Wyoming legislature a few months ago, I said that the effect in the general election was one or two percentage points. And then once we got the data and ran the numbers, it turned out $I$ was just a touch light on that. The data's indicating two to three percentage points.

Now, in addition to that, I have some additional research that deals with the fact that ballot order can -the determination of ballot order is not perfectly observed. Ballot order can be manipulated by the person who's in charge of, you know, determining that order. Can be manipulated, and therefore, can be not determined randomly across the entire state.

And to clarify what I mean, you know, Texas has 254 counties. And you know, most of those counties, they're going to follow the law and draw numbers out of a hat or what have you to determine ballot order. But you know, some of these counties are small, and so there's not a lot of visibility there. And even though candidates are invited to the drawing, maybe they show. Maybe they don't. Maybe there aren't contested primaries.

And so I've actually uncovered evidence in Texas and in West Virginia that there are a few instances where you can analyze the data statistically and see that not everybody determined candidate order randomly on these ballots. Most people did, but some people didn't. And so you can just imagine the legal issues that could result if non-random ballot ordered favored a particular candidate, maybe determine the outcome of a primary election.

So I have developed some and published some techniques that are designed to identify when that happens, and I'm working some more general techniques to do the same thing. The main takeaway from that research is just because you say it needs to be randomized doesn't mean it's always going to work out that way. You know, there probably should be some sunlight, some way of kind of observing the process just to make sure that things work out the way that you want them to. So let me stop there and then take any questions that you have.

MAJORITY CHAIRMAN MACKENZIE: All right. Well, thank you, Dr. Grant. I appreciate that opening testimony that you offered. And I think, you know, those numbers are pretty staggering, some of what you presented there. And obviously, even small numbers can swing races. And so we are seeking fairness in all of these elections, and we want to do away with as much of that benefit or you know, loss
that some candidates would receive from being places on the ballot first as opposed to maybe further down on the ballot.

So my first question, just to gain some general perspective on this, how many states do it in a way similar to where we do it where it's maybe just a lottery or something like that, and that is consistent across the entire races versus how many do different types of variation? I'll get into the breaking down of the different types of randomization. But how many do a static method versus a randomized method?

DR. GRANT: Yes. It's a great question. And we don't actually have a census of what each and every state does. About 20 years ago, there was a paper that did go through and roughly categorize the different regimes used by different states. That's a little bit old, and even then they weren't completely thorough in their kind of census of what everyone did.

So speaking in more general terms, you find two major systems that are used within the states and/or across the states. And these are, you know, much more common in primary elections. So one is a randomization system, and so in that case you often randomize at the county level. And so you've talked about that in Pennsylvania, and it's not clear you're randomizing at the county level or
otherwise. But it's not uncommon for their to be randomization at the county level. Is that what you do?

MAJORITY CHAIRMAN MACKENZIE: So in the primary or general are you speaking about here?

DR. GRANT: In the primary.
MAJORITY CHAIRMAN MACKENZIE: In the primary it could be. For statewide offices, it is drawn at the Department of State, and so that is consistent and held across the state, but then other primaries could be county elections, you know, obviously done with their own methods at county levels.

Okay. So that is a little different. So if I'm going to characterize two main types. The randomization technique often occurs at the local or county level, even for statewide office. And so, you know, in Texas, in Florida, in West Virginia, you have someone like Jim Justice is the governor of West Virginia. So when he was in the primary, then his position on the ballot was going to be placed randomly in the primary within each county. And what that means is, you know, Governor Justice gets a boost in some counties because he's first on the ballot, and then he doesn't get a boost. Somebody else gets the boost in other counties.

And so it tends to average out. West Virginia has 55 counties, so there's a, you know, decent amount of
kind of averaging out there. Florida has 67 counties, same kind of deal. And so that tends to average out. Texas has 254 counties. You also got a lot of averaging out there. Although I will stipulate that it's not perfect because some counties have much more population than others. And so, you know, there's really about 10,12 counties in Texas have a whole lot of people.

So if you're lucky enough to be placed first in those counties, you're definitely getting a boost. So for local office, if you're running for county coroner, if you have that office, then it's a one and done. And if you happen to be placed first on the ballot, then that's it because it's only -- the race is only happening within that county. But if you're talking about statewide office, you know, like governor or Supreme Court justice. Then this averaging out effect tends to occur. So there's definitely some randomization occurring. You also will see it in local races -- California, and Illinois, and elsewhere.

The other system that $I$ think that's pretty common is a rotation system. And so that is often done at the precinct level. And so you know, you pick someone who's first. Maybe you start in alphabetical order. But then you just rotate across precincts. Wyoming does that in their primary elections. North Dakota does that in their primary and general elections, I believe. California
does it in their -- not in their local races, but in their, you know, statewide races. They will rotate across assembly districts, I believe. And so you will see these rotation systems occurring, as well.

So those are the two most common. There is a real variety out there in the systems that you see, though. You've mentioned a slightly different randomization system that you use in your own state. And some places it's done at the whim of the person conducting the election. I believe in Utah, they just get to do whatever they feel like.

And then there are different kind of permutations of those systems that occur. Sometimes it's an alphabetical order system that occurs. Although I think states have been moving away from that. Sometimes it's an alphabetical order system with a randomly drawn alphabet. Well, that really amounts to a randomization system.

So I think the bottom line is you do have a real variety of systems across the state, but there are these two themes of randomization or rotation, both of which are designed to address this issue of not -- trying not to give someone a systematic advantage in terms of ballot position.

MAJORITY CHAIRMAN MACKENZIE: All right. And I'll ask one more follow-up before $I$ turn it over to some
of my colleagues. So my gut reaction says that out of those options, randomization at a county level and rotation being what you said was at a precinct level, it would seem that rotation would do away with the most amount of variation coming from ballot position because you're dealing at the smallest level. Is that correct?

DR. GRANT: That's correct. Randomization, you know, is both -- tends to be, though, at a larger jurisdiction, as you just mentioned. And then also, isn't as failsafe as rotation in terms of evening out ballot position. It's always possible for a coin -- you flip a coin it could come up heads 10 times. It can happen. But if you're rotating, it's like heads, tails, heads, tails, head, tails. I mean, you're going to have five heads and five tails. And so it definitely is a more even system in that respect.

MAJORITY CHAIRMAN MACKENZIE: Okay. Thank you. I'll turn it to my Democratic Chair for his question.

MINORITY CHAIRMAN KENYATTA: Thank you so much, Professor. My question is about how this works. And I'm hearing about California, which $I$ know has really robust, obviously, mail-in options for folks to vote that way. And so can you talk about how that is happening and how you've seen that play out in different states for folks who are mailing in their vote? Because obviously, they're just
getting one piece of paper that you're not going to randomize.

DR. GRANT: Sure. And I will tell you I have talked to county clerks in Texas and in West Virginia. You know, I tend to call the ones in small places. So you know, these are people that -- you know, county jobs are absolutely respectable jobs, and the people who fill them are esteemed by the community. At the same time, they're not just overpaying you a ton. And there's a ton of work to do. And so you appreciate that, the dedication of these people.

And so you know, there's guidelines that's put out by the Secretary of State or whoever it is. You know, here's the laws, here's the rules, here's how we do it. Now, they're going to follow. They all have been trained umpteen times probably on these rules. And so you know, the rules going to be safer for Texas. And similarly for West Virginia, there's some point in time at which you've got to have a sample ballot ready.

And in West Virginia they actually have a website. You can go up and look at sample ballots for anything. That's available so many days before the election. Probably several weeks before the election. In Texas, it's no so systematic. But you know, you can go up to most counties' websites if, you know, if they have
websites. And some of them it's pretty low-key stuff. But and you can go up, and you can pull that sample ballot down. And you probably got to put the sample ballot right there in the courthouse and tape it on the door or what have you.

So there's a sample ballot that's prepared in advance. And remember, these are randomized at the county level. And by that I mean that within the county whoever won that drawing they're listed first across the entire county. So you know, back when Beto O'Rourke was in a primary against a couple other people, you know, in some counties he's going to be listed first on the ballot in that entire county. And then in other counties he's going to be listed third on the ballot in that entire county.

So the county clerk or whoever is the elections administrator is going to set up those sample ballots. And then they got the names on them right there. And then, you know, the actual ballot's going to, they got to match those sample ballots. And so then you had a mail-in election, that wouldn't cause any particular problem because those ballots have already been ordered, been determined. It's been published, you know, weeks in advance. And then you get those ballots printed. And if you get them in the mail or what have you, that doesn't really pose an obstacle.

