

FIXING THE INFORMATION DEFICIT IN FEDERALISM

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Abstract: State laboratories are core features of a federalist system, but a necessary condition of experimentation is lacking. To successfully experiment toward better policies, states must have baseline information: they need to understand the laws and regulations that other jurisdictions have tried. Despite the endless stream of modern data, many states lack this seemingly simple information. The information deficit pervades technical policy areas in particular—those that do not follow uniform codes and require some expertise to understand.

Two types of baseline information are vital for experimentation. At the intrastate level, comprehensive yet accessible summaries of a state’s regulatory approach in a policy area are important. States produce this information in limited fields—drivers’ manuals with traffic regulations, for example—but often not in technical policy fields like oil and gas or healthcare regulation. From an interstate perspective, states also need comprehensive comparisons of other states’ approaches. Industry and trade associations produce both intra- and interstate data, but often only for themselves. Associations of states and nonprofit groups also conduct interstate regulatory comparisons, but not comprehensively.

The resulting information deficit limits the experimental upside of laboratories—the potentially efficient and innovative approaches that emerge from experimentation. It also expands their known downside: the costs to private actors of identifying and complying with fifty different standards. This Article explores this problematic feature of federalism and the public choice and political economy factors that seem to drive it. It argues that the federal government must work with institutions that have somewhat consistent funding and expertise, like universities and state agencies, to produce and synthesize regulatory information. The distance of the federal government from certain state public choice dynamics, which stifle local information production, will allow it to help solve the informational challenges that confound regulatory experimentation.

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INTRODUCTION

Policy experimentation in the laboratories of the states has long been a key feature of the federal system—and often a justification for it.¹ Indeed,

¹ *New State Ice Co. v. Liebmann*, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting); Akhil Reed Amar, 47 *VAND. L. REV.* 1229, 1233-36 (1994) (summarizing judges’ and justices’ praise of state experimentation); Heather K. Gerken, *Foreward: Federalism All the Way Down*, 124 *HARV. L. REV.* 4, 6, 47-48 (2010) (explaining that under traditional accounts, federalism “promotes choice, competition, participation, experimentation, and the diffusion of power” and that in Gerken’s alternative account, in which groups without sovereignty—often outsiders—participate in the federalist system and positively “feed back into national debates”); Larry Kramer, *Understanding Federalism*, 47 *VAND. L. REV.* 1485, 1499 (1994) (arguing that most claims about the benefits of federalism, including the argument that it allows for innovation, “remain valid today”); Michael W. McConnell, *Federalism: Evaluating the Founders’ Design*, 54 *U. CHI. L. REV.* 1484, 1484, 1493 (1987) (concluding that “decentralization allows for innovation and competition in

our, or at least the Supreme Court's, commitment to federalism seems increasingly strong.² The United States is embarking upon one of the largest regulatory experiments of our time as we rely primarily on states to control the risks of drilling and hydraulic fracturing for fossil fuels.³ We have also left largely to subfederal actors the enormous tasks of identifying successful ways to adapt to climate change,⁴ and to rapidly implement certain new federal healthcare requirements,⁵ among other policy goals. A major flaw remains in this system, however, which prevents successful regulatory experimentation. States sometimes lack basic information about what other states are trying policy-wise, and it takes legal and policy experts years to collect and synthesize this information. We have long known that states tend to not share policy *results*, but the fact that state officials have trouble identifying the mere *content* of policies is problematic from an experimentation perspective. A recent effort to compare states' regulations in one of these policy areas—the governance of the environmental impacts of oil and gas extraction—best reveals this flaw, which also pervades other fields.

government” and gives sub-federal entities “opportunities and incentives to pioneer useful changes” as compared to a “consolidated national government,” which is like a monopoly). *But see* Kramer, *supra* note 1 (arguing that the innovation and experimentation” justification for federalism is “of more recent vintage” and citing to Brandeis

² *See, e.g.*, Edward L. Rubin & Malcolm Feeley, *Federalism: Some Notes on National Neurosis*, 41 UCLA L. Rev. 903, 906 (1994) (“We Americans love federalism or, as the Court has called it, ‘Our Federalism.’” (quoting *Younger v. Harris*, 401 U.S. 37, 44 (1971)); *but see id.* at 908-09 (concluding that the Court misunderstands the meaning of federalism, and that our system is one of decentralization, not federalism).

³ *See, e.g.*, David B. Spence, *Federalism, Regulatory Lags, and the Political Economy of Energy Production*, 161 U. PA. L. REV. 431, 447 (2013) (noting that “the regulation of oil and natural gas exploration and production in the United States has always been primarily a state matter”).

⁴ *See, e.g.*, State and Local Adaptation Plans, Georgetown Climate Ctr., <http://www.georgetownclimate.org/node/3325>; Hari M. Osofsky, *Suburban Climate Change Efforts*, 22 CORNELL J.L. & PUB. POLY. 395 (2012); *but see* Executive Order—Preparing the United States for the Impacts of Climate Change, Nov. 1, 2013; Progress Report of the Interagency Climate Change Adaptation Task Force, Federal Actions for a Climate Resilient Nation (Oct. 28, 2011) (showing federal efforts)

⁵ *See, e.g.*, Abbe R. Gluck, *Intrastatutory Federalism and Statutory Interpretation: State Implementation of Federal Law in Health Reform and Beyond*, 121 YALE L.J. 534, 539-40 (2011) (noting that “[s]ome parts of the ACA are unequivocally designed around a presumption favoring state implementation” and that the statute “posits concurrent regulation by the states and the lead federal administrative agency”); Scott L. Greer, *The States’ Role Under the Patient Protection and Affordable Care Act*, 36 J. HEALTH POLITICS, POLICY AND LAW 469, 470 (2011) (noting that “because the ACA relies on offering private insurance options through state-level exchanges, states are given the daunting task of creating exchanges, developing contracts with private plans, and reviewing the “reasonableness” of premium rate increases”).

In 2011, a bipartisan think tank initiated an ambitious effort to describe how states regulate drilling and hydraulic fracturing for natural gas in shales—an industry that has recently transformed the American economy. Economists, a research assistant, a lawyer, and, later, a law professor, collected, analyzed, and compared the regulations. They examined how states require operators to construct oil and gas wells, store waste in pits, dispose of drilling and fracturing materials, and limit air emissions, among many other regulatory subcategories, and compared the regulations to determine how and why they differed.⁶ Together, these and many other subcategories make up the field of oil and gas regulation, which addresses the impacts of drilling and hydraulic fracturing. Despite these individuals’ familiarity with the area, the effort of locating and accurately summarizing and comparing the regulations was time consuming.

In just one regulatory subcategory, such as the construction and lining (“casing”) of the well, state regulations come in many forms. Some states have performance standards (“casing must be adequate”), whereas others specify the type of material that must be used to construct and line the well, or how far below groundwater the protective lining must extend. Even within one state, some of these regulations are located in oil and gas codes,⁷ and others are found in the state’s environmental⁸ or land use rules.⁹ Furthermore, two or more state agencies typically have partial jurisdiction over oil and gas development, and private standards¹⁰ and local regulations also apply.¹¹ The scattered nature of the regulations, the different types of approaches states take to the same issue (such as casing), and the technical nature of some of the regulations transformed the seemingly simple effort of identifying and comparing regulations into a herculean task.

⁶ See Nathan Richardson et al., Resources for the Future, The State of State Shale Gas Regulations (2013), http://www.rff.org/rff/documents/RFF-Rpt-StateofStateRegs_Report.pdf.

⁷ See generally 16 Tex. Admin. Code § 3.1-3.107 (Railroad Commn. of Tex., Oil and Gas Div.) (providing many of the oil and gas regulations).

⁸ See, e.g., Tex. Commn. on Env’tl. Quality, Air Quality Std. Permit for Oil and Gas Handling and Production Facilities, http://www.tceq.texas.gov/permitting/air/newsourcereview/chemical/oil_and_gas_sp.html.

⁹ See, e.g., Tex. Local Govt. Code Ann. § 253.005(c) (providing that wells must be 200 feet from buildings)

¹⁰ See, e.g., American Petroleum Institute, Overview of Industry Guidance/Best Practices on Hydraulic Fracturing, http://www.api.org/~media/Files/Policy/Exploration/Hydraulic_Fracturing_InfoSheet.pdf.

¹¹ See, e.g., City of Fort Worth, Ordinance No. 18449-02-2009 § 15-36, available at http://fortworthtexas.gov/uploadedFiles/Gas_Wells/090120_gas_drilling_final.pdf (requiring that wells be set back 600 feet from buildings).

Under the right circumstances,¹² states (or municipalities¹³ or stakeholder groups¹⁴) learning from each other's successes and mistakes can generate more effective and efficient policy approaches¹⁵ and vindicate different groups' preferences for governance.¹⁶ As many scholars have recognized, though, certain conditions must be in place for state laboratories to generate these benefits. Policymakers and agency staff must be willing to experiment with potentially better rules despite their aversion to risk¹⁷—mere copying of other approaches will not create better policies or more accountability to individuals. There is another necessary condition, however, that the literature has largely ignored. To successfully experiment toward better policies, states must have good information about the laws, regulations, or other measures that other jurisdictions have tried (broadly described here as “policy approaches”).¹⁸ From this information baseline,

¹² Experimentation by subfederal entities is not always beneficial from a social welfare or efficiency perspective. See *infra* text accompanying notes 39-40.

¹³ See, e.g., McConnell, *supra* note 1, at 1498-99 (praising “competition among communities,” not just states); Richard Briffault, “What About the ‘Ism’?” *Normative and Formal Concerns in Contemporary Federalism*, 47 VAND. L. REV. 1303, 1315 (1994) (noting that if states promote experimentation and other values associated with federalism, “these values ought to be far more effectively advanced by the empowerment of the far larger number of much smaller local governments”).

¹⁴ See Heather Gerken, *Federalism All the Way Down*, 124 HARV. L. REV. 4 (2010) (discussing how groups without sovereignty are still important players in a federalist system).

¹⁵ Amar, *supra* note 1, at 1234 (noting that under the “experimentation” camp of federalism, “federalism permits pragmatic testing of novel policy proposals”); Richard Revesz, *Rehabilitating Interstate Competition: Rethinking the “Race to the Bottom” Rationale for Environmental Regulation*, 67 N.Y.U. L. REV. 1210 (1992) (arguing that state regulation is efficient); Cf. McConnell, *supra* note 1, at 1499 (concluding that “[c]ompetition among communities is . . . likely to result in superior education (as well as more cost-effective ways of providing it)”).

¹⁶ Amar, *supra* note 1, at 1234 (noting that according to federalists who focus on experimentation, “federalism operates to edify and engage the citizenry”); Gregory v. Ashcroft, 501 U.S. 452, 458 (1991) (concluding that federalism “assures a decentralized government that will be more sensitive to the diverse needs of a heterogenous society”); McConnell, *supra* note 1, at 1493 (concluding that “decentralized decision making is better able to reflect the diversity of interests and preferences of individuals in different parts of the nation”).

¹⁷ See Susan Rose-Ackerman, *Risk Taking and Reelection: Does Federalism Promote Innovation?*, 9 J. LEGAL STUDIES 593 (1980).

¹⁸ See, e.g., Jack L. Walker, *The Diffusion of Innovations Among the American States*, 63 AM. POLI. SCI. REV. 880, 897 (1969) (“Before states may respond to new programs adopted in other states their political leaders must be aware of these developments, so interstate communications are an important factor in the process of diffusion.”) States must also, of course, have a range of other “scientific, economic, and technical” data that is essential but is not explored in detail here, and they must make important decisions about how to use and distribute this information. See & Douglas A. Kysar & James Salzman, *Foreword:*

states then must identify the results of these approaches—which policies and implementation strategies worked or failed and why¹⁹—and adapt accordingly.

The legal literature has thoroughly explored the reluctance of states to share information about the results (particularly their policy failures), and the difficulty of generating the scientific evidence needed to support good regulation,²⁰ whether at the state or federal level.²¹ But in the post-Internet world of abundant information production and sharing, we typically assume that data about the substance of existing policy approaches is easily obtained.²² The process of gathering information about state approaches to a particular problem appears to be a straightforward, if often tedious, task. The public, after all, has nearly instantaneous electronic access to the most recent text of regulations and statutes, and states and municipalities regularly share their varied policy approaches through meetings of national

Making Sense of Information for Environmental Protection, 86 Tex. L. Rev. 1347, 1348 (2008).

¹⁹ See, e.g., David A. Dana, *State Brownfields Programs as Laboratories of Democracy?*, 14 N.Y.U. ENVTL. L. J. 86, 97 (2005) (arguing that a true laboratory of the states requires “measurement of a pre-experiment baseline for each test group with regard to variables of concern,” “measurement of experimental outcomes for each test group,” and “a common metric among measured outcomes” that allows for meaningful comparison).

²⁰ Wendy E. Wagner, *Commons Ignorance: The Failure of Environmental Law to Produce Needed Information on Health and the Environment*, 53 DUKE L.J. 1619 (2004).

²¹ See *supra* note 19.

