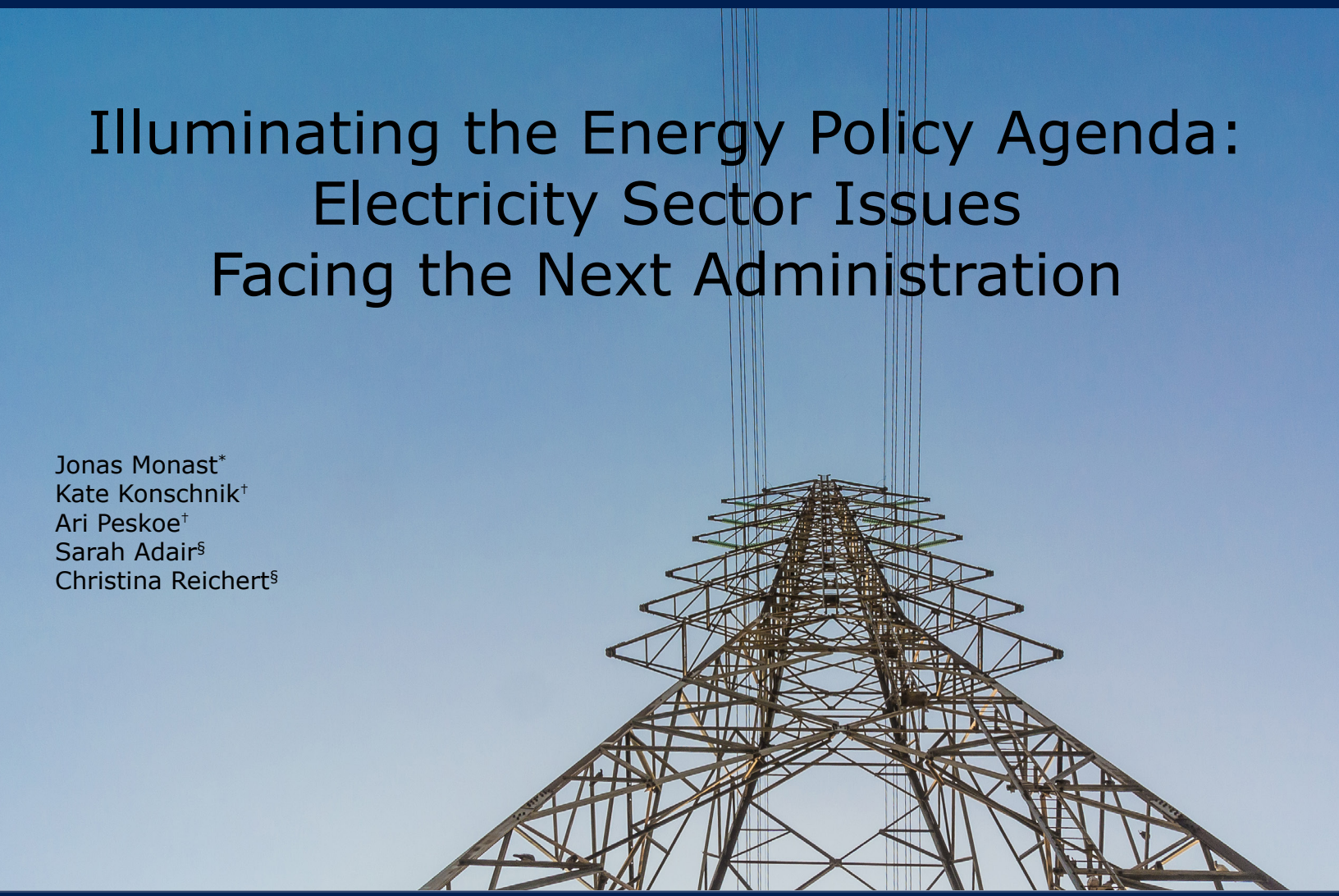
Illuminating the Energy Policy Agenda: Electricity Sector Issues Facing the Next Administration

Jonas Monast*
Kate Konschnik†
Ari Peskoe†
Sarah Adair§
Christina Reichert§



Part 2: Climate Policy

Duke NICHOLAS INSTITUTE FOR ENVIRONMENTAL POLICY SOLUTIONS
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CONTENTS

Affiliations
[*]University of North Carolina, Chapel Hill
[†]Harvard University
[§]Nicholas Institute for Environmental Policy Solutions, Duke University

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Review
The work reported in this publication benefited from review from experts in the field. The preliminary analysis was shared with external parties, and this publication reflects their feedback. However, this publication has not undergone a formal review process due to the timely nature of its contents.