MINORITY CHAIRMAN KENYATTA: All right. Thank
you.
MAJORITY CHAIRMAN MACKENZIE: Yeah. And I would just note that, you know, obviously, we have always had -or at least since the 68th Constitution here in Pennsylvania that I'm aware of -- I won't speak to before that -- but we had absentee ballot voting. We now have mail-in voting. And those ballots do go out both in primary and general elections where there are precinctspecific ballots. So in a primary there would be ballots going out for at the smallest level that I'm aware of in Pennsylvania is, like, Republican or Democratic county Committee people are elected at our precinct level. And so therefore, the county board of elections are sending out precinct-specific ballots already. So I would assume that would continue with any kind of change in the process. I will next go to Representative Keefer.

REPRESENTATIVE KEEFER: Thank you, Mr. Chairman. Mr. Grant, so coming from a county where they have a -they're very challenged. They couldn't print enough ballots, figure out how to make ballots to print just in general for the last election that I had creating four-hour lines. This seems a little overwhelming for at least my county. And so do you see a trend of this? Like, do you see as more information or more states are using this methodology, do you see this growing as a trend anywhere
nationwide?
DR. GRANT: There has been some movement toward a -- how would you put it? A more randomized -- there's more randomization, more rotation over time. I think there is some movement in that direction. And most recently, probably, it's the State of New Hampshire, which moved to a -- I think it's a municipal level randomization system in general elections.

And so I do see some movement in that direction, and I do appreciate -- so I live in a -- kind of a unionsized county. If you take the prisoners out -- and we've got a lot of prisoners -- we're running a little over 50,000 people in the county. So I do see the challenges that, you know, our local officials have to deal with in terms of staffing, and volunteers, and you know, people doing those kind of thankless jobs in county government. People, you know, they rarely thank you, but boy, they know how to complain.

And I do think that -- you know, I've seen numerous county clerks and election officials both in Texas and in West Virginia, you know, manage to cope with these things pretty well. In Texas, we not only have county and city positions on the ballot, but we have school districts that just kind of -- they just draw those lines at random, as far as I can tell. And then we have emergency service
districts. You know, but community wants to set up water or whatever.

And so there's just lines going all over the place. And yet, you've got enough time, and you know, it's fairly systematic at the state level in terms of the state level support for the process that, you know, it definitely takes work. There's no two ways about it, but it does seem to be, you know, something that these officials are able to handle pretty well. Just in my experience interacting with it.

REPRESENTATIVE KEEFER: Right. In Pennsylvania we have over three thousand municipalities and you know, school districts, and you know, committee people. And it changes all the -- you, know all the -- just in my county alone or last election there was 1,400 different ballots that they had to print already to do that. I think we're, like, the eighth largest county in the Commonwealth of Pennsylvania. So we have about half -- just under half a million people in the county. So just trying to figure out, you know, how those counties would navigate it. But thank you. Thank you, Mr. Chairman.

MAJORITY CHAIRMAN MACKENZIE: Thank you. Next up we have Representative Wheeland.

REPRESENTATIVE WHEELAND: Thank you, Mr. Chairman, and thank you Professor for participating today.

How's the wind out there? Little breezy?
DR. GRANT: It's actually just fine, and I
bicycled in here to the office about 90 minutes ago. It's been a letdown, but a letdown in a good way.

REPRESENTATIVE WHEELAND: That's good to hear. DR. GRANT: Yeah.

REPRESENTATIVE WHEELAND: You've discussed that your research finds statistically significant benefits for candidates listed first on the ballot, particularly for low information down ballot races, perhaps up to ten percent benefit. Can you compare that 10 percent benefit to the impact of other facets of an election that is like other events? Poor performance at a debate, a scandal of some sort? Is there anything in your research that has -- is in comparison to the ballot location? Have you done any research on other factors?

DR. GRANT: You know, I have some, although I haven't looked at the effects of individual other factors in kind of a determined enough manner to comment from my own personal researching findings on that issue. Obviously, one thing that comes to mind is campaign spending. And you know, there y'all have a body of knowledge yourselves from experience. But in, let's say, the governor's race in Texas, one percentage point, how much money would you have to spend in Texas to get one
percentage point more of the vote in the general election? I don't have to tell you that's going to be a very, very large number. And 10 percentage points in a state, you know, State of Texas Supreme Court or Court of Criminal Appeals elections.

So if you run -- and I'm talking about one of nine positions on the state Supreme Court, which would be a big deal in any state. And you know, in the state of Texas, the budgets of those people when they're running in the general, they tend to run around $\$ 300,000$. I mean, for the entire election. You can look up, of course, all this stuff online. And you can look up how much money they got and where it came from. So literally, a ten percentage point effect, there is no financial equivalent because those candidates are never ever going to raise the kind of money that would even get them a lenth of the way to 10 percentage points more in vote share.

In terms of other events like debate performance and what have you, I can't speak authoritatively from my own search. I mean, we do kind of watch the polls wander around, you know, in comparison to things. And so I don't know that I can add to that. But certainly, in terms of campaign spending these types of effects could be fairly significant. I hope that answers your question as well as I can do given my exact knowledge base.

REPRESENTATIVE WHEELAND: Okay. Well, thank you very much. That was helpful. Thank you.

MAJORITY CHAIRMAN MACKENZIE: Thank you. Next up we have Representative Solomon.

REPRESENTATIVE SOLOMON: Thank you, Mr. Chairman. I just wanted to follow up on the question you had asked, because I wasn't sure there was an answer. Professor, in terms of the number of states that either randomize or rotate, you said there was old research, do you have that number or no?

DR. GRANT: I do have that paper. I don't have it right in front of me. So I did not give you an exact number because $I$ do not have that tabulation in front of me. I could with about four minutes pull that thing and run through it, or $I$ could send that citation to a staff member, perhaps, who could then pull that paper for you. Again, it's a little old, but it does do something of a census across the different states. I did not give you an exact number cause $I$ do not have an exact number.

REPRESENTATIVE SOLOMON: Okay. Yeah, if you could follow up on that, Professor, that would be great. And I wanted to ask you just kind of in general what the number one position means in being the number one candidate on a ballot, but also in other contexts. So $I$ would assume, Professor, like, if you have a power ball
situation, like, that's completely randomized where it doesn't matter which number is drawn first, right, because you need to get all the numbers to win. But then as being a candidate, for instance, sometimes candidate will like to speak first at a political event. Or you watch American Idol, and does the first candidate who's up have any particular advantage from the other two, three, or four that follow? And how are those situations different from the ballot position scenario?

DR. GRANT: That is a fantastic question, sir. And believe it or not, some of the research I'm working on right now, there's the abstract, and it talks about American Idol in addition to the ballot context. So I think you asked -- there were kind of two questions there. Let me answer the second one about how it differs from American Idol. And if you don't mind, I might ask you to go back and restate the first one because your mic came in and out a little bit.

But your question about, say, how about American Idol compared to the ballot situation is a good one, and it gets at a point that psychologists have been exploring, which is the sequencing effect on decisions. And it turns out that there are two types of sequencing effects. There's a primacy effect -- sometimes it's called -- which is where it's advantageous to be first. And then there's
what's sometimes called a recency effect where it's advantageous to be last.

Now, in my own opinion -- and I'm not a trained psychologist, but in my own opinion, having looked at this research, we don't have a fully convincing thoroughly supported by evidence reason for exactly why all these things occur. However, in American Idol, specifically, there's evidence that it helps to be last, to be the person who performs last on the program. And this also is supported by evidence in other competitions such as figure skating competitions, where it's also beneficial to be last.

In contrast, if you are doing food tastings, it helps to be first. And in the ballot order context, you know, my research and pretty much all of this research, it's kind of open-minded in the sense that it doesn't -- it allows -- if there was an effect of being listed in the middle, my research design wouldn't obscure that; it would display that. So my research design is agnostic as to what I'm going to find. And then what comes out of the data is an advantage to being listed first.

The thought that is probably most common among people who study this issue is that maybe there's something about a kind of what's called a satisficing procedure going on where rather than, you know, looking at all six
candidates and kind of juggling them all in your mind, you go through sequentially, and as soon as you hit one that's okay by you, you just pick that. And so whoever's up there first, they get first dibs at being acceptable, and so that's what gives them that primacy effect.

So in fact, the psychological kind of basis for what's going on here is not perfectly understood, but this issue of sequencing effects does show up in all kind of decision-making, not just votes. And I hope that answers your second question. And then you're welcome to follow up on that or to restate your first just because some of that didn't come through.

REPRESENTATIVE WHEELAND: No, that was a very thorough answer, Professor. I appreciate that. The first one was just like -- I was just using an example of, you know, the Pennsylvania lottery. Is that kind of the ultimate randomization that you would look to or no?