²² Cf. Daniel Esty, *Environmental Protection in the Information Age*, 79 N.Y.U. L. Rev. 115 (2004) (expressing optimism about the power of monitoring technologies and the internet in producing more information about policy results and compliance).

associations of legislators,²³ agency heads,²⁴ or mayors,²⁵ or through online groups and reports.²⁶

Nonetheless, it is often possible to die of thirst in this sea of information. As shown by the oil and gas example, detailed, comprehensive information about the substance of subfederal policy approaches is frequently not available in a useful or readily understandable form. This is particularly so in technical policy areas for which we generally rely on state and local or private governance. By technical, I mean areas of the law that involve relatively complex regulated activities that are not addressed within a single portion of a state code, and are often governed by multiple state agencies. These activities require very specialized knowledge, unlike fields that tend to rely on the common law and model codes. Bureaucrats in other states, nonprofit groups, academics, and industry often lack the incentives, resources, or full expertise to locate the law governing the activity in each state, and even if they do find it, they often cannot understand it without an appreciation of the larger legal or regulatory framework, which requires a substantial time commitment. States might even not fully understand their own²⁷ and other states'

²³ See, e.g., Natl. Conference of State Legislatures, State Lawmakers Have Much to Share, Learn at NCSL Legislative Summit, <http://www.ncsl.org/press-room/legislative-summit-2013.aspx> (“Legislators will learn from experts and each other about solutions to the most pressing issues facing states during more than 100 sessions on topics ranging from criminal justice and education to taxes and transportation.”). See also Walker, *supra* note 18, at 897-98 (noting that “specialized systems of communication among the states have grown up during the last thirty years, mainly through the creation of professional associations among state administrators”).

²⁴ See, e.g., 2011 Ground Water Protection Council Annual Forum, Preliminary Agenda, Sept. 26, 2011, <http://www.gwpc.org/sites/default/files/files/Agenda.pdf> (describing an annual meeting of the Ground Water Protection Council, a 501(c)(6) group of state environmental and oil and gas staff that gathers to discuss regulatory approaches and suggest changes, among other goals)

²⁵ See, e.g., U.S. Mayor, 81st Annual Meeting Preview, Las Vegas, June 21-24, 2013, Mayors to Focus on Infrastructure, Jobs, Municipal Bonds, Immigration Reform, Public Safety, Other Key Priorities, http://www.usmayors.org/usmayornewspaper/documents/06_17_13/061713USMayor.pdf.

²⁶ See, e.g., Jacquelyn Pless, National Conference of State Legislatures, Natural Gas Development and Hydraulic Fracturing: A Policymaker’s Guide (2012), http://www.ncsl.org/documents/energy/frackingguide_060512.pdf (comparing legislative approaches and explaining recent legislative trends).

²⁷ See, e.g., KATE KONSCHNIK, MARGARET HOLDEN, & ALEXA SHASTEEN, HARVARD LAW SCHOOL ENVIRONMENTAL LAW PROGRAM POLICY INITIATIVE, LEGAL FRACTURES IN CHEMICAL DISCLOSURES LAWS: WHY THE VOLUNTARY CHEMICAL DISCLOSURE REGISTRY FRACFOCUS FAILS AS A REGULATORY COMPLIANCE TOOL (Apr. 23, 2013) (describing how a Colorado official was unaware of a Colorado oil and gas regulation, which provided that if a public-private database for disclosing hydraulic fracturing chemicals was not

regulatory baselines in somewhat less technical areas, such as restaurant licensing, educational policy, or limits on wetlands development.

This information deficit in federalism both impedes the benefits of federalism and raises its costs. It limits the experimental upside of laboratories—the efficient, effective, and innovative approaches that can emerge from experimentation—and expands the known downside of federalism: the costs to private actors of identifying and ensuring compliance with fifty different standards. Without information about the regulations and statutes in place in other states, state policymakers lack a necessary foundation from which to experiment. And industry actors deciding whether to move into a new state face high costs of searching for and complying with varied regulations. When policies are difficult to identify and understand, these barriers are amplified. And these costs do not fall on industry alone. Advocacy groups have to learn fifty or more different, relatively inaccessible standards to monitor industry compliance and serve the role of citizen attorneys general.²⁸

Two distinct data problems drive the gaping information deficit in federalism. First, at the intrastate level, states generally do not consistently produce user friendly collections of their technical policies. One might expect that states have strong incentives to inform constituents of the law and lower the costs of entry for out-of-state businesses. But summarizing technical policy from a variety of statutes, codes, and court decisions is time consuming and difficult, and state actors may lack the resources, expertise, or incentives to do this. Furthermore, incumbent industries that have captured state agencies might discourage states from providing easy access to regulatory information: these industries have already incurred the search costs of identifying various compliance requirements and have no interest in attracting competition.

There are substantial interstate information barriers as well. Even if states provide useful syntheses of their policies in technical areas, someone must take on the rather mundane yet time-consuming task of comparing fifty policies in a useful way—mapping how each state addresses each stage of a regulated activity or each risk associated with it, for example. This presents serious collective action problems: no single state would gain from publishing the information even if it collected it; others would quickly free ride. Similarly, although trade associations and law firms sometimes

searchable by chemical by a certain date, the state would provide an alternative database through which companies would have to disclose chemical data).

²⁸ If we think that the level of industrial activity is too high, the solution is not to obscure various state standards—this simply makes industrial activity less efficient and raises costs for consumers. A better solution to incentivizing an optimal level of activity would be to produce clear standards that controlled risks and to ensure compliance with these standards.

overcome this problem within an industry, they have few incentives to share the information with competing groups or other state regulatory agencies. Associations of states and groups of state agency heads often produce useful comparisons of laws and regulation and make these documents publicly accessible,²⁹ but these comparisons often fail to provide the level of detail needed for real experimentation from a baseline, and they sometimes cover only the hottest policy areas, whereas states need comprehensive comparative information in a number of regulatory contexts. Finally, nonprofit groups often compare state policies to highlight state leaders and laggards and to encourage policy reform, but their resources are limited, and their donors might prioritize direct action, such as lobbying, over informational reports. And even nonprofit groups that overcome these barriers might only publish select information, even if not purposefully, based on their policy priorities.

The best, and perhaps only, hope for a solution to this problem lies in a collaborative effort led by the federal government. The federal government faces substantial resource barriers and, in the wake of the Affordable Care Act website debacle, is clearly not always the best entity to build the structures through which information is shared. But the government has the expertise needed to direct a federal-state-university collaboration, in which federal actors should initiate, influence, and direct efforts by state, academic, nonprofit, and industry-based entities to produce and compare regulatory information. Further, federal agencies at the request of legislators also collect and analyze state-based regulatory information.³⁰ In the renewable energy context, the government also funds a university project called the Database of State Incentives for Renewables and Energy Efficiency (DSIRE). This database describes in detail each state's (and many municipalities') laws enabling and encouraging renewable energy and energy efficiency; it includes the content of laws and maps them comparatively.³¹

The role of the federal government in providing better information for subfederal laboratories is not just a matter of capacity and resources. The government is well-positioned to lead the information collection and synthesization efforts of states and other groups because it is more distant from the stakeholders trying to persuade subfederal entities to adopt a

²⁹ See *infra* notes 71, 96, 117-119.

³⁰ See, e.g., U.S. GOVT. ACCOUNTABILITY OFFICE, K-12 EDUCATION: STATES' TEST SECURITY POLICIES AND PROCEDURES VARIED at 2, May 16, 2013, <http://www.gao.gov/assets/660/654721.pdf> (examining "the extent to which states' policies and procedures include leading practices to prevent testing irregularities," and conducting a 50-state survey).

³¹ See *infra* note 124.

particularly lax or stringent policy or to possibly obscure certain information in an effort to discourage certain policies from being adopted. The unique capacity of the federal government and these public choice dynamics suggest a central role for it in solving the informational challenges that continue to confound regulatory experimentation in some policy areas.

This Article frames the information deficit as a key impediment to effective regulatory experimentation, explains why and how it arises, and proposes a federal-state, public-private solution. Part I introduces the need for information, defining regulatory experimentation and its aims and explaining why information is vital to these aims. Part II identifies the problem, explaining the intra- and interstate information deficiencies in four policy areas. This Part analyzes the likely reasons for these gaps, focusing on the disincentives that might prevent states, industry groups, and nonprofits from producing adequate information. Part III then explores the impacts of the problem, analyzing how the information deficit causes blind experimentation, raises search and compliance costs for regulated actors, and makes it more difficult for concerned stakeholders to monitor compliance. Part IV then proposes a remedy, suggesting that the federal government, working with subfederal actors, will best overcome the collective action, bias, and resource-based barriers that impede effective collection and production of information by other entities.

I. THE ESSENTIAL ROLE OF INFORMATION IN EXPERIMENTATION

The paths of federalism have been thoroughly trod by legal scholars and courts. Judges and academics offer up a range of values that are enhanced by subfederal authority, with liberty, accountability,³² and checks on federal authority chief among them.³³ Edward Rubin and Malcolm Feeley, on the other hand, argue that there are no inherent values of federalism. Rather, this country has long relied on “decentralization,” which is a “managerial,” not a value-laden, concept.³⁴ The United States might have a centralized goal of growing wheat, for example, but discover that “growing conditions are crucial and that these vary markedly from place to place,” thus calling for a decentralization of regulation that would

³² Rubin & Feeley, *supra* note 2, at 915 (describing the “public participation” argument for federalism); DAVID L. SHAPIRO, *FEDERALISM: A DIALOGUE* 91-92 (1995).

³³ See, e.g., Jessica Bulman-Pozen, *Federalism as a Safeguard of the Separation of Powers*, 112 COLUM. L. REV. 459 (2012).

³⁴ Rubin & Feeley, *supra* note 2, at 910.

“enabl[e] farm administrators to adapt to the differing conditions of each region.”³⁵ Questions of pure federalism, on the other hand, would be relevant if one region insisted on growing no wheat at all, thus subverting the national policy, and instead allowing the operation of factories. Only here would the federal government have to decide whether to give subfederal actors exclusive rights to not grow wheat—a power into which the federal government could not intrude.³⁶

One factor—policy experimentation by subfederal entities—partially unifies the value-driven federalism camps and those for which decentralized authority is merely a functional good. Whether one views federalism as enhancing liberty and the accountability of governments to the governed, or decentralization as allowing for effective implementation of national policies, experimentation can potentially support all of these goals. Experimentation as defined here involves different actors trying different policy approaches, including writing and implementing public-private standards, legislation, or regulation, or a combination of these. If these entities merely copied each other, then they would not effectively tailor centralized policy goals to novel local conditions. They would fail at meeting the functional goals of Rubin and Feeley’s decentralization. Nor would they be more accountable or fair, as many federalism scholars hope they would be. But raw experimentation without any knowledge of other approaches—with subfederal entities grasping blindly at possible solutions—will also fail to meet various federalism and decentralization goals. Subfederal entities need some idea of what has been tried before to govern more effectively or in a more accountable or fair manner. This Part describes experimentation, explores the values and justifications behind it, and the areas in which policy experimentation is likely to be most effective. It then explores four areas in which broad experimentation is occurring, the actors involved in this experimentation, and the mechanics of laboratories in these four areas.

A. DEFINING AND VALUING EXPERIMENTATION

1. Areas in Which Experimentation Works

Experimentation as used in this Article entails subfederal actors trying out different policy approaches above a baseline of knowledge. But this experimentation can be a means toward two very different ends. First, for pure “federalism,” in which subfederal actors choose a policy goal like growing wheat or not, experimentation is toward a very broad end.

³⁵ *Id.* at 912.

³⁶ *Id.* at 912-13.

Subfederal actors must choose the goal and the best means of implementing it, and experimentation allows them to borrow from and adapt other jurisdictions' goals and implementation approaches. State officials will be centrally concerned about the demands of their own constituencies, but individuals might share policy opinions across state lines, and officials will therefore want to know how and why other states have defined their policy goal in a particular way (grow wheat, grow some wheat in limited regions, or grow no wheat, for example).³⁷ They will also seek information on how these states implemented this goal by limiting wheat production to non-industrial areas, for example, placing a high property tax on wheat fields, or requiring municipalities to allow wheat growing in all zones.

Second, under Rubin and Feeley's decentralized regime, subfederal laboratories have more limited ends. A centralized government will have provided their goal—to grow more wheat, for example—and decentralization “gives the states an opportunity to experiment with different programs” to achieve this goal.³⁸

Experimentation, whether to identify varied goals or varied means of implementing a shared goal, is not a universal good. Certain subfederal goals simply are not permitted by the Constitution, and others are unwise or inapplicable. If we have determined at the federal level that a certain cap on total air pollution is necessary to save a certain number of human lives in a cost-effective manner,³⁹ then subfederal goals are irrelevant. We need experimentation toward implementation, at most. And if we know that a newly-discovered air pollutant instantaneously kills millions of people, and there is a cheap and easily accessible technology that would stop 99% of emissions of this pollutant, experimentation toward implementation might also be unnecessary. There could still be experimentation on the edges—states might decide to directly install the technology on factories, for example, to ensure quick compliance, or to allow industry to install the technology and provide proof that they have done so. Alternatively, some states might simply ban emissions of the pollutant and leave industry to

³⁷ Rubin & Feeley, *supra* note 2, at 112 (providing the wheat example). Rubin and Feeley do not believe that experimentation towards goals is relevant or realistic, however. *Id.* at 924 (arguing that the account of sub-units experimenting with different programs is “not particularly relevant to sub-units whose goals are different from each other” and, to highlight this point, asking “precisely what experiment one would design to tell the French Canadians whether they should retain their language”). Susan Rose-Ackerman also suggested that experimentation rarely occurs except in situations of cooperative federalism, where the centralized goal is set. *Supra* note 17.