SUMMARY

The next president will take office during a period of rapid market and regulatory change for the U.S. electricity sector. Due to statutory deadlines, pending lawsuits, and agency rulemakings—if not by choice—the next president will tackle energy policy. To prepare policy makers for what promises to be a dynamic period in electricity law and policy, this report provides an overview of six key areas of federal policy and, for each area, identifies the decision points—in time or circumstances—that will force the next administration to make choices that shape the future of the grid. For each decision point, the report explores the next president's options and the federal agencies and authorities that he or she could deploy.

Part 2 of this report describes the federal programs that address greenhouse gases under existing law, noting that reductions under these programs—including the EPA's Clean Power Plan—are modest compared with estimated reductions necessary to limit global warming. The next administration will face a number of near-term decisions as it determines whether and how to pursue a suite of federal regulations aimed at GHG emissions. Further, the next president may direct whether and how agencies consider climate effects, through the social cost of carbon, when creating regulations.

CLIMATE POLICY

At a Glance

Federal Actors: Environmental Protection Agency (EPA), U.S. Department of Energy (DOE), and the White House's Office of Management and Budget (OMB).

Appointments: The next president will appoint the heads of the EPA, DOE, and the OMB.

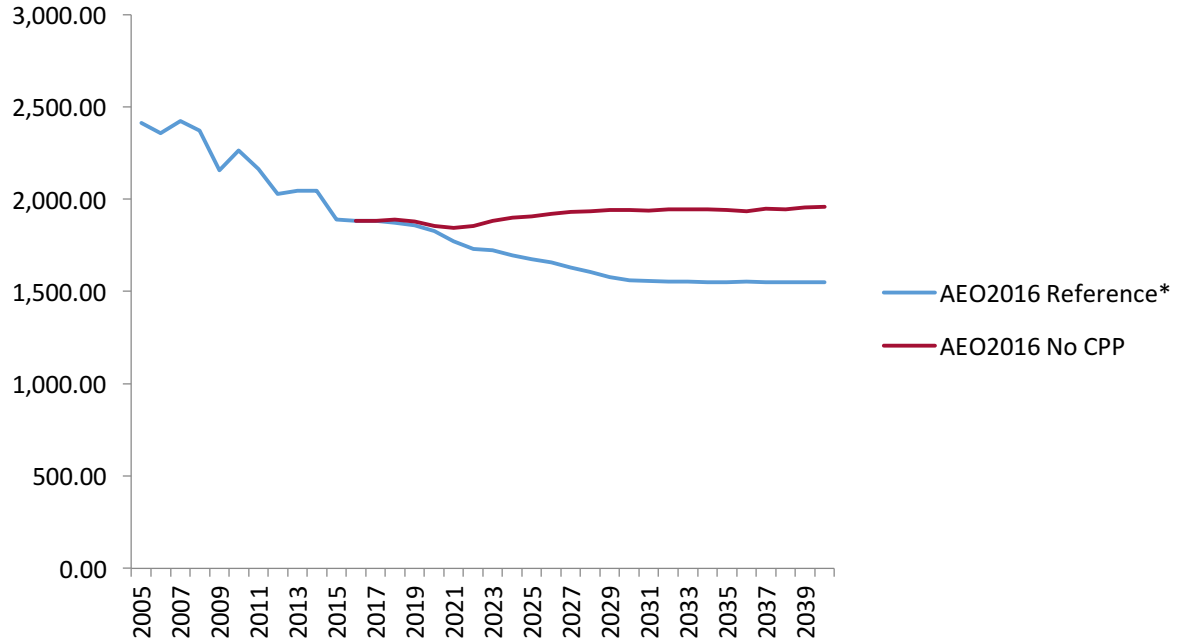
Legal Authorities: The Clean Air Act, Executive Order 12866.

Decision Points:

- Whether to seek Supreme Court review of any part of the D.C. Circuit's Clean Power Plan decision, and how to move forward following the court's review.
- Whether and how to regulate other sectors under Section 111(d) of the Clean Air Act.
- Whether and how to require additional emissions reductions necessary to meet the U.S. commitment to the Paris Agreement.
- Whether and how to use the social cost of carbon in agency rulemakings in light of recent circuit court decisions upholding its use.

The nation's greenhouse gas (GHG) emissions have declined significantly since the 2009 recession due to a combination of factors, including a shift from coal to natural gas electricity generation, advances in energy technologies, energy efficiency improvements, and environmental regulations that have pressured coal plants to retrofit or retire (e.g., mercury regulations). Even as Congress has declined to enact comprehensive climate policy, a number of federal programs address greenhouse gases under existing law, including emissions from the power sector. However, emissions reductions under these programs—including the EPA's Clean Power Plan—are modest compared with estimated emissions reductions necessary to limit global warming.[1] Thus, the next administration will face a number of near-term decisions as it determines whether and how to pursue a suite of federal regulations aimed at reducing GHG emissions.