DR. GRANT: Well, and you won't see it here, but part of the research I'm working on involves the power bowl lottery. And so I would say the lottery is a little different because there you have kind of a -- I mean, it's a pretty low-probability thing to hit that lottery, and you kind of got to hit all the numbers. So I wouldn't draw too close a tie between that and the randomization system I'm talking about. If that's what you're thinking, I would
discourage you from making that tie too closely.
REPRESENTATIVE WHEELAND: Thank you.
MAJORITY CHAIRMAN MACKENZIE: Thank you. And just to follow up on that. So obviously, your data and your research so far has shown the benefit of being first, that primacy effect, have you seen in any races where there are more than two candidates, multiple candidates on a ballot that there is any kind of benefit or recency benefit for being last? You know, even if the biggest benefit is maybe being first, but is there any kind of benefit to being last in elections?

DR. GRANT: Two answers to that. The short answer is in my own research, no. In other people's research occasionally. In my own research, it's kind of the biggest bump being listed first compared to last, and then there's a notably smaller, but still some bump for being listed second maybe out of five candidates, let's say. And then after second, there really isn't much bump, but there's no -- you know, being in third position, or fourth position, or fifth position, doesn't seem to be any difference.

So I personally am not seeing a recency effect. It has happened probably a couple of times. There's probably around 14 studies now of the United States, you know, ballot order effects in the United States and
probably a couple of those, say two, that have found some evidence of a recency effect. So it's not common, although it has happened on occasion.

MAJORITY CHAIRMAN MACKENZIE: Okay. All right. Well, thank you. Next up we have Committee Chairman Grove.

REPRESENTATIVE GROVE: Thank you. Thank you so much for your time this -- or this afternoon, Professor. Just can you give me a brief description of just kind of your research design and methodology? I'm just interested in how you kind of set that up just for my own kind of research background.

DR. GRANT: Sure. So in (indiscernible) and the Wyoming analysis is ongoing, and it's more complex. But the Texas analysis is published and a little more straightforward. So in most races in that analysis, when you first kind of look, and you see if there's any evidence that ballot order hasn't been randomized across the state. And it's not unusual in some of -- you know, most of these races, some of the lower profile races. Nobody goes in there and says, boy, I can't -- I just wait to manipulate ballot order, you know, or land commissioner. That just doesn't really happen.

So then you look there, and maybe there's two candidates, and you know, it's pretty much a coin toss. And so you're like, okay, and maybe you look at it a couple
other ways, you know, bigger counties and more rural counties, taking this person over that person, and kind of poke around at it. And no, it really does just seem to be just randomized across these two candidates.

Okay, great. So now, you know, you're kind of in the position like they're doing for these clinical trials, well, where, you know, you either get the drug or a placebo, and it's done at random. You know, and that's what the FDA does for every drug. We don't have to deal with present controversies. We just look at any old drug. If you're going to be -- you know, go through the FDA approval process, they just want to make sure that you're randomizing who gets the drug compared to who gets the placebo so that you got kind of an even-handed research design. Let's put it that way.

So then in that situation, then you look at the vote shares across counties, and you can compare the vote shares in counties that had, you know, one candidate -where, say, Candidate $X$ was listed first compared to the other counties where Candidate $X$ was listed second and the other person was listed first. And there you got a difference in the vote shares. That's your estimate of the ballot order effect.

And then you don't stop there because you're an economist, and so you're a little OCD, maybe a little too

OCD for your own good. So then you gather some what we call control variables. And I gathered maybe 10, 11 control variables, you know, education aides, measure of the agricultural production to see if you're looking at real agricultural counties and race stuff. You know, how many people own their own house, which is really important for voting.

And so then you come back at it again, and you say, well, hey, could this difference across these counties be explained somehow by these other factors? And then you hit it with that, and by golly, nothing changes. And so then you say, yeah, this difference between when this person was listed first and listed second, that difference is my estimate at the ballot order effect.

And then, you know, the statistics, there's people that works on the formulas to tell you how precise you want to treat those estimates. And you know, we were in Delaware where there's only three counties, then you wouldn't get estimates that were worth anything. But you come into Texas, you got 254 counties. Then you got something. And so those formulas tell you, yeah, okay, here's your estimate. And you know, maybe got a little bit of like, statistical, like, random error in it. But it's not very big, and so you can kind of hang your hat on that estimate.

So that's kind of an informal presentation.
You're welcome to probe further if you want, but I figured I'd start there.

REPRESENTATIVE GROVE: Yeah, no, that's interesting. Did you, like, look at incumbents versus challengers or campaign spending of one candidate over the other, or you know, I mean -- York County where I'm from from Pennsylvania, there's literally areas where if you have -- if your family hasn't lived there for, like, eight generations, you're not considered from there. So do any of those -- and I'm thinking of this, like, very local races, right? You have a certain last name that's prolific in those areas. Did you kind of look at that kind of genealogy or anything like that, also?

DR. GRANT: You know, I'll tell you, sir, where I -- I mean, I definitely know what you're talking about, and I've actually seen that most strongly in Wyoming, where there was one race, I don't know, 30 years back or what have you, and the county had always been -- and I can't remember if it always been Democratic or always been Republican. Wyoming's actually flipped around a lot. But you get some of these little counties, and by golly, this one candidate overperformed by about 35 percentage points. And so we dug into it, and sure enough, they were from that area. And so even in a general election, it just caused
people to vote for that person.
But you are also correct. That is a local phenomenon. And I only studied statewide races because that's really where you got all 254, you know, counties or coin flips. And I also did not -- I did not account for -well, let me rephrase that. I did not separately account for being an incumbent because it's kind of already baked in there.

So in the last primary for governor, you had the incumbent. And you may have heard of this guy by now, Greg Abbott, running. And then you had some other people who really weren't well-known, including some guy whose literal name on the ballot was (indiscernible) in capital letters. And so you don't have to separately take out the -- and recognize the fact that Governor Abbott was the incumbent. It's already baked in there. Governor Abbott's going to have a certain kind of popularity level, general popularity level on account of how people perceive him and what he's done in office, et cetera, et cetera, et cetera. And the same things this (Indiscernible) person. And so everything that has to do with that person is kind of already baked in there. And then you're looking at how those vote shares differ across the counties based on being first or section, which is determined at random.

Now, the campaign spending could vary across
county. And so but it's very difficult to parse out the spending by county. I can tell you where the money comes from. I can't tell you exactly where to spend. And you pay for ads. You know, you pay an ad agency somewhere in Dallas or what have you, you know, and they make the magic happen.

So I did not account for spending separately, but because of the randomization, that kind of addresses this issue because the randomization is happening -- you know, they're first or second on the ballot at random. And so it shouldn't have any systematic relationship with campaign spending. So that may be more in the weeds than you (indiscernible) looking for, but the bottom line is, you know, I did think about both of those things, even if I can't go out and put a number on it and throw it into the analysis.

REPRESENTATIVE GROVE: Fascinating. Like, if you're a candidate, you're looking at your strong positions, maybe your candidates from -- like, your opponents from western Texas. You're going to put your resources in Eastern Texas. You might not have as much, you know, volunteers, operations out there. So yeah, okay. That's it. Thank you.

DR. GRANT: (Indiscernible - away from microphone) it does come in handy because you -- it is
legitimate to be concerned about some of those -- all those things. And so it just sure is wonderful to know that whether your first and second on the ballot is random, so it's probably not related to any of that in a systematic way. And that alleviates those concerns that your estimates are, you know, polluted in a sense.

MAJORITY CHAIRMAN MACKENZIE: Great. Thank you again.

Representative Nelson?
REPRESENTATIVE NELSON: Thank you, Mr. Chair. And I appreciate the testimony. And just kind of in summary from your starting testimony, the acknowledgment through your research and the research of others that, you know, major headliners might be one percent due to ballot orders, and then a little bit further down the ballot are races that with lower-level tier candidates that could be as much as three percent.

In the acknowledgement that there is an order advantage, if we look to address this issue, it really focuses on the randomization process itself, the selection process. And you know, coming from industry, I'm familiar with the random drug test. And I cited the example in preparation for today of the random winner of the 50-50 that just maybe happens to be a family that really needs that, you know, those dollars.

So you can have randomization for good, but also for bad. And in your research are there some best practice methods, so -- as a earlier representative said, too much randomization, I don't know that our counties can effectively handle because they've demonstrated significant of stumbling when it comes to printing ballots and getting that stuff accurate. So what is a good, consistent, you know, common ground so that you can achieve some randomization, but not be so detailed that you're going to create a problem?