³⁸ Rubin & Feeley, *supra* note 2, at 923.

³⁹ See 42 U.S.C. 7409 (requiring the establishment of national ambient air quality standards that protect public health).

figure out whether shutting down, installing technology, or using different fuel inputs was the most efficient means of meeting this ban.

Experimentation toward varied goals in a policy area—whether to allow oil or gas drilling or wheat growing, for example—should only occur 1) when no federal constitutional provisions mandate a centralized goal; 2) when different goals will produce few spillover effects beyond the boundaries of the governing entity;⁴⁰ 3) and when it appears that subfederal entities competing towards different goals will not engage in a negative race to the bottom, wherein nationally we are worse off as a result of jurisdictions individually competing to attract levels of industrial development that are collectively problematic.⁴¹ We also should prohibit experimentation toward different policy goals when a strong national interest supersedes the subfederal policies, although this is a dangerously loose category.⁴² And finally, where a policy question requires unusually detailed technical and scientific knowledge—such as how the electric wires in a building should be grounded—a centralized body likely should provide the answer, allowing for limited variation to account for local circumstances.⁴³

The same prohibitions on experimentation also apply to experimentation in implementing a centralized policy: if different types of state, local, or private programs aimed toward reaching a centralized goal would create spillover effects or a race to the bottom or would ultimately subvert the national goal, then centralized implementation, or heavily supervised uniform implementation at the subfederal level, might be needed. This may seem counterintuitive—if decentralized entities will collectively reach a national goal then it seems that we would want to broadly encourage experimentation in implementation. But there are limits here. If one state decided that it could meet a federally-mandated national air quality goal by allowing very large quantities of emissions in the short

⁴⁰ See, e.g., Stewart, *supra* note 46, at 1215 (noting that “spillover impacts of decisions in one jurisdiction on well-being in other jurisdictions generate conflicts and welfare losses not easily remedied under a decentralized regime”); cf. Daniel A. Farber, *Environmental Federalism in a Global Economy*, 83 VA. L. REV. 1283, 1301-03 (noting both environmental and economic spillovers, but arguing that “[a]t best, environmental spillovers provide only a partial justification for much existing multijurisdictional regulation”); Samuel Issacharoff & Catherine M. Sharkey, *Backdoor Federalization*, 53 U.C.L.A. L. Rev. 1353, 1355 (2006) (noting situations “when the experiments of democracy within one state’s borders have spillover effects that adversely affect citizens of other states”).

⁴¹ See *infra* note **Error! Bookmark not defined.**

⁴² See, e.g., Spence, *supra* note 3 (describing the national interest justification for federal jurisdiction).

⁴³ This is how municipalities or states typically implement technical provisions like electrical codes. They incorporate international

term—emissions that all quickly traveled to downwind states—and later ratcheting down emissions, this would likely be an unacceptable experiment.⁴⁴ Where detailed technical knowledge provides a centralized policy goal, however, some experimentation with implementation might be relevant. Although an international public-private body provides electrical and building code standards, for example, localized groups hear appeals from those standards where they fail to fully apply to a particular climate, for example.

2. Justifications for Experimentation

According to some versions of federalism, distributed authority in areas amenable to experimentation can make governments more accountable to the electorate and allow for more citizen participation in government: smaller governments can better understand and address certain groups' preferences.⁴⁵ As part of their responsiveness, these governments could avoid certain forms of capture, as individuals closer to the process might be more likely to notice and address undue influence by powerful entities.⁴⁶ Further, even relatively disorganized stakeholders can offer a competing voice at the local level, thus providing a counterweight to interests that benefit from revolving-door relationships with agency staff and policymakers. Second, to the extent that certain individuals remain dissatisfied with subfederal policy, they can vote with their feet.⁴⁷ Although some individuals are not highly mobile, and feet voting signals are mixed and sometimes confused with other factors that drive mobility, large-scale migration into or out of a jurisdiction can send a meaningful message to governments, thus forcing them to respond to voter preferences. Enabling the creation of a variety of policy options allows voters to locate

⁴⁴ Indeed, Congress attempted to prohibit this form of experiment through the “good neighbor” provision of the Clean Air Act, although states have repeatedly ignored this provision, leading to multiple lawsuits and attempted federal fixes. *Michigan v. EPA*, *North Carolina v. EPA*.

⁴⁵ *Supra* note 32.

⁴⁶ Cf. Richard B. Stewart, *Pyramids of Sacrifice? Problems of Federalism in Mandating State Implementation of National Environmental Policy*, 86 *YALE L.J.* 1196, 1213, 1215 (1977) (in the environmental context, noting that “intense local environmental concerns may be able to generate a critical mass for effective representation at the local level; if the ultimate decision is made in Washington, the costs of effective representation will rise and the local commitment to influence that decision may wane,” but concluding that “[t]he comparative disadvantage of environmental groups [in the political process] will often be reduced . . . if policy decisions are made at the national level”).

⁴⁷ Charles M. Tiebout, *A Pure Theory of Local Expenditures*, 64 *J. POL. ECON.* 416, 418 (1956); Revesz, *supra* note 15, at 1246 (worrying that “if all regulatory programs are federalized, states still will be able to compete through their fiscal powers”).

the policies that work best for them. Further, subfederal governance can serve as an important check on federal authority,⁴⁸ and it supports a number of other values identified in an extensive federalism literature. And finally, from Rubin and Feeley’s perspective, even if we threw out all of these values, decentralized authority can simply enable effective policy—it allows local governments to implement centralized, shared goals.

Experimentation is often described as an independent justification for federalism.⁴⁹ Yet experimentation is a tool that can, if used properly, support various values or goals of federalism and decentralization. In independently governing, subfederal entities might generate “better” policy on a variety of metrics. Governments could be accountable without engaging in any experimentation: they could simply respond to the demands of their electorate and ignore other policy approaches. But as a result of the government’s willingness to blindly experiment, the electorate might not know of the many, possibly superior policy options available, and constituents might ultimately demand policy that they dislike. Subfederal governments might be better off suggesting a menu of policy options—including variations of policy options tried by other jurisdictions—and allowing stakeholders to voice opinions about these options, or exit if they disliked them. Looking to other jurisdictions’ policies would not make the government less accountable to the people; rather, it could increase accountability by educating the electorate, encouraging more participation through the provision of a manageable and understandable suite of policy options.

B. AREAS OF EXPERIMENTATION

Regardless of the normative evils or perils of subfederal experimentation, it is widespread. The reserved powers of the states include broad police powers, which encompass the protection of public health, safety, and welfare: state and local governments regulate the types of activities and buildings allowed within particular zones, inspect public establishments like restaurants and hotels for health and safety purposes, and govern a range of other activities that might create a nuisance, harm consumers, or merely offend certain aesthetic preferences. States and counties arrest, convict, and imprison far more individuals than does the

⁴⁸ Bulman-Pozen, *supra* note 33.

⁴⁹ Rubin & Feeley, *supra* note 2, at 923 (arguing that experimentation “supports only managerial decentralization,” not federalism, but noting the “instrumental argument” that “federalism gives the states an opportunity to experiment with different programs”).

federal government.⁵⁰ States also dictate the terms of corporation formation and dissolution, regulate the insurance industry, and, along with local governments, drive education policy. Whether through express statutory language or permissive legislative silence, constitutional provisions, or mere tradition, subfederal entities shape the most fundamental of human values and preferences.

This Article uses four examples of subfederal governance—oil and gas, climate adaptation, clean energy policy, and health insurance—to highlight why information matters in federalism. A number of other potential case studies are equally relevant. I select these limited areas because they appear to be changing relatively quickly—thus demonstrating the rapidity and, in some cases, chaos of experimentation—and they share several common themes. All are relatively technical, in that they require some specialized knowledge of science, technology, or finance. Fields like state criminal law, on the other hand, although highly complex and often difficult to understand, might be more quickly mastered by anyone with a law degree—or even inmates with plenty of research time on their hands. The subfederal policies described here also tend to not follow uniform codes, and they differ substantially among jurisdictions, thus making it more difficult for officials to quickly identify, understand, and learn from other approaches. Further, the law in these areas is often found within many different state or local codes or industry standards and tends to be administered by several different agencies or organizations, thus further complicating efforts by agency staff, elected officials, industry, and nonprofit groups to understand the law.

These case studies highlight the two types of experimentation introduced above, including experimentation toward different goals or toward effective implementation strategies for a centralized goal. In the realm of oil and gas development, we have left private entities and state and local governments wide berth in determining whether, when, and where to allow this development, as well as how to implement the few federal policies that apply to it. We have largely done the same for electricity generation—allowing states to choose the best mix of generation resources and to decide whether we should aim to construct “cleaner” resources with fewer pollutants, including renewable resources. For climate adaptation, too, the United States has yet to identify a full suite of centralized goals, although this is changing. This leaves to subfederal entities the enormous task of deciding which goals to prioritize—protecting coastal populations and reducing fatalities from heat waves and insect-borne diseases, for

⁵⁰ E. ANN CARLSON & DANIELA GOLINELLI, BUREAU OF JUSTICE STATISTICS, U.S. DEPT. OF JUSTICE, PRISONERS IN 2012--ADVANCE COUNTS AT 3, <http://www.bjs.gov/content/pub/pdf/p12ac.pdf>.

example—and how to best implement these goals. Thus, in oil and gas, climate adaptation, and “clean energy” contexts, we largely allow subfederal entities to experiment toward both goals and implementation.

In health care policy, the federal government has established a centralized goal, dictating who must receive coverage for what conditions, for example.⁵¹ But it has given the states somewhat wide berth in deciding how to design healthcare access and implement these conditions. If these and other ambitious experiments are to continue, we must make the experiment as effective as possible while also assessing whether it is a good idea in the first place. In light of political realities, this Article focuses on the former task of improving experimentation—exploring how we can make subfederal laboratories more effective, efficient, and just by improving access to information about policy approaches.⁵²

1. Oil and Gas

Since Colonel Titus first struck oil in Pennsylvania in the 1800s, states have retained nearly complete authority over the development of oil and gas.⁵³ Early regulations focused on preventing basic nuisances—some states limited the amount of gas that could be burned off (“flared”) over producing wells, for example.⁵⁴ States also began to control the volume of oil and gas that could be produced in order to ensure that it was efficiently withdrawn from reservoirs.⁵⁵ More recently, they have implemented some environmental regulations, requiring that oil and gas wastes be stored in lined pits, for example, and that wells be lined with adequate steel “casing” and cement.⁵⁶ Some states have left most nuisance-prevention and control of environmental impacts to municipalities.⁵⁷

⁵¹ See *infra* note 71 and accompanying text.

⁵² My intent is not, however, to discount the need to extensively assess the value of federalism in these areas, as many scholars already have done. See, e.g., Spence, *supra* note 3, at 507-08 (proposing local control over most aspects of shale gas development); Lincoln L. Davies, *Power Forward: The Argument for a National RPS*, 42 CONN. L. REV. (2010).

⁵³ See *supra* note 3.

⁵⁴ See Ground Water Protection Council, *State Oil and Natural Gas Regulations Designed to Protect Water Resources at 12-14* (2009), http://www.gwpc.org/sites/default/files/state_oil_and_gas_regulations_designed_to_protect_water_resources_0.pdf (in a document authored by a 501(c)(6) organization comprised of state agency members, describing the history of oil and gas regulation).

⁵⁵ See *supra* note 54.

⁵⁶ See Hannah Wiseman, *Risk and Response in Fracturing Policy*, 84 U. COLO. L. REV. 729 (2013) (exploring state regulations and their strengths and deficiencies).

⁵⁷ Texas, for example, has relatively lax environmental regulations from the perspective of managing waste pits, requiring setbacks of wells from natural resources, and requiring

State oil and gas policies are complex, technical, and highly varied. As introduced above, some states have specific performance standards for the casing that lines wells, requiring certain types of metal and cement; others have narrative requirements, simply mandating “adequate” casing, for example. Oil and gas laws are also found in pieces, scattered throughout states’ land use, environmental, and natural resources codes, and administered in part by oil and gas, natural resources, or environmental agencies. Industry standards play a large role, too: state regulations sometimes require operators to follow American Petroleum Institute Guidelines, for example.⁵⁸

As federal environmental laws began to expand in the late 1970s, some federal control of oil and gas development emerged. Oil and gas operators, like other industries, may not harm an endangered or threatened species absent permission from the Fish and Wildlife Service, for example.⁵⁹ With limited exceptions, the Clean Water Act prevents operators from dumping wastes directly into surface waters,⁶⁰ and they must limit certain emissions from hydraulically fractured wells under the Clean Air Act.⁶¹ But the majority of responsibility for preventing and mitigating environmental and social impacts of well development remains at the state level, in part due to several major federal statutory exemptions. The Environmental Protection Agency in 1988 excluded most oil and gas wastes—even those that have hazardous or toxic qualities—from federal hazardous waste regulation.⁶² And in 2005, Congress confirmed a stance that the EPA had long held, declaring the hydraulic fracturing of oil and gas was not subject to the Safe Drinking Water Act.⁶³ This means that operators need not prove to the EPA or a state agency that fracturing will

protective casing. *See* Wiseman, *supra* note 56. It has allowed municipalities to write relatively extensive regulations, however, with setbacks, requirements for the use of tanks to contain wastes, prohibitions on the pollution of water, and mandates for environmental liability insurance, among other requirements. *See* City of Fort Worth, Tex. Ordinance No. 18449-02-2009; City of Arlington, Tex. Ordinance No. 07-074 § 6.01.