Figure 2. Historical and projected U.S. carbon dioxide emissions from the electricity sector (in million metric tons)



Source: EIA, Annual Energy Outlook 2016.

*The AEO2016 Reference case assumes that states' Clean Power Plan implementation covers new and existing sources. The projected reductions compared to 2005 emissions equate to 740 million metric tons (mmts) per year by 2025, which is equal to 43% of the U.S. commitment to the Paris Agreement. Projected to 2040, the AEO2016 Reference case forecasts 865 mmts of emissions reductions compared to 2005 levels, equal to 16% of the U.S. commitment to reduce total annual emissions by approximately 5,344 mmts by 2050.

Background

The current federal approach to regulating GHG emissions began with the U.S. Supreme Court's 2007 decision in *Massachusetts v. EPA*, which found that greenhouse gases are pollutants subject to regulation under the Clean Air Act.[2] That conclusion required the EPA to determine whether greenhouse gases endanger public health and welfare. In 2009, the EPA made such a finding, which in turn required the agency to take steps to limit emissions.[3] Subsequent actions included emissions limits on motor vehicles, mandatory emissions reporting for large emitters, and permitting requirements for new and modified power plants and industrial facilities.[4] The EPA's 2015 Clean Power Plan marked another significant step by establishing the nation's first GHG emissions limits for the electric power sector.[5] Beyond the Clean Air Act, the Obama Administration has used other legal authorities to address climate change, such as the SEC's authority to mandate disclosure of climate risks for publicly traded companies and the DOE's authority to implement appliance efficiency standards.[6]

Domestic climate policy will also affect the next administration's approach to international relations. The United States pledged to reduce emissions as part of the Paris Agreement pursuant to the United National Framework Convention on Climate Change.[7] Additionally, in 2015, the United States and China—the world's two largest emitters of greenhouse gases—announced a series of bilateral measures to address climate change, including actions to reduce methane and hydrofluorocarbon emissions, implement vehicle and building efficiency standards, and cooperate on technology innovation. Cooperative efforts to address climate change have also been a major aspect of the U.S. relations with India.[8] In 2016, the United States also joined Canada and Mexico to announce a goal of 50% clean power generation by 2025.[9]

Decision Points

Clean Power Plan

The Clean Power Plan, developed pursuant to Section 111(d) of the Clean Air Act, establishes GHG emissions limits for the existing fleet of fossil fuel-fired power plants.[10] The EPA projects that the rule will reduce emissions from regulated plants approximately 30% from 2005 levels by 2030.

The EPA is defending the Clean Power Plan against legal challenges in the D.C. Circuit. On September 27, 2016, the full D.C. Circuit Court will hear oral arguments on the rule.[11] The court could issue a decision by early 2017. The most immediate climate policy decision likely facing the next president, therefore, will be whether to seek Supreme Court review of any part of the D.C. Circuit's Clean Power Plan decision. This decision will turn on the court's reasoning and final opinion, the likely makeup of the Supreme Court by the time it hears the case, and the next president's perspective on climate change and the merits of using the Clean Air Act to impose emissions limits. States and environmental organizations that intervened in support of the Clean Power Plan could also seek this review.

This paper does not seek to predict the outcome of the litigation. Notably, if the D.C. Circuit or Supreme Court vacates the Clean Power Plan or significantly restricts the EPA's authority under Section 111(d), the EPA would retain the authority to address GHG emissions using other sections of the Clean Air Act, such as sections 108–110 (National Ambient Air Quality Standards) and Section 115 (international air pollution).

Application of Section 111 to Additional Sectors

The Clean Power Plan potentially represents the first step in a sector-by-sector approach to regulating GHG emissions under the Clean Air Act. Environmental and public health groups may petition the EPA to create regulations for new and existing sources in additional sectors.[12] Thus, either by choice or in response to petitions from public interest organizations, the next administration may face questions of whether and how to proceed with respect to sectors such as refineries, chemical manufacturing, cement, pulp and paper, and other sectors.

If the next administration does proceed, the EPA may need to consider which sectors to address first, perhaps by considering each sector's cumulative GHG emissions, emissions reductions opportunities, and economic sensitivity to regulation.[13] When evaluating how to regulate additional sectors under Section 111(d), the next administration may also consider whether to use existing source categories as defined in current Section 111(b) rules or to redefine categories that could allow for broadened market-based compliance mechanisms.