DR. GRANT: So I appreciate your question, sir. And I appreciate the question when asked previously, as well. So I appreciate the question, generally. So let me try answering your question by answering a slightly different question. If someone came to me and said, Professor Grant, what do you think about switching Texas' procedure. And let's just stick with the primaries and leave the generals of out of it. You know, Texas uses a procedure in the general that's kind of like what Pennsylvania does right now. But let's just leave that out of it and go to the primaries.

Professor Grant, would you advocate switching from a county level randomization system to a precinct level rotation system? Would that be something you'd advocate? I've been prepared to answer this question,
although I don't believe I've ever been asked it. My answer would be neutral on that point because, you know, Texas' procedure in the primaries has been around for quite some time, and it's actually kind of a right of passage if you want to say it for everybody to get together for the drawing. You know, it's kind of maybe almost like a campaign kickoff in a way.

And so it has legitimacy among, you know, the public. It's been kind of -- there's a procedure. It's standard knowledge. And these county clerks don't turn over all that often. So you learn it. Then maybe you know it for the next 25 years as you're serving in that position. So to move from that approach to a precinct level randomization approach would reduce the amount of kind of -- there's still a little bit of random favoritism in the randomization system because things don't have to perfectly balance out across the state.

A rotation system would really make things balance out quite evenly, but would have some trade off, perhaps, in terms of legitimacy of the public and perhaps, in terms of the complexity of ballots. And so that is a tradeoff that is not the professor's to judge. I mean, certainly, $I$ would acknowledge that it is a legitimate consideration to take into account. You know, legitimacy and the complexity of administration as well as the
evenness of outcomes.
I will note that when I testified in Wyoming, they were actually suggesting that individual ballots be randomized. And I don't mean at the precinct level. I don't mean at the county level. I mean at the individual ballot level. And the Association of County Clerks for Wyoming, they have 23 counties, did not object to that procedure. So they didn't feel like it would have raised too great a burden.

So it is a good question as to what that administrative burden would be, also a question as to what the effect on legitimacy would be, as well as the effect on fairness of outcome. You know, use a randomization system at the county level, things are going to even out pretty well at the state level, but not going to even out so well at the local level. State legislators may come from just one or two counties. And then, of course, there's a lot of county level positions. So there's definitely some tradeoff involved.

REPRESENTATIVE NELSON: The --
DR. GRANT: And I would just say one last thing. I know I've been too long on this one. In Texas -- I think Pennsylvania's different -- we have a four -- our county commissions all have four seats on the, and then a county judge makes five. And so you know, an option within our
counties would be to go Republican, Democrat, Republican, Democrat across those four county commission zones, so to speak. That would be another kind of hybrid approach that might balance those concerns in an effective way. My pardon if that was too long. (Indiscernible - away from microphone).

REPRESENTATIVE NELSON: No, I think that was helpful. The second part of that question is, is there a method, or have you researched a method that if we would, you know, implement some type of randomization selection that you'd be able to identify manipulation even if it was after the election? So if there were shenanigans in selection, how would you go about after the fact, and you know, how would you address that?

DR. GRANT: So that is the focus of some of my ongoing research. I published a paper last year with two co-authors of University of Washington that presented, you know, formal statistical methods with all the charts, and numbers, and equations. But doing exactly that, if you knew how the ballots were going to be manipulated, that you could somehow read the minds of anybody who might be tempted to manipulate a ballot and say this is what we're looking for.

I think what you really want is something that you don't have to read anybody's mind. It just looks at,
you know, how many time this person is first, and second, and third, and fourth across all the different counties. And so you look at all the hoarderings [sic] across the different counties, and then you put it through the process. And it says something ain't right. Something smells fishy here. And so you don't -- you know, the analyst doesn't have to somehow magically know how the ballots might be manipulated. It's just going to smoke out manipulation whenever it occurs.

And that is what I'm working on right now in a working paper whose link I will provide. I'm going to provide some follow-up and as -- I have a couple of contacts here. So I'll provide follow-up through those contacts. But definitely what you want -- because you want a process that allows you to look at the orderings across counties, let's say, like in Texas, to look at them. And if there's a problem, you want to be able to smoke it out before the election if you can, and otherwise, right, maybe you smoke it out after the election.

So in Texas they -- maybe five years ago they went to requiring counties to submit their ballot orders to the state, and the state puts that stuff on the Internet. And so I had the whole list of ballot orders for the 2020 primary before that primary was held. And so in theory, I would be able to actually run those tests before that
primary's even held. And there have been a few times where the ballot orders are definitely not random. And you can see that in Republican primaries and in Democratic primaries. You can see it in both of them. You don't see it in every race, but you do see it in some of those races.

So that's a little sunlight that help -- and I have, in fact, communicated to people on occasion -- we'll just leave it at that -- that things don't look good. And I think that -- you know, so I think that that kind of visibility as to what those ballot orders are is important. And the tests that I'm developing and have published in a working paper form can be used for that purpose, to go in there and look and say, hey, do these ballot orders look reasonable, or does it look like somebody's getting some benefit here?

And then also, of course, it could be possible to have some visibility in the process that, you know, maybe these drawings should be videotaped and just posted on the Internet, or maybe there should be, you know, certain witnesses. Maybe you should have to have some witnesses just to make sure that things are on the up and up. REPRESENTATIVE NELSON: Great, great. Thank you. Those are some really detailed answers, and I appreciate you sending that after request, as well. Thank you, Mr. Chair.

MAJORITY CHAIRMAN MACKENZIE: Great.
DR. GRANT: Sometimes not --
MAJORITY CHAIRMAN MACKENZIE: Thank you.
DR. GRANT: Sometimes not giving detailed answers
is not my strength.
MAJORITY CHAIRMAN MACKENZIE: No, no, we appreciate your answers and the insight that you're providing. I think it's very helpful here in our process. So we do have a question from a member joining us virtually, Representative Miller.

REPRESENTATIVE MILLER: Thank you, Mr. Chairman, and thank you Professor for your testimony here today. I want to follow up on what Representative Nelson asked previously, and has to do with the issue of audits related to actually finding out what happened. And you kind of detailed some of what your studying and what other -Texas, in particular, has been looking into.

My question has to do with this, if it's pure randomization, then it is possible that candidate $A$ is always first. And then there's no way of finding out if there's a problem. So what my question is, is it randomization, or is it a fixed rotation? So ballot 1 is candidate A is first. Ballot two, candidate B is first. Ballot 3 A, 4 B, and so on.

DR. GRANT: So I would agree with you 100 percent
that the rotation procedure, that can be checked 100 percent. And so, for example, in Wyoming my team that I'm working with looked at every primary ballot in every precinct in Wyoming. There's 500 precincts or something, which I think there's one precinct for each voter. And so they were able to check that, and they were able to confirm that ballot order was determined correctly in every precinct in Wyoming in that election. And there's no ambiguity because there's a rule or an algorithm, and you follow that rule or algorithm, and then you can just check whether that algorithm is followed.
[Started at 1:06:07]
DR. GRANT: So that's 100 percent. Now, in the randomization process, you get into the statistical realm, and that means that you can't know for sure. Now, if one candidate was listed in a two-candidate race -- if one candidate was listed first across the entire state of Texas of 254 counties, and they came up heads in every single one of them, man, the chances of that happening are really quite low.

But you are right. But do you get -- you're into the statistics. You're into the odds here. And so statisticians often use a baseline that, oh, you know, the chances that this could've happened by just randomness are only about five percent. So probably that wasn't the deal.

Someone was monkeying with these orders.
And you could change that cut off. You could say, you know, I don't want to be suspicious unless the chance is really small that this would've happened by random chance. Maybe only a one percent chance that pure randomness leads this particular candidate to be listed first disproportionately. But you're never in the realm of absolute certainly because it is always possible for lightening to strike multiple times. And so you can definitely get cases where the data are suggestive, but not determinative. You look at it, and you think, well, there could be some manipulation going on here, or it could just be random chance. You know, the data really doesn't let me nail that down. That is something that happens with statistics, and it would be an issue with the randomization procedure. I think that answers your question.

REPRESENTATIVE MILLER: Okay. So are you recommending an exact rotation? Candidate $A$ is first on ballot 1. Candidate $B$ is first on ballot 2. Or are you advocating for randomization?

DR. GRANT: Well, I'm not going to advocate for either one of those because $I$ do appreciate that there are tradeoffs here. And you had mentioned an additional tradeoff that is worth considering. You know, there's legitimacy in the procedure. There's the effect on how
much it kind of balances things out. There's the administrative costs. And then the thing that you had mentioned, Representative, is the ability to confirm that the procedure was followed correctly, which is also a legitimate consideration.