⁵⁸ *See, e.g.*, MD. CODE REGS. 26.19.01.10(P) (requiring API Class A cement for casing); NY REVISED SGEIS (proposing to require API Spec. 10A cementing method).

⁵⁹ 16 U.S.C. § 1538(a).

⁶⁰ 40 C.F.R. §§ 435.30, 435.50, 435.52.

⁶¹ Env'tl. Protection Agency, Oil and Natural Gas Sector: New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants Reviews, Final Rule, Apr. 17, 2012, <http://www.epa.gov/airquality/oilandgas/pdfs/20120417finalrule.pdf>.

⁶² Regulatory Determination for Oil and Gas and Geothermal Exploration, Development and Production Rates, 53 Fed. Reg. 25446, 25446 (July 6, 1988), <http://epa.gov/osw/nonhaz/industrial/special/oil/og88wp.pdf>.

⁶³ Energy Policy Act of 2005, Pub. L. No. 109-58, § 1(a), 119 Stat. 594 (2005); 42 U.S.C. § 300h (d)(1).

not endanger underground sources of drinking water.⁶⁴ The states, operating beneath these federal exclusions and exemptions and exerting their historic jurisdiction over oil and gas, play a central role in regulating this development.

2. Climate Adaptation

As with oil and gas development, states, municipalities, and public-private groups are engaging in a fast-moving experiment involving the goals and implementation of climate adaptation policy, which requires anticipation of and response to the impacts of climate change. And even more so than oil and gas, these policies address multiple activities and risks, from managing public lands in anticipation of changing weather patterns to constructing seawalls, buying up coastal property, limiting the spread of West Nile virus, or strengthening electric transmission lines to resist storm damage. The problem of climate change is so “massive,”⁶⁵ in fact, that the areas of policy involved in policy adaptation are nearly endless: they include health, social, economic, land use, and environmental issues, among many others. It also requires experts in multiple areas. Those searching existing policies in other states and municipalities must have some familiarity with the broad range of complicated scientific questions (such as how to prevent West Nile virus) and federal and state law (such as transmission line hardening and maintenance and the allocation of costs among customers).⁶⁶

The federal government has done little to mitigate climate change or implement policies that ensure the resilience of human populations to climate impacts. This is changing: some federal agencies now consider climate impacts in reviewing and permitting a range of projects,⁶⁷ and President Obama recently issued an executive order on climate

⁶⁴ 42 U.S.C. § 300h.

⁶⁵ J.B. Ruhl & James Salzman, *Climate Change, Dead Zones, and Massive Problems in the Administrative State: A Guide for Whittling Away*, 98 CALIF. L. REV. 59 (2010).

⁶⁶ The North American Electric Reliability Corporation, overseen by FERC, writes detailed rules for the reliability of electricity generation and distribution, including rules about the maintenance of transmission lines. In traditionally regulated states, state public utility or service commissions regulate the costs that utilities may recover from customers, including, for example, the costs of trimming vegetation and maintaining transmission lines.

⁶⁷ Columbia Climate Law Center, *Analysis of Environmental Impact Statements Shows Widely Varying Treatment of Climate Change Risks*, <http://blogs.law.columbia.edu/climatechange/2011/12/05/analysis-of-environmental-impact-statements-shows-widely-varying-treatment-of-climate-change-risks/>.

preparedness.⁶⁸ Despite discrete and piecemeal federal efforts, the bulk of responsibility rests with state and local governments.

3. Clean Energy Policy

A third example of extensive state and local experimentation towards both policy goals and implementation involves government inducement of “clean” energy practices that emit fewer pollutants than fossil sources—reducing energy consumption through energy efficiency programs, changing the timing of energy consumption to avoid the need for dirtier back-up plants during peak demand, and requiring the construction of renewable and low-carbon generation. To continue the theme of the other examples in this Article, this is a policy area that addresses numerous activities. Even taking one of are of clean energy policy—requiring or incentivizing the construction of renewable energy, for example—involves multiple considerations. Should a government require that a percentage of total electricity consumed be produced from renewable generation, for example, or a total quantity? (Requiring a percentage of electricity consumed might result in less renewable generation, particularly during recessions, when electricity use is relatively low.) How many years should the government allow for utilities to install the needed amount of renewable generation? What types of generation should count as renewable—hydroelectricity, or just solar and wind, for example?

States and local policies have a wide variety of answers to these questions, and the federal government does little to influence state and local clean energy policy. Congress in 2005 attempted to give the Department of Energy and the Federal Energy Regulatory Commission the power to require the siting of transmission lines in areas with inadequate transmission service. This could have at least indirectly supported transmission for renewable energy projects, but federal courts have largely gutted this provision.⁶⁹

4. Health Insurance

The Patient Protection and Affordable Care Act of 2010 forced a major regulatory experiment among the states. This experiment lies more squarely in the experimentation toward implementation realm, as the federal government has clearly defined the goal: states must offer accessible, affordable health insurance options through exchanges, and if they fail to do

⁶⁸ See *supra* note 4.

⁶⁹ *Piedmont Envtl. Council v. Fed. Energy Regulatory Comm’n*, 558 F.3d 304, 313 (4th Cir. 2009); *California Wilderness Coalition v. DOE*, 631 F.3d 1072 (9th Cir. 2011).

so, they must rely on the federal program.⁷⁰ Although experimentation is more limited here than in oil and gas, climate adaptation, and clean energy policy, the states retain substantial responsibility. The Act provides uniform guidance for states to follow, but it leaves states the flexibility to enact a wide range of policy approaches to health reforms. Under the Act, States must create and operate exchanges that meet various federal standards for coverage⁷¹ or default to a federal exchange.⁷² States that elect to form their own exchanges must adopt various federal standards for coverage or enact their own standards that implement the federal requirements.⁷³ This requires careful state attention to whether plans offered through the exchanges meet various requirements and offer the necessary coverage.

C. WHO EXPERIMENTS

When the federal government devolves authority to subfederal entities, whether for healthcare policy or oil and gas regulation, a range of subfederal actors become responsible for governance. These actors sometimes have explicit roles, as shown by the examples above and additional ones: through partial delegation of authority under cooperative federalism, for example, a federal agency often directs the states to implement a federal standard. Under the Clean Air Act, state environmental agencies must write State Implementation Plans that assure that federal air quality standards will be met, and these plans must contain certain specific elements and be approved by the Environmental Protection Agency.

⁷⁰ See, e.g., Gluck, *supra* note 5, at 577 (comparing the ACA to the Clean Air Act and other statutes involving cooperative federalism, in which the federal government provides standards and the states implement them, although describing cooperative federalism as involving complex “intrastatutory federalism”).

⁷¹ 42 U.S.C. § 18031(b) (“Each State shall, not later than January 1, 2014, establish an American Health Benefit Exchange”); 42 U.S.C. § 18031(d) (requiring exchanges to “make available qualified health plans to qualified individuals and qualified employers”); 42 U.S.C. § 18022 (requiring plans to cover “[a]mbulatory patient services,” “[e]mergency services,” “[h]ospitalization,” “[m]aternity and newborn care,” “[m]ental health and substance use disorder services,” “[p]rescription drugs,” “[r]ehabilitative and habilitative devices and services,” “[l]aboratory services,” “[p]reventive and wellness services and chronic disease management,” and “[p]ediatric services”). See also Natl. Conference of State Legislatures, State Actions to Address Health Insurance Exchanges, <http://www.ncsl.org/issues-research/health/state-actions-to-implement-the-health-benefit.aspx>.

⁷² 42 U.S.C. § 18041 (allowing states to elect to prescribe standards for establishing health care exchanges and “the offering of qualified health plans through such exchanges”) and requiring states who have elected this option to either “adopt and have in effect” federal standards or state laws deemed that federal standards.

⁷³ *Id.*

Similarly, states wishing to implement the federal Clean Water Act and Safe Drinking Water Act must have their permitting and enforcement programs approved by the EPA.

In other cases, the federal government fully delegates authority to states or other actors but specifies who is responsible for administering a program, and how they should do so. When the Environmental Protection Agency exempted oil and gas wastes from federal hazardous waste regulation, it noted some gaps in state regulation.⁷⁴ But rather than relying solely on states to improve their governance of oil and gas wastes, it instructed a private-public entity—the Interstate Oil and Gas Conservation Commission—to examine these gaps and suggest how they could be filled. The IOGCC’s members include both state governors and industry representatives appointed by governors, and the IOGCC has since transferred its responsibilities to the State Review of Oil and Natural Gas Regulations.⁷⁵ STRONGER, too, is a public-private group, consisting of state agency officials, environmental nonprofit group representatives, and industry representatives. This organization writes standards for the content of oil and gas regulations and compares state regulatory programs to these standards, suggesting areas for improvement. This program is wholly voluntary—states need not agree to be reviewed by STRONGER, and they sometimes do not accept its suggestions for improvement.⁷⁶ Yet despite the informal nature the EPA, at least for now, believes that this non-traditional form of governance is adequate.

As shown by the STRONGER example, federal directives sometimes cause an array of subfederal actors—not just state governments—to engage in regulatory experiments. Miriam Seifter notes an even starker example of this type of public-private devolution, in which Congress directed the association of state insurance commissioners to agree upon and draft standards for health insurance implementation.⁷⁷ The federal government retained meaningful control here—providing that a federal agency would ultimately approve the standards—but left most of the

⁷⁴ Regulatory Determination for Oil and Gas and Geothermal Exploration, Development and Production Rates, 53 Fed. Reg. 25446, 25446 (July 6, 1988), <http://epa.gov/osw/nonhaz/industrial/special/oil/og88wp.pdf>.

⁷⁵ See STRONGER, Our History, <http://www.strongerinc.org/content/council-regulatory-needs>.

⁷⁶ See, e.g., STRONGER Louisiana Hydraulic Fracturing State Review (March 2011), http://www.shalegas.energy.gov/resources/071311_stronger__louisiana_hfreview.pdf (proposing a range of regulatory changes); Louisiana Register October 2011, <http://www.doa.louisiana.gov/osr/reg/1110/1110.pdf> (implementing only a chemical disclosure requirement).

⁷⁷ Miriam Seifter, *States as Interest Groups in the Administrative Process*, VA. L. REV. at 20-21 (forthcoming 2014).

work of rule writing to a private association comprised of public official members.⁷⁸

Finally, local governments have an increasingly important role in some policy areas explored here. Many states lack comprehensive climate adaptation plans, leaving municipalities to decide how and when to limit coastal development, build sea walls, and update building codes in anticipation of more storm damage, among other efforts. And although states have primary responsibility for regulating oil and gas development, some have left much of this authority to cities and towns. In Texas and New Mexico, for example, many cities and towns have boards designed solely to review and grant or deny oil and gas permits, and they have lengthy rules relating to environmental protection and nuisance prevention.⁷⁹

Thus, as scholars of all stripes of federalism—horizontal, vertical, iterative, and polyphonic—have long recognized, a complex network of actors governs subfederally. Although one entity might have the most authority in a given area, industry, local governments, states, or regional governments often substantially influence policy in an area. Sometimes they work together, whereas in other cases they conflict. In all cases, they need information about policy approaches, which they often lack.

D. THE MECHANICS OF EXPERIMENTATION

When judges and scholars refer to the laboratories of the states, they often envision different things. Under one model of laboratory mechanics, states or other entities operate relatively independently, generating creative policy ideas on their own. A second camp points to the diffusion of ideas, in which states borrow, copy, and learn from each other and create diverse although sometimes similar policies. Several other iterations rest between these two visions, with varying assumptions about the extent to which subfederal governments operate on their own or engage in a more collective yet diffuse experiment.⁸⁰

In his famous dissent lauding state laboratories in the 1930s, Justice Brandeis seemed to envision bubbles of independent experiments, in which a state like Oklahoma could decide to regulate its ice delivery industry or

⁷⁸ *Id.*

⁷⁹ *See supra* note 57.

⁸⁰ *See, e.g.,* Virginia Gray, *Innovation in the States: A Diffusion Study*, 67 *Am. Pol. Sci. Rev.* 1174, 1174 (1973) (noting that although “[a]n innovation is generally defined as an idea perceived as new by an individual,” in which “the perception takes place after invention of the idea,” in some political science studies, “an innovation is more specifically defined as a law which is new to a state adopting it”). This suggests that an idea could diffuse from another state into a second state and still count as an innovation.

not—and how to regulate it—without harming citizens of other states. “It is one of the happy incidents of the federal system that a single courageous state may, if its citizens choose, serve as a laboratory; and try novel social and economic experiments without risk to the rest of the country,” he observed.⁸¹ The words “single” and “courageous” seem to connote pioneering entities going it alone, developing their own regulations from a blank slate, or at least bucking the norm.