Paris Agreement Next Steps

Decisions by the next administration concerning climate policy will affect international relations, given U.S. commitments in international agreements, such as the Paris Agreement described above. Pursuant to the Paris Agreement, the United States pledged to reduce emissions by 26% to 28% below its 2005 level in 2025 and to develop a 2030 emissions reduction goal in its intended nationally determined contribution (INDC).[14] The INDC identified the Clean Air Act, the Energy Policy Act, and the Energy Independence and Security Act as relevant to meeting this target, citing many of the above-described regulations. For the accord to take legal force, 55 signatories producing 55% of global emissions must ratify it.[15] In September 2016, the United States and China ratified their commitments, which together total almost

38% of global emissions.[16] However, existing regulations may not be sufficient to meet the Paris goal. Thus, in addition to the domestic pressures outlined above, the next administration may face international pressure to require further reductions pursuant to the country's commitment to develop a 2030 goal.

Social Cost of Carbon

The next administration may also face decisions regarding whether and how to incorporate the social cost of carbon into cost-benefit analyses conducted for agency rulemakings. Inclusion of this metric in cost-benefit analysis began in 2008, after the Ninth Circuit Court of Appeals held that the National Highway Transportation Safety Administration acted arbitrarily and capriciously when it failed to monetize the value of carbon emissions reduction when setting vehicle emissions standards.[17]

Following this decision, the Department of Energy (DOE), the Department of Transportation (DOT), and the EPA began using independently developed estimates for the social cost of carbon in rulemaking—estimates ranging from $0 to $159 per metric ton of carbon dioxide emitted.[18] To improve consistency, an Interagency Working Group selected four social cost of carbon values for use in regulatory analyses in 2010 and updated these values in 2013.[19] In 2015, the group charged the National Academies with reviewing the current modeling approach.[20] The National Academies expects to release its final report in January 2017.

In August 2016, the Seventh Circuit Court of Appeals upheld the DOE's use of the social cost of carbon in its analysis of energy efficiency standards for commercial refrigeration equipment.[21] Given the Seventh and Ninth Circuit cases, government agencies that do not include a social cost of carbon in cost-benefit analyses risk legal challenge. The next administration could choose to take this risk, or it might change the way the cost is calculated. For example, the next administration might alter the underlying assumptions previously used to estimate this cost, e.g., limiting the analysis to domestic rather than global costs.[22]

ENDNOTES

[1] *See, e.g.*, David Gelles, *To Achieve Paris Climate Goals, U.S. Will Need New Laws*, NY Times, Dec. 19, 2015, http://www.nytimes.com/2015/12/20/business/energy-environment/to-achieve-paris-climate-goals-us-will-need-new-laws.html?_r=0; Florence School of Regulation, *Obama's Clean Power Plan and the Paris Agreement*, Apr. 29, 2016, http://fsr.eui.eu/obamas-clean-power-plan-paris-agreement/; Douglas Halsey et al., White & Case, *The Effect of Challenges to the U.S. Clean Power Plan on the Paris Agreement*, Client Alert, Feb. 2016, http://www.whitecase.com/sites/whitecase/files/files/download/publications/alert-challenges-to-us-clean-power-plan-on-paris-climate-agreement.pdf.

[2] 549 U.S. 497 (2007).

[3] Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act; Final Rule, 74 Fed. Reg. 66,496 (Dec. 15, 2009).

[4] Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule, 75 Fed. Reg. 25,324 (May 7, 2010); Mandatory Reporting of Greenhouse Gases; Final Rule, 74 Fed. Reg. 56,260 (Oct. 30, 2009); Prevention of Significant Deterioration and Title V Permitting for Greenhouse Gases: Removal of Certain Vacated Elements, 80 Fed. Reg. 50,199 (Aug. 19, 2015).

[5] Carbon Pollution Emission Guidelines for Existing Stationary Sources; Electric Utility Generating Units; Final Rule, 80 Fed. Reg. 64,662 (Oct. 23, 2015).

[6] *Zero Zone, Inc. v. EPA*, nos. 14-2147, 14-2159, 14-2334 (7th Cir. Aug. 8, 2016).

[7] United States Cover Note and Accompanying Information, Intended Nationally Determined Contribution, UNFCCC, http://www4.unfccc.int/submissions/INDC/Published%20Documents/United%20States%20of%20America/1/U.S.%20Cover%20Note%20INDC%20and%20Accompanying%20Information.pdf [hereinafter U.S. Cover Note].