So we've listed four things, and some of them favor the rotation system, and some of them favor the randomization system. And you know, my expertise lies in the analysis of these ballot order effects, but I myself don't want to get into the business of trying to steer you across those considerations. I think that that I would want to be in the political arena if need to.

REPRESENTATIVE MILLER: Okay.
DR. GRANT: Yeah.
REPRESENTATIVE MILLER: Yeah. Well, thank you.
And I think just as a final comment, I appreciate your research and the information you're providing for us. And whichever system we employ, if any, will have to address the auditing provision to ensure confidence, as you well know, across the nation. There's a lot of people that are questioning the results. And if we're adding another dimension that adds a question mark, that may not be helpful for a lot of folks. So I appreciate your testimony, and thank you very much, Mr. Chairman.

MAJORITY CHAIRMAN MACKENZIE: Thank you. Next up
is Representative Ryan.
REPRESENTATIVE RYAN: Professor, thank you so much for your time. And I appreciate you being here. You know, I'm not exactly sure where $I$ stand on the issue. And it's not really relevant to the discussion, but $I$ do want to -- I'm talking about the legislation, by the way. I don't mean the study.

And so the questions I'm asking I want to be offered in the spirit of getting the better perspective of what's going on and not -- I think it's for me, anyway, it's really clear. I don't want ballot position to have a favorable or unfavorable effect on any one particular candidate because it's not any significant part of the person's capabilities of being in office. But I'm worried about in the studies and looking at them are certain comments such as -- I'll give you an example, unintended consequences.

So kind of frame issues up in the way I would look at it as a business person. For a challenger to compete against an incumbent is quite difficult from my perspective. And I have no statistical basis for that other than $I$ hear it all the time that there's a value of being an incumbent. And election results, generally speaking, support that when 98 percent of incumbents are getting reelected.

And so what my concern is, does the -- and have any of your studies shown that the randomization or the ballot position makes it harder or more expensive for a challenger to, in fact, then challenge an incumbent? Because when you're doing your marketing, and your mailing, and your advertising, you might say pull lever 2, pull -if you know your ballot position. If it's randomized, you can't do that. And so have you don't any research to indicate whether or not that has an effect?

DR. GRANT: I have thought about it, but I haven't been able to research it, and so bottom line is no. In fact, even in the randomization system, when there are deviations from randomization when some people manipulate the orderings, what tends to happen is they tend to list these popular incumbents first.

So that's, you know, going back to the previous question about auditing and making sure the rules are followed. When there is manipulation, you tend to be, you know, helping those people who already are incumbents and have that incumbent benefit to start. But that is a legitimate consideration, and what you've really done is listed a fifth consideration to take into account.

We talked about the ease of administering this process, but then there's also the ease of informing voters. And you know, again, that falls outside of my
particular expertise. The ballot order effect itself probably results in part from poor information on the part of voters. So they don't really know the different candidates, so they just tend to pick that person that's listed first. But as to whether randomization would make it harder for candidates to inform voters and get their word out is just not something that I'm an expert on.

REPRESENTATIVE RYAN: Okay. Thank you very much. In that same line -- and again, I appreciate because I -- I know Representative Solomon and I have actually had this discussion, and I really like the concept, but I want to make sure that I'm solving a problem and not creating one. And so on the same issue, in my prior life $I$ was a business person, and I would look at ballot positions as almost a -like a shelf position in a grocery store. If you are checking out and there's an impulse item, you want to put it right by the cash register, and someone's doing it.

And so I know when we do shelf space analytics, being on the bottom shelf versus the top shelf is really a big deal, and that's part of a determinative demand aspect of -- but that's one factor of the determinative demand. Should we be looking at this the same way?

DR. GRANT: You know, it's not illegitimate to look at it that way. I mean, you're absolutely right. You know, which shelf you're on in the grocery store just
matters a big old deal. And so I would say the analogy is sound. And you know, you got someone sitting there in that, you know, one shelf down from the top right there at eye level versus someone sitting down there in the bottom shelf. It's not a level playing field. I mean, it's not. REPRESENTATIVE RYAN: And you know, I taught economics at Franklin and Marshall for about 10 years, and when -- as an adjunct faculty member, and when $I$ did it, I would frequently use a term ceteris paribus, right? I would freeze all the variables except the one.

In the studies that you've seen, have we frozen all the other variables and looked only at the randomizations issue? Or have we looked at the impact of it being a multivariate expression for which the correlation coefficient can be significantly different based upon other variables as they interrelate and interact with one another?

DR. GRANT: The short answer to your question is both. So when I was discussing my research design with one of your colleagues, I mentioned that I came at it two ways. And the first way was really not the multivariate thing. It really was just relying on that randomization. So you know, the FDA, when they're looking at a clinical trial, they're really going to hang their hat on that randomization that you randomize across who gets it, who
doesn't. Then all these other factors are going to balance out. And so then if there's a difference in survival rates, or recovery rates, or whatever, you really got to credit it to the drug.

So in the same way in my study of Texas or if $I$ was looking at you know, Florida or Pennsylvania, I think, with -- well, no, use a different system. Florida, Texas, or some of these other places. When it is, indeed, randomized, then you're -- you know, you're kind of hanging your hat on that same deal that the randomization process means that all these other things are going to tend to balance out. They're not going to be systematically related to the first ballot position versus second ballot position.

But then being an economist, you know, we got to do our OCD run the numbers, fire up the computer thing. So again, I gathered about 10, 12 variables about each county that would help to predict, you know, maybe who's going to vote for the two-party candidate versus the establishment Republican or whatever in the primary. And so I threw those into the mix in a multivariate analysis, and by golly, I got same (indiscernible) results with just really similar across the queue. So I really came at it both ways, got the same answer both ways.

REPRESENTATIVE RYAN: Outstanding. If I could
ask you one final follow-up question.
And Mr. Chairman, thank you for your flexibility with this.

Did you see anything where -- as example, if you had a predominantly Democratic county or district or predominantly Republican district that if there was a randomization the candidate from the opposing party that might've gotten first ballot position might've done better under those races than not? Which to me would reinforce that randomization really is a big effect.

DR. GRANT: Well, if you're thinking about general elections, Texas does not use randomization in general. So I was only looking at primaries.

REPRESENTATIVE RYAN: Okay.
DR. GRANT: It's only in Wyoming where $I$ was able to look at the general.

REPRESENTATIVE RYAN: Okay. Fantastic. But so you didn't see anything that would indicate to you that in predominantly Democratic or Republican districts reversing to randomization would have -- in other words, enough study's not been done on that issue?

DR. GRANT: I'm not certain of your question. If you want to know whether the ballot order effect seems to be stronger in one party versus another, doesn't seem to be.

REPRESENTATIVE RYAN: Okay.
DR. GRANT: Doesn't seem to be a whole lot of difference there. And then in Wyoming -- maybe this will get at your question -- you know, you wouldn't think there'd be any party changes in Wyoming, but in fact, over the last 40 years you had about 25 counties go from Democrat in one cycle to Republican in the next. But you also had about 25 counties go the other way. And this is again over a long period.

So you know, you have cycles in politics. And so --

REPRESENTATIVE RYAN: Sure.
DR. GRANT: -- some counties, sometimes they shift from Democrat to Republican. Sometimes they shift back the other way. And so in Wyoming those estimates of the effect of ballot order are kind of based on things going both ways.

REPRESENTATIVE RYAN: Okay.
DR. GRANT: They're kind of both in there. They got the Democrats going to Republicans. And so that's switching up ballot order in some counties. And then you got going the other way around in some other counties. So it's kind of a balanced analysis in that respect if that's what you're thinking.

REPRESENTATIVE RYAN: Sort of along those lines.

I think what the issue if, if I ran in Representative Solomon's district as Republican, would I win if I was first? I'm just kidding. He's got a very heavily Democratic district, and that would not -- I was just teasing Representative Solomon. I apologize. Sorry, Jared.

DR. GRANT: You know, because it's so hard to even get an estimate for the state as a whole, just to get a general estimate, I didn't try to break those estimates down, you know, kind of cut them up and break them up more finely.

REPRESENTATIVE RYAN: Okay.
DR. GRANT: I will tell you that in Texas I took several variables like education, income, median age, couple others I can't remember, and I just looked to see if the ballot order effect really varied with respect to that. You know, hey, in places that are more educated or wealthier, does there seem to be a larger effect or a smaller effect? And $I$ really didn't find that.