As discussed in more detail in Part III, Susan Rose-Ackerman, in her widely-cited criticism of experimentation, also defined experimentation more as an independent endeavor than a collective one, although she recognized that experimentation also required some degree of sharing and learning from other governments’ mistakes.⁸² Arguing that experimentation often does not take place, she noted the many incentives that tend to impede creative and courageous subfederal endeavors. Officials seeking re-election are typically better off if they follow the status quo. Although risking an innovative policy could have high payoffs if successful, it also could have disastrous consequences.⁸³

In a more optimistic account of one form of regulatory experimentation, Andrew Karch and others point to rampant policy diffusion.⁸⁴ Although diffusion of policy is not experimentation, exactly, the diffusion described by Karch is not rote copying of other jurisdictions’ approaches. Rather, states borrow and learn from each other in a variety of ways. Academics advocate for certain better policies in a variety of states, as do interest groups. Although national interest groups often attempt to sell identical language within state or local referenda, officials might tailor this language to their own conditions, either independently or with the help of the interest group. Associations of state officials also meet frequently and share ideas, sometimes copying each other’s policies but often tailoring them to their own needs.⁸⁵

“Good” subfederal experimentation—an effort that led to policy results that would be more effective, efficient, and just than the current policy baseline—would seem to require a hybrid of independent and

⁸¹ *New State Ice Co. v. Liebmann* (1932).

⁸² *See* Rose-Ackerman, *supra* note 17, xx pincites to be added.

⁸³ *Id.*, pincites to be added.

⁸⁴ Andrew Karch, *DEMOCRATIC LABORATORIES: POLICY DIFFUSION AMONG THE AMERICAN STATES* (2007); Walker, *supra* note 18, at 898 (noting a system that “links together the centers of research and generation of new ideas, national associations of professional administrators, interest groups, and voluntary associations of all kinds into an increasingly complex network which connects the pioneering states with the more parochial ones”).

⁸⁵ *Id.* xx pincites to be added; *see also supra* note 84 (providing an earlier description of diffusion and innovation).

diffusionist visions. To create policies that achieve a desired result and are thus effective, while doing so in the most cost effective and equitable manner possible, subfederal entities must tailor policies to local conditions and preferences. This tailoring requires creativity and innovation, yet it also demands baseline knowledge.

Take two states with the same goal of preventing surface oil and gas pollution from entering shallow surface water. State A might require energy companies to place an expensive plastic liner beneath all of their operations, thus preventing surface pollution from seeping into the groundwater. State B might learn of this approach but worry about its expense. Alternatively, constituents in State B might oppose regulations that specify certain technologies or practices that industries must follow. This state could instead prohibit drilling over shallow groundwater, requiring energy companies to find alternative surface locations. Officials in State B might surmise that the geographical restriction is far cheaper than the technological one—the tarp requirement—and would likely create less pollution. Plastic liners can tear or dissolve when subjected to certain pollution, while wells that are located far from groundwater are less likely to cause contamination.

This experiment would of course be far more effective if States A and B—and 48 others—knew the results of each regulation. Data on violations of state water laws at well sites, the amount and type of groundwater pollution that occurred, and the actual expense of installing a liner or selecting an alternative well location would better inform agencies about the best types of regulations and the changes needed to meet local conditions. But mere knowledge of the substantive policies tried is an essential first step, and one that is often ignored. Although Karch points to many examples of policy diffusion, wherein interest groups or state agencies share particular policy language,⁸⁶ it appears that comprehensive and constructive sharing of policy approaches does not happen at the level needed to support truly informed experimentation in a policy area.

II. THE INFORMATION DEFICIT

To effectively experiment toward better policies, subfederal entities need a baseline of information: they must understand what other actors have tried. To understand subfederal policy approaches in an area like oil and gas, health insurance, clean energy policy, or climate adaptation, these entities must know the many regulations, statutes, and, in some cases,

⁸⁶ Karch, *supra* note 61.

industry standards that apply to the regulated activity.⁸⁷ They also must be familiar with the several agencies or public-private groups that often have a hand in governing this activity. This requires copious information collection and synthesis at the intrastate level: subfederal actors need detailed and comprehensive summaries of the statutes and regulations in a given field within each state, yet few entities have adequate incentives to take on this task. Even if these groups are incentivized to collect and synthesize reams of information within the state, various biases might influence the resulting summary document: those who want more stringent policy might tend to focus only on the strictest aspects of the state's policy approach, for example. And if industry groups produce these summaries for themselves, or hire a law firm to take on this tedious task, they are unlikely to share the information.

Even if states, nonprofits, or industry groups generously provided concise yet comprehensive summaries of each state's law within a technical area (which they sometimes fail to do), a second task would be necessary. For states to efficiently and effectively regulate, they must know what other states have already tried. They need comprehensive comparisons of each state's approach to a particular area organized in an understandable format like a spreadsheet, table, or a set of maps comparing various aspects of a policy in each state. Yet resource constraints and collective action problems often disincentivize the production of detailed, understandable interstate regulatory summaries in the subfederal policy areas discussed in this Article.

A. INTRASTATE TECHNICAL INFORMATION

Those who remember their first drivers' education test might recall a helpful booklet distributed in the class leading up to the test: a state-written drivers' manual summarizing the state's traffic laws, with pictures of signs and symbols and descriptions of their meanings. One might expect that states and other subfederal entities prepare similar summaries for a number of other fields—particularly those that are technical and require some degree of learning by constituents if they are to fully and properly comply with the laws.⁸⁸ Indeed, these summaries exist in a limited number of areas,

⁸⁷ In a world of costless information, people would also need to know the most recent court interpretations of these statutes and regulations.

⁸⁸ While traffic regulation is somewhat technical, it pales in comparison to more complex areas that require quite specialized knowledge, such as the array of policies needed to effectively adapt to climate change or control the risks associated with oil and gas development. There is of course a spectrum here—we might define any field as technical, but the more a field applies to only specialized actors and not society as a whole (oil and gas drilling or fracturing companies or plumbers, for example), or addresses a particularly

in part to inform incoming industry of rules. Pennsylvania and Kentucky have oil and gas operators' manuals that describe in detail their rules that apply to oil and gas operations and permits that are required; these manuals are available online.⁸⁹ Other states have more limited information, like lists of forms that operators must fill out in order to get permits and links to those forms.⁹⁰ And in the area of renewable energy policy, a university, in partnership with the federal government, provides detailed explanations of each state's energy efficiency requirements and renewable portfolio standards.⁹¹ But the number of policy or regulatory manuals summarizing subfederal governance in a particular field, for each state, seems surprisingly low.

Several factors likely constrain the production and distribution of information about an individual state's policy in a particular field. Limited resources are likely a primary culprit. Agency officials are busy writing and modifying the regulations, responding to public comments, and enforcing the rules once they are finalized. State agencies are most likely to summarize policies for regulatory areas in which they want to prioritize enforcement and they are concerned that regulated entities may be unaware of or confused about rules. Incentives for summarizing policies therefore might be the highest in policy areas where the regulated activity is rapidly changing, new industry actors are entering the state, and new regulations are emerging (as is occurring with oil and gas, for example, and health insurance). But these very conditions overwhelm agencies, and agency officials responding to various stakeholder demands are likely to prioritize the drafting and enforcement of new regulations over writing up regulatory summaries and publicizing them.

The seemingly low level of production of intrastate policy information might also arise from public choice dynamics. In a state like North Dakota, where the oil industry has grown astronomically in recent years due to hydraulic fracturing in shales,⁹² agency officials face certain

difficult policy areas with many unknowns—such as climate change—the more that field overlaps with my rough definition of “technical policy” described here. *But see, cf.*, Kysar & Salzman, *supra* note 18, at 1358 (noting that federal agencies sometimes “package information for broader public consumption”).

⁸⁹ Penn. Dept. of Env'tl. Protection, Oil & Gas Operators' Manual, <http://www.elibrary.dep.state.pa.us/dsweb/View/Collection-8295>.

⁹⁰ *See, e.g.*, Railroad Comm'n. of Tex., Oil & Gas Checklist from Prospect to Production, <http://www.rrc.state.tx.us/forms/forms/og/checklist.php>; Kansas Corporation Commission, Oil & Gas Conservation Div. Forms, <http://www.kcc.state.ks.us/conservation/forms/>.

⁹¹ *See, e.g.*, Database of State Incentives for Renewables & Efficiency, Connecticut, Incentives/Policies for Renewables & Efficiency, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CT04R.

⁹² *Bakken Helps North Dakota Surpass Oil Production Record*, BILLINGS GAZETTE, Nov. 25, 2011, available at <http://billingsgazette.com/news/state-and-regional/montana/bakken->

familiar motivations. Officials are most beholden to incumbent industries—those that have built the state economy and have developed long-term relationships with agency officials. Through these long-term relationships—meetings to discuss officials’ enforcement of a rule or denial of a permit, or to oppose the language proposed within a new rule, for example—industry officials have learned the ropes. They are familiar with the complicated terminology of the technical regulation, they can rattle off a seemingly endless list of acronyms, and they know the many areas of the code in which the regulation is located. These incumbent actors, who have already invested extensive resources in learning this complex regulatory area and how to comply with its rules, seem to have every incentive to prevent agencies from giving future competitors easier access to this area. They might vocally oppose an agency’s effort to provide a concise summary of the regulation, suggesting that the agency was prioritizing the wrong tasks and should be focusing on streamlining rules and enforcement procedures to support the industry.

Finally, even if a state agency, as they sometimes do, wrote a concise and understandable oil and gas manual summarizing the numerous applicable regulations, statutes and court decisions, the manual might not be comprehensive or accurate. Agency actors, who have sometimes foregone more lucrative industry opportunities to pursue a public career, reap non-monetary rewards of service by establishing a good reputation and, perhaps, power: to the public, they may want to appear as environmental heroes, persuading skeptical individuals that they have written and are consistently enforcing good regulations. To regulated industries, they likely want to be viewed as reasonable and fair individuals who recognize the difficulties and costs of complying with a complex regulatory scheme. These motivations could negatively influence a document that was supposed to comprehensively, concisely, and accurately summarize the law, causing the manual writer to downplay or omit certain regulatory elements and emphasize others. Agencies captured by industry actors might generally favor lax enforcement of any existing policies, thus further disincentivizing production of regulatory summaries.

Incumbent industry actors and their law firms⁹³ are likely similarly disincentivized from producing these types of concise intrastate summaries

helsp-north-dakota-surpass-oil-production-record/article_fa857924-1788-11e1-902a-001cc4c03286.html.

⁹³ *But see* Thomas E. Kurth et al., Haynes and Boone, *The Law and Jurisprudence of Hydraulic Fracturing* (2012), http://www.haynesboone.com/files/Uploads/Documents/Attorney%20Publications/CURRENT_RMMLF%20Fracing%202012%20Paper_Formatted.pdf (providing some regulatory summaries and a description of which agencies govern in oil and gas states).

for anyone but themselves, and incoming industry actors—who desperately need this information—will produce it only for their own benefit. Distributing the information would give competitors an advantage, and at no cost to the competitor. While physical equipment, property rights, and labor tend to be the dominant costs in the energy industry, the burdens of keeping up with rapidly changing law, understanding its nuances, and complying with it are also significant. Thus, as a company like Chesapeake Energy, which is headquartered in Oklahoma,⁹⁴ sends trucks and rigs to Pennsylvania to begin drilling and fracturing for natural gas, it might hire a large law firm or ask its in-house counsel to produce a concise yet comprehensive summary of the many relevant regulations. But it would likely share this information only with close associates—contractors or subsidiaries, for example. An industry trade association could potentially overcome the barriers to information sharing among energy companies, but this would still leave state officials and the public in the dark.

Nonprofit groups, too, have a strong incentive to understand the policies within each state, but they also face free riding concerns. Although they are in the business of producing public goods, they create them based on the guidance of donors, and donors want particular results. If the Pennsylvania office of the Sierra Club took on the time consuming task of collecting all of the regulations and summarizing and publishing them, it would be a first mover in producing a public product. It would bear all of the costs of research and production, and everyone else would free ride, reaping only the benefits. Nonprofit groups with adequate funding and strong incentives to improve policy will still be willing to act: by divulging the gaps within a complex regulatory field, they might hope to encourage others to lobby for better regulation. After all, the mission of nonprofit groups is often to do just this—to generate information and make arguments that individual stakeholders would not bother to pursue. But nonprofits, too, are shrewd business actors: they want to keep certain issues as their own and are not always willing to share political successes with other groups. If they cannot claim to have been the driving force behind an improved hydraulic fracturing policy, for example, they might lose important donors who prefer lobbying or other activities for which direct results can be quantified.

Nonprofit groups that are sufficiently well-funded and motivated to collect, synthesize, and share information about state policies might produce, even if inadvertently, biased information. They might search for and publish only relatively weak environmental regulations, for example, to suggest that the state law was inadequately protective of human health and

⁹⁴ Chesapeake Energy, Chesapeake's Oklahoma City Campus, <http://www.chk.com/About/Campus/Pages/Information.aspx>.

the environment. Or they might mischaracterize the law in their summaries of it, again to suggest the need for more or better regulation.

Despite these many hurdles to the production of fifty sets of intrastate information, some efforts have begun to emerge in this area, as explored in Part I.C. But this information is woefully inadequate from the perspective of informing experimentation and enabling compliance with state laws.

B. INTERSTATE COMPARISONS

Imagine a world in which state agencies, industry actors, or nonprofit groups have overcome various disincentives and have produced comprehensive summaries of regulation in a given technical area for each of the fifty states. Suppose that each state has a drilling and hydraulic fracturing manual that describes how deep well casing must be, the required strength of the cement surrounding the well casing, wildlife and water quality surveys that must be conducted before drilling, required thicknesses of pit liners, limits on air pollutants from drilling and fracturing rigs, and so on.