[8] *See, e.g.*, White House, *FACT SHEET: The United States and India – Moving Forward Together on Climate Change, Clean Energy, Energy Security, and the Environment*, June 7, 2016, https://www.whitehouse.gov/the-press-office/2016/06/07/fact-sheet-united-states-and-india-%E2%80%93-moving-forward-together-climate.

[9] White House, *North American Climate, Clean Energy, and Environmental Partnership Action Plan*, June 29, 2016, https://www.whitehouse.gov/the-press-office/2016/06/29/north-american-climate-clean-energy-and-environment-partnership-action (joining to achieve a goal of 50% clean power generation by 2025, through the use of renewable, nuclear, energy efficiency, and carbon capture and storage technologies).

[10] 80 Fed. Reg. 64,661 (Oct. 23, 2015).

[11] In May 2016, the D.C. Circuit opted to forgo the typical three-judge panel and move directly to an en banc hearing on the Clean Power Plan. The D.C. Circuit has a chief judge and 11 active judges. Chief Judge Garland has recused himself from all cases while he remains a nominee for the U.S. Supreme Court. The remaining active judges heard the case September 28, 2016.

[12] 42 U.S.C. § 7411(d)(1) ("The [EPA] shall prescribe regulations . . . for any existing source for any air pollutant . . . to which a standard of performance under this section would apply if such existing source were a new source.").

[13] For a discussion of the challenges and opportunities for regulating existing petroleum refineries under Section 111(d), see Allison Donnelly et al., *Regulating Greenhouse Gas Emissions under Section 111(d) of the Clean Air Act: Implications for Petroleum Refineries*, NI WP 14-05 (2014), https://nicholasinstitute.duke.edu/sites/default/files/publications/ni_wp_14-05_final.pdf.

[14] U.S. Cover Note, *supra* note 7.

[15] U.N. Framework Convention on Climate Change, *Paris Agreement—Status of Ratification*, http://unfccc.int/paris_agreement/items/9444.php (last visited Sept. 19, 2016).

[16] Paris Accord annex 1, U.N. Doc. FCCC/CP/2015/10 (Jan. 29, 2016).

[17] *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1203 (9th Cir. 2008).

[18] U.S. GAO, REGULATORY IMPACT ANALYSIS: DEVELOPMENT OF SOCIAL COST OF CARBON ESTIMATES 5 (2014); William Pizer et al., *Using and Improving the Social Cost of Carbon: Regular, Institutionalized Updating and Review are Essential*, 346 SCIENCE 1189 (2014).

[19] INTERAGENCY WORKING GROUP ON SOCIAL COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 (2010), https://www.whitehouse.gov/sites/default/files/omb/inforeg/for-agencies/Social-Cost-of-Carbon-for-RIA.pdf; INTERAGENCY WORKING GROUP ON SOCIAL COST OF CARBON, TECHNICAL SUPPORT DOCUMENT: TECHNICAL UPDATE OF THE SOCIAL COST OF CARBON FOR REGULATORY IMPACT ANALYSIS UNDER EXECUTIVE ORDER 12866 (2013), https://www.whitehouse.gov/sites/default/files/omb/inforeg/social_cost_of_carbon_for_ria_2013_update.pdf.

[20] *Assessing Approaches to Updating the Social Cost of Carbon*, THE NAT'L ACAD. OF SCI., ENG'G, AND MED., http://sites.nationalacademies.org/DBASSE/BECS/CurrentProjects/DBASSE_167526 (last visited Sept. 13, 2016).

[21] *Zero Zone, Inc., v. DOE*, 2016 U.S. App LEXIS 14541.

[22] Experts have suggested that the social cost of carbon requires regular review and revision when using in government policy-making. *See* Pizer et al., *supra* note 59, at 1189–90.

Nicholas Institute for Environmental Policy Solutions

The Nicholas Institute for Environmental Policy Solutions at Duke University is a nonpartisan institute founded in 2005 to help decision makers in government, the private sector, and the nonprofit community address critical environmental challenges. The Nicholas Institute responds to the demand for high-quality and timely data and acts as an "honest broker" in policy debates by convening and fostering open, ongoing dialogue between stakeholders on all sides of the issues and providing policy-relevant analysis based on academic research. The Nicholas Institute's leadership and staff leverage the broad expertise of Duke University as well as public and private partners worldwide. Since its inception, the Nicholas Institute has earned a distinguished reputation for its innovative approach to developing multilateral, nonpartisan, and economically viable solutions to pressing environmental challenges. www.nicholasinstitute.duke.edu

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Contact
Nicholas Institute, Duke University, P.O. Box 90335, Durham North Carolina 27708 • 919.613.8709 • nicholasinstitute@duke.edu • www.nicholasinstitute.duke.edu