So you know, I can't say that this is an authoritative statement, but given the limited knowledge out there, it's probably best to think of it as being kind of a human effect that is reasonably similar across people and not highly sensitive to whether they're Democrats, or Republicans, or wealthy, or not wealthy, or highly educated
or not, or whatever. Tends to be more of just a people thing.

REPRESENTATIVE RYAN: Okay.
DR. GRANT: That's the way $I$ at least think about it.

REPRESENTATIVE RYAN: Professor, this has been very helpful. Thank you so very much.

And Mr. Chairman, thank you.
MAJORITY CHAIRMAN MACKENZIE: Thank you. Final question we have for the professor is from Representative Wheeland.

REPRESENTATIVE WHEELAND: Thank you. Has your work or any work you're familiar with analyzed this topic in relation to ballot questions? Does it seem to make a difference whether the affirmative or negative is listed first?

DR. GRANT: Great question. And the answer is yes, and the answer is also yes. I myself have not looked at this, but there are a few studies that have. I think they tend to look at, like, a bond election, or in California you've got those things that's put on the ballot -- whatever those things are called. Propositions. Thank you.

So and so those tend to be yes, no. Right?
Shall we raise $X$ amount of money by levying $X$ amount of
tax? Yes? No? Shall we do X? You know, shall we amend the Constitution in such and such a way? Yes? No? And so it doesn't look at whether you flip the answer because you aren't going to have anybody put it on the ballot and then put no first and then yes second. You know, it's just always going to be yes first and then no second.

But what they do look at is how far down the ballot they are. So sometimes you get a whole bunch of these propositions are bond issues, or Constitutional amendments, and sometimes you just have a few. And they do find, in fact, that the further down you are in the ballot, the less likely that thing is to pass. So indeed, this kind of mental fatigue effect, this -- it's kind of not sequencing exactly, but just the order in which questions appear. You get more tired as you work your way down the ballot mentally, and then they're less likely to pass. So there is research on that question. I'm aware of a couple studies in the last five years.

REPRESENTATIVE WHEELAND: So it would be obvious that, perhaps, not only candidates, but also ballot questions should be placed in random order?

DR. GRANT: I probably wouldn't offer a judgment on that myself. I think that $I$ would have to think about it more than I have. That is a very good question. And you would again possibly be trading off multiple
considerations. Possibly one question is going to garner more attention than the others. It's actually an excellent question. I really haven't thought about it. It's an excellent question, and $I$ will be chewing on after we've finished this hearing.

REPRESENTATIVE WHEELAND: Well, it gives you something to think about while you're hunkered in for the hurricane or tropical storm. Thank you, Professor.

DR. GRANT: Thank you.
MAJORITY CHAIRMAN MACKENZIE: Great. Well, thank
you again, Professor. I think we all enjoyed your testimony and some of the insights that you've gleaned from your different studies over the years and the studies of others, as well. So I want to thank you again. And the only follow-up was if you can provide that information about randomization and rotation from other states. Even if it's outdated, it will give us some knowledge of what other states are out there and what's going on. So thank you again. We really appreciate it.

DR. GRANT: That sounds great. Thank you for having me, and I will follow up with the staff who reached out to me originally and be sure to provide that soon. MAJORITY CHAIRMAN MACKENZIE: Fantastic. Well, keep on the interesting work on randomization and rotation. We in the legislature certainly appreciate it and enjoy
reading your work. So thank you.
DR. GRANT: My pleasure.
MAJORITY CHAIRMAN MACKENZIE: All right. The next panel that we have is Forrest Lehman, who is going to be joining us virtually, I believe, or we will cue him up.

MR. LEHMAN: Yes.
MAJORITY CHAIRMAN MACKENZIE: All right.
MR. LEHMAN: Hello.
MAJORITY CHAIRMAN MACKENZIE: Thank you for joining us. Forrest Lehman is the director of elections and registration with Lycoming County. He will be providing some input, and then we will move to questions. So I don't believe -- you did not provide written testimony. Is that correct?

MR. LEHMAN: No, I don't have any prepared testimony.

MAJORITY CHAIRMAN MACKENZIE: That's quite all right.

MR. LEHMAN: I just have a couple assorted thoughts here up front that I guess you could say I had them while I was making coffee this morning and listening to what's already been discussed in terms of the testimony and the questions. And I guess the place to start is just that to keep in mind there seem to be two dichotomies here that have to be navigated with respect to ballot order.

And one of them is the divide between what you might colloquially call local offices and state offices. And I think it's been touched on a little bit already.

But in county election offices, we think about state offices as one category. Local is another. State offices being the ones where the candidate has to file with Department of Atate. They file their nomination petitions, their campaign finance, and everything else. Department of State is kind of responsible for them versus the local offices like, you know, the county and the school district, borough, township and so on. That where, you know, those candidates are filing with the county. And so we feel more responsible for them.

So you know, that's one kind of dividing line that you'd have to think about. To what extent do we want to look at changes to candidate ballot order affecting state offices versus local offices? And the other is what you do in a primary versus a November election. You know, and that's been touched on a little bit already that in the primary it's already random, but it's -- I guess you could call it uniformly random. You know, when you talk about statewide office where you're doing what's called a casting of lots, and different counties do that in different ways.

Currently, these are public events. They're advertised; they're witnessed. So that part of the
equation is actually already contemplated by the election code. And then in November, yes, there is a party ballot order preference that's determined in the gubernatorial election. And one interesting point about that is -- maybe this is just me personally, but it seems to me the way we do that it almost creates a perverse incentive for third parties to run in the gubernatorial election specifically to run for governor because that's a way they can try to secure ballot position for four years.

You know, and so it leads maybe parties to run for governor that might otherwise not choose to do so. And so right now, for the next four years, you've got Democratic, Republican, Libertarian, Green, and it's everybody else in alphabetical order.

And I guess the other point about November elections is to keep in mind that right now there is some element of merit imbedded in that. You don't see it in a vote for one race, but when you get into a vote for two, three, four, like school director or borough council, if you have multiple Democrats, multiple Republicans on that November ballot, they are ordered based on how many votes they got in the primary. You know, and so that -- I guess that's something to keep in mind because that may be something that's worth holding onto if, you know, you looked at how things were done in the primary. Had an
arrangement that you thought was more fair, more equitable. And then there was that element of merit that carried over to the November ballot. So something else to think about there.

As far as county level randomization versus precinct level randomization, I think that was the other kind of -- you know, two different models that were being proposed and prepared. As far as the county lift on implementing either of those, I think the county level randomness would probably represent less of a departure, less of a challenge compared to what we currently do.

I don't see any new programming challenges in terms of the voting systems. And in fact, you know, one thing that could be done if it was county level randomness for state races, for statewide races, Department of State could randomize the counties' ballot orders for them. You know, just like the secretary certifies the ballot, the counties now, they could tell, you know, Lycoming County, this is the order you're going to use for the Supreme Court justice race, and you know, Chester, this is the order you're going to use, and everybody do that so that the statistical analysis doesn't need to be done to root out, you know, whether counties are doing it right. It might just be a question of you know, was that randomness done correctly that one time.

If that was done at the county level, you would probably still need some rules for local offices, though, to determine party and candidate order if it's not going to rotate at all. And maybe you keep it random in the primary, but in November, you could go purely on the primary results irrespective of party. You know, so whoever got the most votes in the primary on either party ballot goes first in November. Doesn't matter if you're Democratic. Doesn't matter if you're Republican. It's just going to go right down the line. So that's one thought there.

I think one, you know, challenge whether you do this at the county level or at the precinct level is it could cause some minor complications for candidates for parties to the extent that a lot of them will circulate prefilled sample ballots. You know, voter guides with graphics of ballots. I'm not sure how easy that will be to continue to do because you could give a voter a ballot filled out to say this is what you need to do, and then they go in, and their ballot doesn't look the way they anticipated. And I think that can happen in either model.

But if you take this down further to precinct level, I think that's where you could really get into some complications for what county offices have to do. I'm thinking about the programming could be more difficult.

The ballot proofing could be more difficult.
Now, I know it was brought up already that, you know, we've had some difficulties with programming errors, that kind of thing. You could have more difficulty with programming, with proofing of ballots because now you have the same contest of hearing multiple different ways within a single county. You know, and it's not like you could look at the ballot and go that $I$ know that, you know, this person's going to go first and this person's going to go second. You really have to scrutinize that contest on every ballot to make sure that all the elements are there, even if they're in a different order. You know, and that makes proofing a little more complicated.

And I guess the last part of that with the equipment is the potential complicating element of that we have fix, six different voting systems in use in Pennsylvania. I haven't engaged with this functionality in my system personally because there hasn't been a need to, but when you look at what they already support, what might need to be done to get into certification timelines at the EAC, at the state level, and to the extent that any software updates or changes needed to be made to certify voting equipment to implement this, you could be looking at -- I mean, it could be up to a two-year time frame to get a change in.