Even in this hypothetical world, synthesizing and comparing this information within an interstate document would not be an easy task. A group attempting a fifty-state summary would have to determine how to most usefully compare laws—by the stage of activity they addressed, for example, or the risk they controlled. And once the fields of comparison were identified, the group would have to figure out how each state had addressed that field—often using different terms or different types of regulations. In the area of well casing, for example, some states provide a numeric mandate, requiring that the casing be 30 feet below the lowest groundwater to prevent gas or oil flowing through the well from leaking into the groundwater. Others provide only a narrative standard, requiring that casing be “adequate” or “sufficient” to prevent groundwater contamination.⁹⁵

In addition to these substantive hurdles, the disincentives to produce interstate information are the same as those described in the intrastate context, except amplified. A group preparing and publishing a fifty-state survey bears additional costs due to the sheer number of regulations to

⁹⁵ See, e.g., N.D. Admin. Code 43-02-03-21 (requiring casing “at sufficient depths to adequately protect and isolate all formations containing water, oil, or gas or any combination of these”); N.M. CODE R. § 19.15.16.10 (requiring casing “[a]s may be necessary to effectively seal off and isolate all water-, oil- and gas-bearing strata”); 16 TEX. ADMIN. CODE § 3.13 (requiring operators to “[s]et and cement sufficient surface casing to protect all usable-quality water strata”).

prepare and reaps none of the benefits. Given, publicity and praise at a national level might adequately compensate a first mover, but these non-monetary benefits might overwhelm the high costs of preparing the document.

Despite the higher costs associated with synthesizing and reporting information from 50 states, some groups might be strongly motivated to produce this type of report, as indicated by the Resources for the Future example in the introduction. Academic institutions and nonprofit stakeholder groups with particular preferences for “good” regulation might best influence legislation and regulatory decisions by providing concise yet thorough comparisons of policy approaches and suggesting those that a state or municipality should adopt. Even those institutions that do not seek a particular result but may deem certain factors of regulation to be more important than others and focus on these.

Regulatory officials and legislators, too, might want to know the panoply of other jurisdictions’ in order to justify proposed text of a code or statute (“twenty other states already follow a similar policy”). Groups of state policymakers and agency officials also might be so new to a particular area of experimentation—or this area may be changing so quickly—that they prioritize an information collection effort. Indeed, the National Conference of State Legislatures has begun to collect and disseminate information about states’ policy approaches to the Affordable Care Act⁹⁶ and hydraulic fracturing risks,⁹⁷ among other policy challenges.

The NCSL and nonprofit and academic groups, which sometimes overcome barriers to information collection for reasons of policy evangelism⁹⁸ or perhaps simply (in the case of NCSL) to help their constituent states—will still not act in all areas where information is needed. These groups will most likely fill informational gaps in relatively new, high-profile areas in which states act, but this does not cover the many mundane, technical areas in which state information sharing is also essential. Hydraulic fracturing is only one component of a very large oil and gas production process, for example—a technical, state-regulated activity that has been deployed for more than 100 years. Yet we lack concise syntheses and comparisons of voluminous state oil and gas regulations.⁹⁹

⁹⁶ Natl. Conference of State Legislatures, 2011-2013 Health Insurance Reform Enacted State Laws Related to the Affordable Care Act, <http://www.ncsl.org/issues-research/health/2012-health-insurance-reform-state-laws.aspx> (introducing and summarizing reports).

⁹⁷ See Pless, *supra* note 26.

⁹⁸ See generally Seifter (describing lobbying by associations of state officials).

⁹⁹ The Colorado Oil and Gas Conservation Commission’s oil and gas rules and regulations occupy 181 pages, for example, and these do not cover certain wildlife and health issues

This combination of barriers to intra- and interstate information, as well as occasional incentives that cause organizations to overcome them, is explored in the following Part. This Part will show that some of the most important modern state laboratories lack the information needed to make their experiments effective, but that in some cases, information is emerging.

C. EXAMPLES

The barriers to effective information collection and synthesis are high in certain technical policy areas—including in those areas where a great deal of experimentation is occurring. Some policy areas suffer from more information flaws than others, thus creating a spectrum of informational impediments explored in the following examples. These examples show the very limited intra- and interstate information available to officials and legislators writing new regulation or policies, industries trying to comply with laws, and nonprofit groups attempting to verify compliance. They also demonstrate some of the incentives described above that tend to impede or bias information collection and synthesis.

1. Oil and Gas

The regulation of oil and gas development is one of the most expansive regulatory experiments within the United States. Development has grown astronomically in recent years, and states have historically—and still do—dominate the regulatory landscape in this area. As introduced above, this is a complex regulated activity with a wide range of risks. Drilling and hydraulic fracturing a well requires at least ten stages: testing for the presence of oil and gas, constructing a well site and access road, drilling and casing (lining) the well, withdrawing millions of gallons of water from a surface or underground source, transporting chemicals to the site and mixing them with water, injecting the mixture at high pressure, storing wastes on site and disposing of them, maintaining processing equipment and gathering lines for the produced oil and gas, and eventually plugging the well.¹⁰⁰ Mistakes or bad practices can occur at all of these stages, and numerous risks emerge. Improperly-cased wells have polluted groundwater with methane during the well drilling process;¹⁰¹ spills and

regulated by other agencies. See Colo. Oil & Gas Conservation Comm'n., Rules and Regulation, http://cogcc.state.co.us/RR_Docs_new/Rules/Completed%20Rules.pdf.

¹⁰⁰ See Hannah Wiseman, *Risk and Response in Fracturing Policy*.

¹⁰¹ E. RES., INC., DELCIOTTO NO. 2, SUBSURFACE NATURAL GAS RELEASE REPORT: ROARING BRANCH, MCNETT TOWNSHIP, LYCOMING COUNTY, PENNSYLVANIA 4–5, 10 (2009) (document obtained by author through public records request) (describing a

leaks of diesel fuel and wastes have contaminated soil, surface water, and groundwater;¹⁰² and emissions of a variety of air pollutants have grown.¹⁰³

Beyond the environmental context, truck drivers in the industry have experienced fatalities at increasing rates,¹⁰⁴ and workers have been injured at well sites.¹⁰⁵ Communities, although experiencing major economic benefits, have also seen housing shortages¹⁰⁶ and greatly expanded demand for public services like fire response and courts.

Because this activity involves so many stages and produces such a broad array of risks, each state has hundreds of regulations and statutory provisions, housed within hundreds of different portions of codes and statutes. As introduced above, no organization has yet comprehensively identified the statutes and regulations that apply to each stage and each risk in the fifty states. Resources for the Future, which has embarked upon the most comprehensive effort to date, invested nearly two years and multiple expert resources and was able to address only 25 regulatory elements.¹⁰⁷ And because state regulations are changing so quickly, some already have changed since the report's cut-off date for research.¹⁰⁸ Furthermore, RFF had to enlist a number of experts for this task—they could not fully rely on research assistants or interns.

This is not a matter of states, municipalities, and the public at large not wanting the information. A journalist recently contacted me hoping to identify the number of states that require the testing of groundwater prior to

methane leak and why it occurred); Hannah Wiseman & Francis Gradijan, Regulation of Shale Gas Development, Including Hydraulic Fracturing at 51, n. 230 (2011) (unpublished manuscript, originally prepared for the University of Texas Energy Center), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1953547 (documenting methane leaks based on state enforcement reports and letters).

¹⁰² Wiseman, *Risk and Response* (documenting spills); Daniel J. Rozell & Sheldon J. Reaven, *Water Pollution Risk Associated with Natural Gas Extraction from the Marcellus Shale*, 32 RISK ANALYSIS 1382, 1384 (2011) (describing likely total volume of spills in the Marcellus shale).

¹⁰³ PA. DEP'T OF ENVTL. PROT., NORTHEASTERN PENNSYLVANIA MARCELLUS SHALE SHORT-TERM AMBIENT AIR SAMPLING REPORT 2 (May, 6 2011), http://www.dep.state.pa.us/dep/deputate/airwaste/air/aqm/docs/Marcellus_NC_05-06-11.pdf (describing air pollution); N.Y. STATE DEP'T OF ENVTL. CONSERV., *supra* note 115, at 5-135 (same).

¹⁰⁴ CENTER FOR DISEASE CONTROL, FATALITIES AMONG OIL AND GAS EXTRACTION WORKERS – UNITED STATES, 2004-2006, Apr. 25, 2008, <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5716a3.htm>.

¹⁰⁵ Ctr. for Disease Control, *Fatalities Among Oil and Gas Extraction Workers – United States, 2003-2006*, 57 MORBIDITY & MORTALITY WKLY. REP. 425, 429-30 (2008).

¹⁰⁶ Williston Impact Statement 2012 at 5, *available at* http://www.willistonnd.com/usrimages/Williston_Impact_Statement.pdf.

¹⁰⁷ Richardson et al., *supra* note 6, at 22-75.

¹⁰⁸ *Id.* at 1.

drilling or fracturing, for example;¹⁰⁹ unfortunately, no one has yet fully answered this, nor has anyone compared baseline testing requirements across each state in a manner that would allow for quick identification of how many wells must be tested, which chemicals must be tested for, and which labs count as valid testing companies.

A number of institutions in addition to RFF have at least partially overcome the disincentives to collecting and organizing information, but not fully. A private, nonprofit group comprised of state agency heads published a report for the Department of Energy, which concluded (perhaps controversially) that regulation of drilling and fracturing is adequate.¹¹⁰ To support this argument, the group compared several types of regulations in approximately 20 states, but it focused only on certain well development stages (casing, for example) and risks (underground leakage of methane, for example).¹¹¹ The group also did not describe the substance of the regulations in its comparison graphs. Rather, it simply described which states had any form of casing regulation and did not specify how deep the casing had to go below groundwater or how strong it had to be in each state.¹¹² The group states in its report that “[o]ne of the most important accomplishments of the study was a development of a regulation reference document” with “excerpted language from each state’s oil and gas regulations related to the programmatic areas included in the study,” with “hyperlinks to the web versions of each state’s oil and gas regulations.”¹¹³ This document is not available online, however, and appears to not have been produced.

The general oil and gas policy document produced by state agency heads potentially shows the bias, inadvertent or not, that could emerge when we rely on states or nonprofits to collect and compile regulatory information. The data in the report, which did not provide details about each state’s approach to risk, was very broad-brush: this was perhaps done with the intention of making the document readable, but the purpose could

¹⁰⁹ Author conversation with Jim Efstathiou, Jr., Bloomberg, June 6, 2013; e-mail from Jim Efstathiou, Jr., to author, June 6, 2013 (“I think we’re going to end up taking that part [baseline testing] out of the story until we get a more complete list.”).

¹¹⁰ GROUND WATER PROTECTION COUNCIL, STATE OIL AND NATURAL GAS REGULATIONS DESIGNED TO PROTECT WATER RESOURCES at 7 (2009), http://www.gwpc.org/sites/default/files/state_oil_and_gas_regulations_designed_to_protect_water_resources_0.pdf (“State oil and gas regulations are adequately designed to directly protect water resources through the application of specific programmatic elements such as permitting, well construction, well plugging, and temporary abandonment requirements.”).

¹¹¹ *Id.* at 10 (showing the well development stages covered in the report).

¹¹² *See, e.g., id.* at 19 (showing the percentage of states surveyed that have various casing requirements).

¹¹³ *Id.* at 6.

also have been to show that many states had regulated various stages of development and risks—not how they had regulated.¹¹⁴ Even groups that might have more of an incentive to produce detailed, comprehensive data to inform regulation, such as the National Conference of State Legislatures, might have a similar temptation to put a positive gloss on existing approaches.

Finally, the State of New York, in an effort to comprehensively identify risks and its own regulations, and to explore other state approaches, published a 1000-plus page report. This report thoroughly (albeit not concisely) summarized New York’s own regulations and referenced other states’ approaches. This incentive for intrastate information collection likely came from simple political pressure: high-profile individuals and organizations in New York have been particularly vocal about hydraulic fracturing concerns. But nowhere in the report does the state comprehensively explore other states’ policy approaches to each development stage and risk identified.¹¹⁵

2. Climate Adaptation

In the area of climate adaptation—a “massive” policy problem¹¹⁶—institutions have attempted to take on the burdensome task of gathering experts familiar with these areas and enticing these experts to produce useful information about various states and municipalities’ approaches to adaptation. The Colorado Governor’s Office, in collaboration with other agencies, the University of Colorado, and other groups, has developed a database describing the people and groups involved in climate adaptation strategies, as well as offering links to the actual content of climate adaptation plans.¹¹⁷ This database does not yet offer quick comparison of one element of a climate adaptation plan across municipalities and states, however; one cannot quickly search the database to identify each jurisdiction’s policy—or nonprofit group’s recommendation—regarding sea walls, for example.

Other groups have embarked upon similar efforts to collect, synthesize, and report on climate adaptation efforts, although not in a format that allows for quick comparison of subfederal policy approaches.

¹¹⁴ See *supra* note 110.

¹¹⁵ N.Y. STATE DEP’T OF ENVTL. CONSERVATION, REVISED DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL IMPACT STATEMENT ON THE OIL, GAS, AND SOLUTION MINING REGULATORY PROGRAM (2011).

¹¹⁶ Ruhl & Salzman, *supra* note 65.

¹¹⁷ Colorado Climate Preparedness Project Database, <http://www.coloadaptationprofile.org/>.

The Climate Impacts Group creates and maintains the CASES (“Climate Adaptation and Case Studies) “Database and Adaptation Library,” which relies on governments and other entities to voluntarily input information about their adaptation projects.¹¹⁸ Although a quick comparison of policy approaches across governments is not available, users can search the database for distinct policy elements, such as public health, flooding, or coasts.¹¹⁹ [More examples to be added here.]

3. Clean Energy Policy

Any state or municipal government wanting to adopt a clean energy policy—or a nonprofit group wanting to encourage one—will, as with climate adaptation, have to dredge up voluminous policy data, and organize it meaningfully, for it to be useful. And the individuals conducting this information collection and organization efforts must have a reasonable degree of in-depth knowledge about electricity generation, the many types of renewable energy that governments might consider including in a clean energy requirement, and the factors that typically go into a calculation of the amount of time needed to transition to more renewable generation. Many states and municipal governments have tended to include many of these factors within one code or act,¹²⁰ thus making the search somewhat easier than in other contexts. Typically, though, one must search state statutes and the utility code to fully understand a state’s renewable energy policy.¹²¹

As in other areas of state experimentation, several non-federal institutions have begun to collect and compare policy approaches. The Georgetown Climate Center has developed a detailed tool that allows states to compare other jurisdictions’ clean energy and energy efficiency policies, as well as those jurisdictions’ “energy production and consumption” and other factors that likely affect the substance and effectiveness of these

¹¹⁸ CASES Database and Adaptation Library, <http://cases.washington.edu/cig/cases>.

¹¹⁹ Search the CASES Database, <http://cases.washington.edu/cig/cases/search>.

¹²⁰ See, e.g., C.R.S. § 40-2-124 (providing Colorado’s requirement that qualifying retail utilities to “generate, or cause to be generated, electricity from eligible energy resources” “[t]hirty percent of its retail electricity sales in Colorado for the years 2020 and thereafter.” Further requirements, however, are found in 4 Colo. Code Regs. 723-3:3650-3:668. The Database of State Incentives for Renewables & Efficiency helpfully provides links to all relevant renewable energy legislation and regulation in Colorado. Colorado, Renewable Energy Standard, http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=CO24R.

¹²¹ See *supra* note 120.

policies.¹²² But the federal government is the most important actor in this area, showing how federal intervention in collecting and synthesizing individual state policies and comparing these policies interstate will likely be the most effective means of filling regulatory information gaps.

In an unusual display of extremely comprehensive collection, synthesis, and comparison of state (and some municipal) policy approaches, the federal government has partnered with university actors to produce information about “clean energy” (renewables and energy efficiency) policy—in part perhaps because it has at times considered implementing a federal renewable energy standard.¹²³ To produce unusually comprehensive information in this area, the Department of Energy funded a project at North Carolina State University that created a detailed Database of State Incentives for Renewables & Efficiency (DSIRE).¹²⁴ DSIRE provides comparative maps that show various energy policies in each state side-by-side,¹²⁵ and also summarizes and provides links to each state’s (and in some cases, various municipalities’) policies and regulations in these areas.¹²⁶ This unusually comprehensive and detailed collection of information allows for a quick understanding of jurisdictions’ different approaches through summary maps,¹²⁷ and it provides more details about state policies within comparative tables.¹²⁸ On individual state pages, it also provides hyperlinks to state and municipal policies.

4. Health Insurance

As introduced in Part I, the Patient Protection and Affordable Care Act of 2010 gives the states a central role in implementing federal healthcare policy, requiring them to implement their own exchanges or default to a federal program, and, through the exchanges, offer a variety of

¹²² Georgetown Climate Center, State Energy Analysis Tool, <http://www.stateenergyanalysis.org/>.

¹²³ See *supra* note 148.

¹²⁴ Dept. of Energy et al., Database of State Incentives for Renewables and Efficiency, <http://www.dsireusa.org/>.

¹²⁵ See, e.g., Dept. of Energy et al., Database of State Incentives for Renewables and Efficiency, Renewable Portfolio Standard Policies, http://www.dsireusa.org/documents/summarymaps/RPS_map.pdf.

¹²⁶ See, e.g., Dept. of Energy et al., Database of State Incentives for Renewables and Efficiency, Arizona Incentives/Policies for Renewable Energy, Renewable Energy Standard,

http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=AZ03R&re=1&ee=0.

¹²⁷ See, e.g., DSIRE, Renewable Portfolio Standard Policies.

¹²⁸ See, e.g., DSIRE, Financial Incentives for Renewable Energy, <http://www.dsireusa.org/summarytables/finre.cfm>.

plans that meet federal standards.¹²⁹ States must reform their insurance laws to meet federal standards, or adopt the federal standards directly.¹³⁰ The process of forming exchanges and modifying insurance codes is a complex and technical one, requiring extensive knowledge of the federal requirements—contained within more than 900 pages of code—and the various approaches that states may use to meet these requirements. Forming exchanges and other tools that will better inform consumers of their healthcare options may be even more difficult, requiring careful calculations of the cost of running various systems and the types of databases likely to most accurately and efficiently inform consumers of choices.

As states rush to make these and other changes by required federal deadlines, they lack full information, quickly accessible about approaches other states are taking. But it appears that institutions are beginning to address this issue—perhaps more effectively than in the oil and gas context. This may be because of the federal role: facing accusations of overreaching and excessive burdens on states, the government has made an effort to aid the states in implementing its new requirements. State organizations, too—perhaps in light of the tight deadlines for implementing modified policies and new health exchanges—are stepping up to the plate. The National Conference of State Legislatures provides comparison maps summarizing (through coded colors) whether states have created their own exchanges, engaged in federal-state partnerships, or might rely on a federal exchange as a default.¹³¹ These maps do not provide the details of how the states defined or constructed the exchanges, but further policy guidance does.¹³² An industry-state collaborative has also begun to collect regulations and provide links to regulations on a central webpage,¹³³ as has the federal government.¹³⁴ Although some groups are beginning to generate the information that will be necessary for effective state experimentation in healthcare, more detail, and better formatted comparisons, are needed if states, industry, and nonprofit groups are to be fully informed of the panoply of emerging policy reforms.

¹²⁹ See *supra* notes 71-72 and accompanying text.

¹³⁰ See *supra* note 72 and accompanying text.

¹³¹ Natl. Conference of State Legislatures, State Actions to Address Health Insurance Exchanges, <http://www.ncsl.org/research/health/state-actions-to-implement-the-health-benefit.aspx>.

¹³² Natl. Conference of State Legislatures, *supra* note **Error! Bookmark not defined.**

¹³³ FracFocus.org, Regulations by State, <http://fracfocus.org/regulations-state> (providing regulatory summaries in addition to a chemical disclosure tool).

¹³⁴ U.S. Dept. of Health & Human Services, State by State, <http://www.hhs.gov/healthcare/facts/bystate/statebystate.html>.

Considered together, some of the most prominent areas of modern state and municipal experimentation show the information collected in these areas is nearly as varied as the policies themselves. Some groups have begun the tedious process of information collection, comparison, and synthesis, but only a federally-funded project seems to have produced a truly comprehensive document. This information deficit reduces the experimental benefits of federalism and raises its costs, and if we assume that at least some level of experimentation will produce some good policies—as many scholars do—this is exceedingly problematic. Experimentation will be much less effective when conducted without knowledge of existing approaches.

III. THE IMPACTS OF THE INFORMATION DEFICIT

Effectively harnessing the power of sub-federal governments to experiment—whether through a cooperative federalist approach, an ongoing interaction between states and the federal government,¹³⁵ or more direct subfederal action with little federal intervention—requires information. Through these regimes, we ask governments to simultaneously address one policy problem through a diversity of policy approaches, and to do so effectively. And we ask regulated entities to bear the high costs of searching for, identifying, and constantly updating their knowledge of the standard with which they comply. Stakeholder groups that play a key role in monitoring compliance bear similar search costs. Without good information, sub-federal experiments will be much less effective than they could be, both for policymakers engaging in writing better regulation and entities attempting to comply with and monitor new policies.

A. IMPEDING EFFECTIVE EXPERIMENTATION

A vast literature on the mechanics of regulatory experimentation has explored the extent to which experimentation toward “good” policy occurs and the conditions necessary to overcome hurdles to innovation. Relatively early in the modern debate, Susan Rose-Ackerman argued that states often do not experiment with innovative new policies for a number of reasons.¹³⁶ Studies have since largely confirmed this principle while also recognizing

¹³⁵ See, e.g., Ryan, *supra* note **Error! Bookmark not defined.**, at 7 (describing a variety of more flexible forms of federalism).

¹³⁶ See Rose-Ackerman, *supra* note 17.

and expanding upon those circumstances—initially identified by Rose-Ackerman—that can and sometimes do lead to genuine experimentation.¹³⁷

Politicians and agency staff are risk averse: those seeking reelection and who have a good chance of winning are unlikely to implement risky new policies, and even agency staff seeking individual promotion and recognition will be hesitant to rock the boat.¹³⁸ As introduced above in the context of information, states are also hesitant to be first movers: those that simply take the lead will simply be copied by others (assuming that information about the policy and its implementation is available). Further, states may lack the resources necessary to experiment or the luxury to do so, even if they want to be the risky first movers. Implementing a stringent new policy to reduce environmental risk could cause certain industries to leave a state, sometimes permanently—a condition that many states simply cannot afford.

Rose-Ackerman and others who agree that only limited experimentation do recognize, however, that experimentation sometimes occurs against the odds, and subsequent scholars have explored when innovation occurs, and why. Policy “evangelists”—those that demand new policy simply to make the world a better place or to vindicate their academic preferences for a particular approach—sometimes succeed in causing states to be first movers.¹³⁹ And some states simply must experiment: their conditions are sufficiently different from conditions in other states that copying policy will be of little use to them,¹⁴⁰ although they likely can still learn valuable lessons from other states’ approaches.

If we assume that some degree of true experimentation occurs, then there is an important second step: how can we encourage useful and productive regulatory experimentation? This partly depends on the goal, but assuming that one broad goal of experimentation is to allow states to address unique circumstances and vindicate individuals’ preferences while also adequately controlling externalities and risks—protecting or perhaps maximizing public welfare, in other words—then we can identify some necessary conditions. Creativity and diversity are essential: fifty states

¹³⁷ Brian Galle & Joseph Leahy, *Laboratories of Democracy? Policy Innovation in Decentralized Governments*, 2009 EMORY L.J. 1333 (2009) (largely agreeing with Rose-Ackerman’s thesis that little innovation occurs after reviewing the thick literature exploring and critiquing her thesis, although noting the conditions that could lead to experimentation).

¹³⁸ Rose-Ackerman, *supra* note 17, xx pincite to be added.

¹³⁹ Galle & Leahy, *supra* note 137, xx pincite to be added.

¹⁴⁰ *Id.*; see also Barak Y. Orbach et al., *Arming States’ Rights: Federalism, Private Lawmakers, and the Battering Ram Strategy*, 52 Az. L. Rev. 1161, 1167-68 (2010) (noting that the benefit of innovation “disappears when state legislatures adopt uniform codes and clone bills written by private lawmakers,” and arguing that this frequently occurs).

adopting identical policies are not likely implementing the most effective ones, unless one actor has somehow already identified the “silver bullet” regulation, which other states have copied. We need as diverse an array of approaches as possible to see which are most effective at achieving various goals of experimentation—including the goal of producing effective policies that adequately protect public welfare.

In light of the disincentives to experiment, agencies and politicians might need motivating factors, such as prizes or higher praise from superiors,¹⁴¹ to encourage experimentation, and they may need to be able to experiment in small batches. Rather than implementing a new state-wide policy, for example, we may need to develop mechanisms that allow certain actors within an industry to volunteer to accept a new policy approach in exchange for a temporary safe harbor from regulatory penalties.¹⁴² But many already have explored the necessary conditions for experimentation, and those are not the focus here: information on the substance of other policy approaches—a key prerequisite to effective experimentation—has too often been ignored in the literature, and it is too often lacking, as described in Part I.

Requiring each state to innovate within a vacuum, ignorant of the regulatory alternatives that other states have considered and adopted, and which ones worked or didn’t, is not likely to generate a healthy diversity of effective regulations. Politicians and agency staff, regardless of their political positions, share certain core values. Many choose their jobs because they care about prestige and personal recognition¹⁴³ and, perhaps, the public good. They highly value re-election or re-appointment, and reputation is exceedingly important: they must cater to and satisfy the groups most likely to secure their careers and avoid alienating key stakeholders. They engage in frequent interactions with stakeholders who have been repeat players through multiple administrations and who have

¹⁴¹ See, e.g., Rose-Ackerman, *supra* note 17, at 615-16 (describing prizes as an “innovative way to encourage low-level governments to search for new ways of doing things” but noting challenges with this approach); cf. Galle & Leahy, *supra* note 137, at 1376-77 (noting that the less commendable approach of “side payments from interested actors” could cause innovation but that “the influence of intensely motivated actors is still hard to predict” because offsetting motivations might be provided to different actors).