I mean, some of the companies right now have had stuff sitting at the EAC for a year that hasn't been certified because the EAC, it just -- it moves at a glacial pace even under the best of circumstances. So you know, the timeline on this could get complicated if it involves changes to certify voting equipment. But I guess that's everything I have up front. So we can go to questions.

MAJORITY CHAIRMAN MACKENZIE: Great. Well, thank you. First up, we have Representative Solomon.

REPRESENTATIVE SOLOMON: Thank you so much for that. I just wanted to pick up on your last point first, which is sort of the grace period. You talked about the need for counties to adjust. Just talk about your county. How long would it take you, let's say, to be ready for this whether it's randomization or rotational based system? You think you would need a year, two years? What do you think?

MR. LEHMAN: If it was at the county level -- if it was limited to the county level where, say, you know, I was told that your statewide offices, this is the order you're going to use as opposed to the order another county's going to use, it wouldn't add any extra time at all because $I$ can just plug the candidates into my ballot software and say that, you know, this candidate's going to be first and this one's going to be second. No big deal.

But when you start getting into moving that down
to randomness within the county, you know, that I might -say I have a countywide race like sheriff and they tell me that, you know, your sheriff -- you know, the Democratic candidate is going to be first on the ballot, and half the precincts your Republican's going to be first, and you're going to use your voting system software to rotate it.

Well, now, you get into how does that work within the software? Does it do everything the statute requires it to do? And is that going to be the case not just for my software, but all the counties in the state that are using different equipment?

So that's where you get into a certification problem, software problem that could take anywhere from a year to two years to resolve. To be fair, some of this equipment might support exactly what the legislature would want to do, might support it right out of the gate, but there could by other systems that don't, and that might involve really some outreach to Department of State and those companies to ascertain what are their capabilities right now? How does that line up with the intent, you know, that where do we want this to end up?

REPRESENTATIVE SOLOMON: So the randomization you could do in November? You would be ready to go?

MR. LEHMAN: If it was county level randomness -REPRESENTATIVE SOLOMON: Right.

MR. LEHMAN: -- county level randomness can be, you know, programmed manually. You know, I can say that everywhere in my county and all my precincts this candidate's going to go first. This candidate's going to go second. And the only randomness is that in my county it's one way. In you know, Philadelphia county it's another way. In Clarion County it's another way. That's fine. But it's when you're going into your own county within your county and telling it I need my ballots to look different within different precincts, that's where you're going to get into some real complications.

REPRESENTATIVE SOLOMON: And so in your example, the Democratic candidate for sheriff and Republican candidate for sheriff, if I said to you today I want you to rotate within every one of your precinct to get rid of any advantage that ballot position might give to either the Democrat or Republican, that's what you're saying would take you a longer time to do?

MR. LEHMAN: Yeah. That would be a bigger lift because every county would have to ascertain for itself, what can my system do right now going toward that goal? Does it fall short in any way? And if it does, what changes need to be made to the software to support it? And you know, if there's a statute passed and then we're finding out our equipment can't do it, you know, then it's
already too late.
So for precinct level, you know, within the county randomness, that's where the capabilities of the software of your certified voting equipment becomes incredibly important and where the timeline to be able to comply could stretch out years just because of how long it takes to make changes to certify voting equipment.

REPRESENTATIVE SOLOMON: Thank you.
MR. LEHMAN: Yeah.

MAJORITY CHAIRMAN MACKENZIE: Great. Thank you. So I think we've addressed the current system we have now versus randomization by county as compared to the rotation, the precinct rotation, which we talked about. And I understand. And maybe, you know, there are different options. You maybe do some kind of phased approach where you go to the easier method that can be done now at the county level randomization, and then maybe you take a second step down the road. So you could do something like that.

But let me just ask, the challenges of going straight to a precinct rotation. Because in the discussion that we were having -- I was having with the Democratic chair when he was here before, I made a comment that, you know, we're already preparing ballots at the precinct level at least in primaries today because you have county

Committee members running for their county party Committee, and those -- at least in our area, those are run at the precinct level.

In our county, in Lehigh County, each precinct is already preparing a unique ballot for the primary. So if they're already doing that and preparing a unique ballot for the precinct, I guess what would the challenge be to adding -- I guess you're adding variation in other races or rotation in other races, but it's still going to result in a unique ballot for that precinct.

MR. LEHMAN: The challenge is going to be how far down are you drilling to do the randomness? So what counties are doing right now is -- you know, if you talk about a primary, we're having a random drawing for ballot position where, you know, like in my case, maybe they draw a number out of a hat. Well, this number goes first on the ballot. All that is being determined outside of the voting equipment.

So we do a drawing, and I already know based on that drawing, you know, this candidate's going to be first, second, third. That all gets manually programmed into the system, into the ballot design. To tell it, this candidate's first, this candidate's second, and it's going to appear the same way then all over the county, that contest.

And similarly, you know, if randomness was done across my county the same way -- so Department of State told me, you know, in your race you're going to put the Republican first for Justice of the Supreme Court in November, and they told another county you're going to do the Democratic candidate first. We could do that. We can manually program that level of randomness into our equipment because the Republican's going to be first for Justice of the Supreme Court across my entire county.

So there's no software magic that is needed. I just tell it this this the way the ballot looks, and it's going to look the same everywhere. Where the, you know, the greater lift comes in is if I need a Democrat to show up first in some of my precincts and I need the Republican to show up first in other precincts and rotate it around. That's where it has to happen, inside the voting system software.

And that's where you get into the fact that, you know, that $I$ don't know that it's ever been formally ascertained by Department of State as part of a state certification process because it's never been a statutory requirement in the election. So you know, that's where every county would kind of be scrambling to figure out what can our software do? Does it do what we need it to do?

And the better way to approach that problem would
be for it to start with the legislature and Department of State deciding, what do we want this to look like? What does the software need to do to make that happen? And we've got to test and certify all the current equipment to make sure it can do that. You know, and there may need to be updates for that. So it gets to be a lot more complicated if counties have to accomplish that on a precinct level.

MAJORITY CHAIRMAN MACKENZIE: Okay. Let me ask the question this way. So I have seen lists from the Department of State. Now, I don't know if these are official lists or if it was just somebody's accounting within the Department, you know, or some methodology used within the Department. So $I$ have seen lists where all of the precincts are numbered across the entire state, and each precinct has its own unique number identifier listed next to it. Again, $I$ don't know if that was just in one method that they were providing data or if that is consistent all the time.

But so if the Department of State had a system where each precinct is, you know, listed alphabetically and then by division and ward and subsets within that, and they're all listed out, and they're all given a unique identifier, and then the legislature were to come up with a precinct rotation system where they would be rotating those
candidates on the ballot, and then, you know, it starts over once you've gone through all the candidates in that race.

If the Department of State were to tell you that this is the order for each of your individual precincts, here is the order for all of the races. Here's the order for president. Here's the order for senator. Here's the order for governor. Here's the order for all of those state determined races. And they told each county -- they gave you that spreadsheet and specifically said here it is. So they took that work away from you. Could you then load that information for each of your precincts?

MR. LEHMAN: No. I don't believe the software in my voting system can do it that way. It's not really a question -- the challenge there is not really a question of work that the county would need to do. It really has to do with what are the technical capabilities of the software. And I think that the latter -- what you just described would actually be more difficult because that's -- what you're describing there would be -- I guess you could call it manually determined randomness. I'm not sure if that's a great way to describe it, but it's like, you know, the randomness has been determined outside, as you're describing, by Department of State, and they're telling us, you know, do the contest differently in every precinct, and
here's exactly how it needs to be done differently.
The software would not permit that right now.
You couldn't program a candidate to appear in this position in one precinct and that position in another. I think to the extent the ballot design software in these systems accomplishes candidate rotation, it's done, I believe, on -- it may be a random basis. It could be a rotating basis, but it does it on its own.

You know, it's kind of like you pull the trigger and it does it. I don't know that you have the ability to go in and control precinct by precinct and say, no, no, I want you to do it this way here and that way there. It's kind of like you either turn that function on and let the chips fall where they may, or you don't. But you know, these are all the kinds of things that the counties would have to ascertain in their systems and Department of State would have to ask these vendors about. And it's such a new type of function that it's never been tested in the state that they may want to take a look at everything before they would certify the equipment to be used in that way.