¹⁴² See, e.g., cf., Esty, *supra* note 22, at 208 (at the federal level, noting the EPA’s XL Initiative, which “promised a degree of regulatory flexibility for companies that committed to ‘beyond compliance’ performance”).

¹⁴³ See Jonathan Masur, *Patent Inflation*, 121 YALE L.J. 470, 497 (2011) (observing that agency heads “are interested in maximizing both their future career prospects and, to a lesser extent, their leisure time”); *id.* at 497 n. 110 (listing sources that describe agency officials’ incentives); Daryl Levinson, *Empire-Building Government in Constitutional Law*, 118 HARV. L. REV. 915, 927 (2005) (observing that “government officials may be invested in accumulating and exercising personal power”).

made similar arguments throughout these administrations: for more or less regulation, for laxer or more stringent regulation, and for exemptions or careful attention to certain industries viewed by different groups as either exceedingly harmful or beneficial. These shared incentives, as well as the political players and stakeholders who have long worked within the system and who perpetuate certain perspectives, could lead state politicians and agency staff—even those wholly ignorant of other states’ approaches—to enact nearly identical, and potentially, mediocre, policies.

A vital subcomponent of innovation is therefore the diffusion of information about policy approaches among jurisdictions—not the copying of approaches, but the simple knowledge of what others have tried.¹⁴⁴ And although the focus of this Article is on the simple sharing of existing policy approaches, including recently-implemented ones, expansive and more effective information diffusion would also include the sharing of proposed but not implemented approaches.

We might view diffusion as an impediment to innovation, as it might lock states into others’ ideas and could discourage creative new approaches. But more realistically, the sharing of information about policy approaches already experimented with is a necessary first element of policy innovation. Although I do not propose a wholly scientific approach to experimentation here, an effort at some semblance of true experimentation would likely create better policy. And true experimentation involves acquiring knowledge of policies already tried and building from these previous works to develop new knowledge.¹⁴⁵ Without needed baseline

¹⁴⁴ Policy diffusion is typically defined as jurisdictions adopting, not just gaining knowledge of, other jurisdictions’ policy approaches. *See, e.g.*, Karch, *supra* note 84, xx pincite to be added.

¹⁴⁵ *See supra* notes 37-39 and accompanying text for discussion of experimental definitions. Scholars have offered competing visions of experimentation, and many note that this experimentation does not typically follow the scientific definition of experimentation. Rubin and Feeley, for example note that true “[e]xperiments generally involve variations among subsets of a total population, but those variations are carefully and minutely prescribed by the researcher—a centralized authority if ever there was one”—something that often does not occur in policy experiments. Rubin & Feeley, *supra* note 2, at 926. They suggest several versions of potential policy experiments. In one, experimentation occurs to demonstrate the best approach to achieve the best result, and a “central authority will generally have a single goal, but it will be uncertain which of several policies will best achieve that goal” and “could order different sub-units to experiment with different strategies until the best way to achieve the goal emerges”). *Id.* at 924. Within this system, the central entity would have to assign at least one sub-unit “an option that initially seems less desirable,” and no sub-unit would voluntarily choose this option. *Id.* at 925. In a second form of experimentation, “governmental sub-units . . . choose different goals.” *Id.* at 924. The authors suggest that neither of these forms of experimentation typically occurs, or occurs effectively. Others point to federal programs that force state experimentation. *See* Gluck, *supra* note 5, at 567 n. 94 (describing this trend and collecting sources). All of

information, this experimentation simply will not occur, thus impeding one of the core purposes (and potential benefits) of federalism.

B. RAISING SEARCH AND COMPLIANCE COSTS

Just as the information deficit can squelch innovation by failing to provide a baseline from which states experiment, it also expands the known cost of federalism. It makes it more difficult for regulated entities to comply with an ever-changing array of local, state, and private-public standards. It also limits the ability of citizen monitors to identify violations when they occur. Without detailed and up-to-date knowledge of the law in each jurisdiction, nonprofit groups will be unable to identify compliance issues and bring these to the attention of subfederal officials. [More discussion to be added here.]

IV. A SOLUTION: FEDERAL-STATE-UNIVERSITY POLICY INFORMATION PORTALS

Having explored several modern state laboratories, some of which have benefited from at least a moderate level of information about policy approaches, one might think that we need not enlist any governmental entities in producing useful information that is necessary for policy experimentation—and particularly not the federal government. Nonprofit and academic institutions are starting to collect and compare information and post it online in the form of maps and tables for individual states and the country. But there are several reasons to think that these initial efforts will not be enough. Indeed, as introduced above, the most extensive effort to collect individual state policies and compare them—in the area of renewable energy and energy efficiency—was funded by the federal government.¹⁴⁶ This Part proposes that the federal government, in collaboration with state and private entities, assist in the formation of information portals that provide both intra- and interstate information about subfederal policies.

Leaving to the federal government the task of collecting and categorizing policy data will not solve all of the incentive, resource, and bias-based problems explored in Part II. Federal officials, too, have policy

these references to subfederal experimentation define experimentation, in its most basic form, as entities trying different approaches. *See id.* at 567-68 (describing initial hesitance by the states experiment with different approaches to air pollution control and low-income health insurance in the absence of federal triggers).

¹⁴⁶ DSIRE, *supra* note 124.

biases—they might prefer policies that more stringently regulate environmental risks, for example, and thus seek out state examples of this type. In some cases, as with the Clean Air Act, the government has instituted a top-down policy directive (a technology-based emissions standard) that states must implement and wants to monitor whether states are meeting this directive. In others, such as oil and gas or renewable energy policy, the government is taking¹⁴⁷ or contemplating¹⁴⁸ various federal actions, in part in response to perceived inadequacies of state approaches. This might cause it to collect or portray information in a way that supports the government’s ultimate approach to regulation or rejection of a particular state standard. And the government, although offering economies of scale in information collection and synthesis and sometimes has more resources than states, lacks endless resources. But especially in areas where the federal government has very little review authority over state regulations—outside of the cooperative federalism process, for example—and where it has little intention of becoming more involved in a particular policy area, officials might be relatively objective reporters of regulatory information. From a relatively disinterested perspective, federal officials can most accurately identify the core information in state regulatory programs and suggest that most relevant data that should be collected and compared.

Despite having limited resources, the federal government also has a large apparatus designed specifically to collect and synthesize information on policy approaches. The Office of Information and Regulatory Affairs already conducts cost-benefit analyses of nearly all proposed federal regulations, and the Government Accountability Office regularly reviews state programs at the request of Congress members.¹⁴⁹ And as introduced

¹⁴⁷ See, e.g., Env’tl. Protection Agency, Overview of Final Amendments to Air Regulations for the Oil and Natural Gas Industry, Fact Sheet, <http://www.epa.gov/airquality/oilandgas/pdfs/20120417fs.pdf> (describing new rules on air emissions from hydraulically fractured wells); Env’tl. Protection Agency, Unconventional Extraction in the Oil and Gas Industry, <http://water.epa.gov/scitech/wastetech/guide/oilandgas/unconv.cfm> (describing new wastewater treatment standards that the agency is developing).

¹⁴⁸ See, e.g., Jeffrey Logan et al., Natl. Renewable Energy Laboratory, Evaluating a Proposed National Renewable Portfolio Standard, <http://www.nrel.gov/docs/fy09osti/45161.pdf>; ENVTL. PROTECTION AGENCY, STUDY OF THE POTENTIAL IMPACTS OF HYDRAULIC FRACTURING ON DRINKING WATER SOURCES, PROGRESS REPORT, Dec. 2012, <http://www2.epa.gov/sites/production/files/documents/hf-report20121214.pdf>.

¹⁴⁹ See, e.g., U.S. Gov’t. Accountability Office, K-12 Education: States’ Test Security Policies and Procedures Varied at 2, May 16, 2013, <http://www.gao.gov/assets/660/654721.pdf> (examining “the extent to which states’ policies

above, the Department of Energy supports one of the most comprehensive comparative databases of state energy policies, which is regularly updated.¹⁵⁰

While the federal government alone will not likely be able to create and maintain these types of information portals—as highlighted by the recent glitches in the federal healthcare website—it will be an important driving force behind them. The federal government should provide the basic vision for information collection, specifying the policies and regulations in a given area that are most important and the categories into which these policies and regulations are most logically divided and compared. It should then seek proposals from universities and other institutions to create, populate, and maintain a portal that provides information about individual state policies as well as comparative databases. [This section will further discuss the limitations and benefits of state federal involvement and the ability to potentially avoid political economy challenges at the subfederal level. It will also explore how data input for policy information portals might work. Large databases that both summarize individual subfederal policy approaches and compare them likely will need to rely on information inputs from numerous individuals, thus requiring auditing and other measures to verify accuracy and consistency. Analogies to the citizen monitoring literature will be relevant here—this is a different type of information collection than, for example, citizens gathering air quality or other monitoring data, but it provides useful lessons.¹⁵¹]

Conclusion

Subfederal entities shoulder enormous responsibilities in the policy areas that most fundamentally affect human welfare. If these entities can effectively regulate without competing to attract inefficient levels of industry (and pollution), interfering with agreed-upon national goals, or generating spillover effects, then experimentation can be beneficial. Subfederal entities trying out different policy approaches to achieve an agreed-upon goal, or even experimenting with different goals, can in some cases be more accountable to the electorate, implement efficient policies that better comport with local conditions, and create a diverse set of policies from which foot voters may choose. But good experimentation is unlikely

and procedures include leading practices to prevent testing irregularities,” and conducting a 50-state survey).

¹⁵⁰ Database of State Incentives for Renewables & Efficiency, <http://www.dsireusa.org/>.

¹⁵¹ See, e.g., Eric Biber, *The Problem of Environmental Monitoring*, 83 U. COLO. L. REV. 1 (2011).

to happen without an extensive baseline of information. Those involved in the grand experiment need to know what others already have tried, and it appears that this information baseline is often inadequate.

A number of groups already have incentives to produce information about individual subfederal policies and to compare approaches in a given policy area. With respect to intrastate information, state agencies want to inform regulated industries of regulations to improve compliance. But entrenched industries that have already taken the time to summarize regulatory information for themselves might discourage this type of state effort, as it reduces entry costs for competitors. Furthermore, state agencies could be captured by industry players that demand laxer enforcement of regulations, in which case states have little incentive to fully understand and publicize their own laws.

With respect to needed comparisons of subfederal standards across states, municipalities, or public-private partnerships, organizations like the National Conference of State Legislatures and various consortia of state agencies already regularly produce some of this data. But the information often is not comprehensive—it tends to provide broad-level summaries of state or local approaches without offering key details of policy elements, and these details that experimenting entities need. Further, when we rely on these types of consortia to summarize policy without direction from a more disinterested source, such as the federal government, there is a risk that only select information will be reported. If the organization believes that one type of approach is superior to another, it might inadvertently highlight this approach at the expense of others. These and other nonprofit groups might also only focus on the latest and most interesting policy areas, such as healthcare, at the expense of other, more mundane areas where experimentation also occurs.

The federal government has an important role to play here. In areas like healthcare where it has set a national goal and asked the states to implement large components of that goal, the government has a direct interest in fully understanding and comparing state approaches. Federal involvement in collecting, summarizing, and reporting intra- and interstate information in these areas could, as with nonprofit groups, bias information the information collection and production effort. The government might highlight certain favored states as having the “model” exchange and overlook or give short shrift to effective approaches that it dislikes for political or other reasons. But the federal government is also in one of the best positions to collect information from the states, and if it partnered with a university to collect, organize, and report this information, could eliminate some of this bias.

In areas where states experiment without a federally-required goal, such as the field of oil and gas regulation, clean energy policy, and climate adaptation, the federal government should still have strong incentives to understand, monitor, and report state policy approaches. To the extent that a race to the bottom or detrimental spillover effects occur, the government might need to step in. And, as with oil and gas, if the federal government ceded authority to the states under an assumption that they would do a good job of regulating waste management, it might need to revisit this assumption from time to time. The government therefore already does, to some extent, monitor state approaches. It is in a good position to expand and enhance this monitoring and to play the role of information collector and provider, in collaboration with universities, states, and other organizations that have expertise, data input abilities, and potentially, more stable funding.

In a perfect world of policy experimentation, subfederal entities would have full information, summarized concisely yet thoroughly, about the approaches that all of their counterparts had taken in a given policy area. They would know the details of each individual approach, and they would have tables, maps, or other data allowing for quick comparison of their counterparts' approaches. For oil and gas, states, for example, could look at maps showing the required depth of pipes that protect groundwater, the minimum mandated thickness of the plastic liners in waste pits, and the number of water wells that had to be tested before drilling, and a number of other points of comparison. In the clean energy context, municipalities and states could quickly determine the amount of electricity that must come from renewables in each state, the types of entities that must meet this standard (only large utilities, for example, or all utilities), and the types of resources that counted as "renewable," among other policy elements. This type of information is slowly becoming available. The federal government has occasionally funded these sorts of information projects, as best exemplified in the area of renewable energy, and motivated nonprofit and interstate associations have taken up the onerous task of collecting and categorizing data on oil and gas regulation. The federal government, too, is beginning to collect and publicize information about state health exchanges. But much progress remains to be made. If we are to rely on experimentation as a justification for federalism, as well as a tool to create better, more efficient, and fairer policy, then we must ensure that a solid information baseline emerges along with the experiment. Without this guarantee, subfederal entities will experiment blindly, to the detriment of their constituents and the public at large.