MAJORITY CHAIRMAN MACKENZIE: Okay. You know, I'm happy to -- obviously, these hearings, not just this one, but the earlier hearing, as well, they're designed to gain information from experts in the field and understand how the impacts of legislation would play out in practice.

So you know, we are going to continue the discussion, and we appreciate your joining us here.

We have reached out to the Department of State to gain input from them, as well. At this time, we haven't heard back, but hopefully, they will provide their input, and again, hopefully, we can continue this conversation with the input of all the different stakeholders, county, boards of elections, the Department of State, and any other interested parties, as well.

All right. Seeing no other questions, we will wrap up with you. So thank you very much, Mr. Lehman, for joining us. And we will conclude this panel, and we will next go to a third and final panel where we will have Representative Solomon and Representative Rabb providing their input and thoughts on the legislation that they have introduced or either circulated co-sponsor memos on. So --

MR. LEHMAN: Thank you very much. Good afternoon.

MAJORITY CHAIRMAN MACKENZIE: Thank you. All right. Republican Rabb, are you with us? REPRESENTATIVE RABB: Yes. MAJORITY CHAIRMAN MACKENZIE: All right. We will start with you, and then we will go next to Representative Solomon. So feel free to start whenever you're ready.

REPRESENTATIVE RABB: Thank you, Mr. Chairman.

It's an honor to be on this panel and to benefit from the expertise of the prior two testifiers. Back in June of 2019 in the previous term, I circulated a co-sponsorship memo regarding establishing rotating ballot positions for candidates. I went on to introduce it in October of 2019, and I reintroduced it this year. It's currently House Bill 1797.

And essentially, what this bill seeks to do is to avoid human error and potential foul play in a manner that could be well audited by removing unnecessary barriers to candidate viability. There are a lot of factors that impact candidate viability that are within the control of specific candidates and campaigns. But how it operates now, we have an unnecessary barrier for viability irrespective of the legitimacy or the qualifications of any given candidate.

And lastly, there is the technological feasibility to do this with certain voting systems. I believe the previous gentleman referenced that there are five or six different voting systems, certified voting systems. I believe most of them can do this, and I think there's room to allow those counties that have the technical capability to do this to do so because it wouldn't be unfair because the very thing that would be embraced is something that would remove those undo
advantages to candidates based on casting of lots.
So even if there was a way to allow those counties that had the capacity to do so to start and to facilitate and expedite other counties to get to that level, that would be a great step going forward. But as it stands right now, I represent part of Philadelphia, northwest Philadelphia. So I'm in the most populous county in the state. We choose ballot position based on candidates or their designees pulling lots out of an old can, an old coffee can -- and it's quite a tradition in Philadelphia, but it is a tradition whose time should draw to an end simply because it create an unfair advantage to whomever because of the luck of the draw.

And when we have technology that can obviate those undo advantages, why not leverage them if they're at our fingertips right now? And as previous commentators have said, we do things on the precinct level when we elect Republican and Democratic Committee people. So given the systems that exist -- I can't speak to all of them, but I can speak to the one that operates in Philadelphia and other counties that this is something that is technologically feasible, and I think it's worth pursuing simply because it is auditable.

You can find out before the election happens if, indeed, there's foul play. But the reality is there could
be foul play for the system that has been used for decades, so -- and that is an analog process. That is literally people sticking their hands into a coffee can and pulling out their number.

So I think just getting us to the 21st Century and using the technology that is already available for many counties and the voters in it is worth pursuing. When we talk about what it means to have a level playing field and merit, those things go out the window when because you choosing a ballot position that is low -- you could be the most viable candidate. You could've raised the most money. You could've had the longest record in terms of community service, have an outstanding resume. But in places like Philadelphia and other places the party that you're affiliated with may very well tell you don't run because voters are not going to look for you way down on the ballot. And that's a shame.

We should do things to encourage good candidates to run. And when you have something like this, this barrier that can so easily be dissolved, I think the impetus is on erring on the side of a level playing field and embracing the technology we've already invested in through our state.

So I have a bill. It is materially the same as Representative Solomon's. I believe that getting good
feedback from the Secretary of State, and county commissioners, and elections officials makes sense to determine which systems could use this, and how quickly, and what unintended consequences could be avoided. But ultimately, this is a non-partisan approach to helping candidates and the voters they seek to represent. Thank you, Mr. Chairman.

MAJORITY CHAIRMAN MACKENZIE: Great. Well, thank you, Representative Rabb, for joining us today and sharing about your legislation and your thoughts on potential changes to the current systems. We appreciate that. And next we will go to Representative Solomon.

REPRESENTATIVE SOLOMON: Thank you, Chairman. I just want to say that I really appreciate you bringing this issue up before this committee. It means a lot. I think Rep. Rabb hit a home run in terms of his presentation. And I'm going to pick up where Rep. Ryan left off. Let's assume that the two of us were running in a race together, whether it's in his home county of Lebanon County, or in Philadelphia County, or statewide. There are certain sort of factors that you would assume any voter takes into account, reasonable factors.

He's a Republican. I'm a Democrat. That dictates certain ideology that flows from our party label. How much money we raise. Political insiders and others
will look to that as an indication of how well we are moving our campaign forward. Polling data. Some voters look to that. Media coverage, how the media is portraying the nature of our campaigns. The ongoing narrative of the back and forth between Representative Ryan and myself during a general election battle.

Our votes in the legislature. Did I vote a way that maybe his folks think was not in line with his county values? If he ran in my county, did he vote in a way that maybe doesn't reflect some folks in Philadelphia County? These are all reasonable. And we might agree or disagree that one of these variables should be high up on the list as opposed to one or the others. But the one thing that should not matter is ballot position.

If Republican Ryan is gaining two to three points because he's one and I'm two, or I'm gaining two to three points or more because I'm first and he's second, that has nothing to do with any of the factors that naturally flow when you have people from different parties, or even within the same parties, or unaffiliated folks running for office.

This becomes worse, right, more complicated if we have more people running. So let's say we brought all the Committee back and Representative Keefer ends up and she's at the bottom of the ballot. She's loth in a judicial race. She might be eminently more qualified as a jurist
than me, but I'm first. It's likely that Rep. Keefer decides to drop out of that race, not because of merit, but because she's 10th and I'm first. And maybe I'm not qualified at all. Maybe I'm just fresh out of law school and I have no clue what I'm doing and actually have never written an opinion or considered any of the legal issues that are going to come before me fast and furious when I'm on the bench. That doesn't speak to any sense of fairness.

In Philadelphia this is worse. This is all done by this, a Horn \& Hardart's can. We literally entrust our Democratic process to a Horn \& Hardart's can where I go before the voters based on what lot I pick, whether I pick my name 1st, 10th, 15th, or 20th. This system is not fair. It's not efficient.

A recent article in Philadelphia before the last judicial election in quotes said, hopes of judicial candidates determined by Horn \& Hardart's can. Lead headline. So it's not just that we have this process; it's that we're right up and front about it. It's time for us in Philadelphia to kill the can and for all 67 counties to eliminate the added advantage that we get from being on the top of a ballot, that ballot position gives us. Efficiency and fairness dictate that we move in this direction. Thank you, Mr. Chair.

MAJORITY CHAIRMAN MACKENZIE: Well, thank you,

Representative Solomon for that testimony. That was wonderful. I think you lucked out on two fronts. One, we are going to allow props at this Subcommittee hearing, even though that may not be allowed in other instances. And second, you know, I wasn't about to jump in and comment on the merits of your candidacy versus those of my goods Representative Ryan or Representative Keefer. We will leave that for discussion outside of a Subcommittee hearing. But really do appreciate your passion about the topic, and I know we have spoken about that.

I think we share an interest with Representative Rabb and some of the other members here about coming up with a better system that has more fairness built into it so that we aren't depending on these things that are very arbitrary in nature and shouldn't be a factor, and a potentially determining factors in the outcomes of elections. So I will close on that. If anybody else has any other comments or any --

REPRESENTATIVE KEEFER: Mr. Chairman, I would just like to say --

MAJORITY CHAIRMAN MACKENZIE: Representative Keefer, by all means.

REPRESENTATIVE KEEFER: Thank you, Mr. Chairman. I would just like to say, if $I$ were 10 th on the ballot, that would be quite impressive since I have not taken the
bar.
MAJORITY CHAIRMAN MACKENZIE: All right. Well, thank you to everybody for joining us. And as always, if anybody outside of the Committee hearing has any other information or testimony that they would like to provide, they can certainly provide that to me or a member of the State Government Committee staff. They can provide that to them, as well.

So again, I'd like to thank everybody for joining us for both of our hearings today. This concludes the second of our two hearings, and with that this meeting is adjourned. Thank you.
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