electoral
innovation
lab
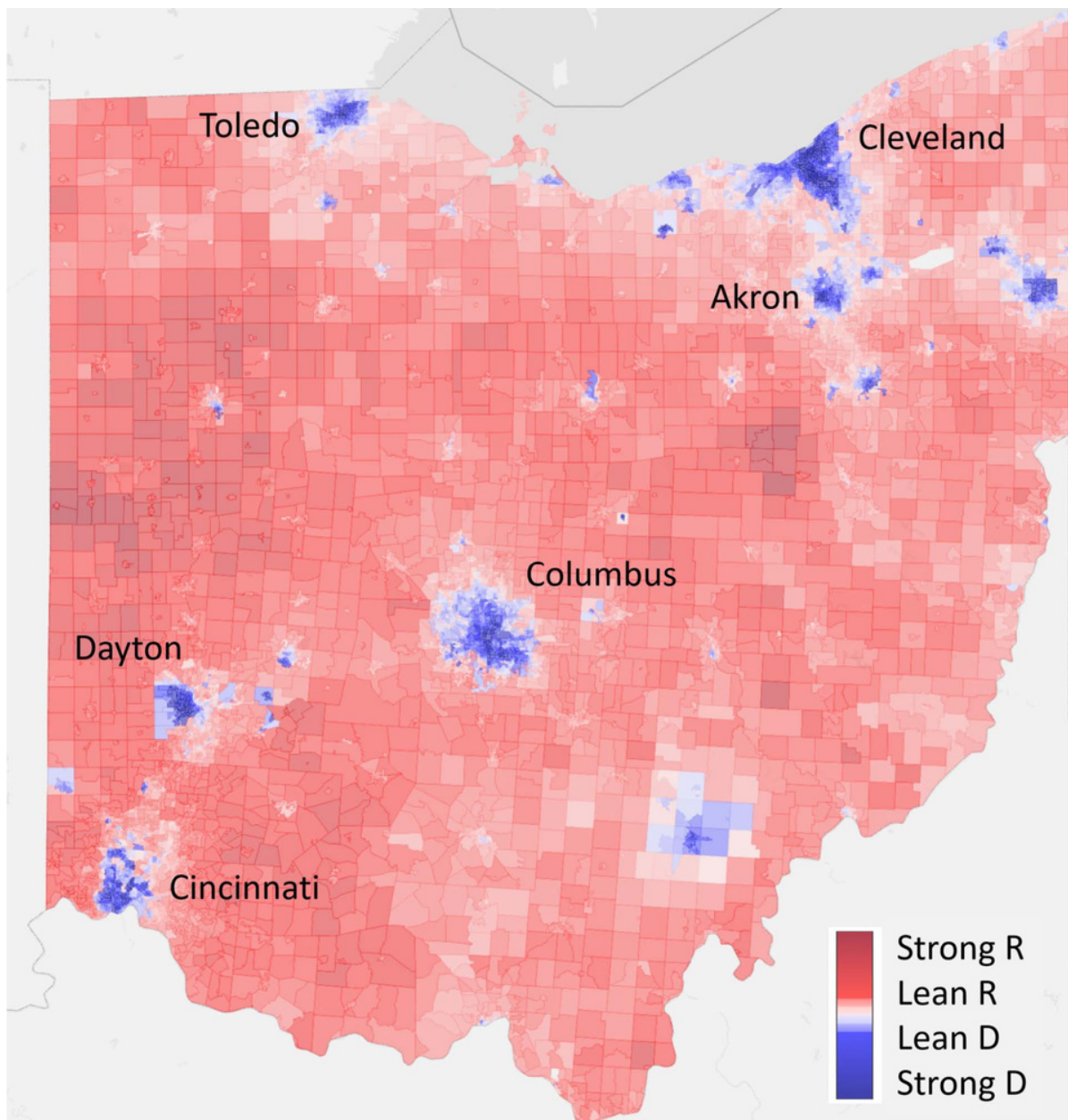
Building a practical science of democracy repair

THE POLITICAL GEOGRAPHY OF OHIO
A precinct-level map of Ohio's voting patterns, 2016-2020.
Municipalities with populations of greater than 100,000 are labeled.

Credit: Dave's Redistricting App, Mapbox

The science of democracy reform is in its infancy, but has enormous potential to help advocates win.

As voting rights continue to come under threat, attention is rising about barriers to equitable representation of political parties and race-based communities at the local, state, and federal levels.

Despite hard fought battles to protect and advance voting rights in America, gerrymandering still exists to keep elected officials in power who are more beholden to their partisan politics than to the voters who reside in their districts. A variety of reforms have been attempted, with some succeeding, some failing, and others falling short of effective implementation. These include redistricting commissions, court actions, and structural changes, such as multi-member districts.
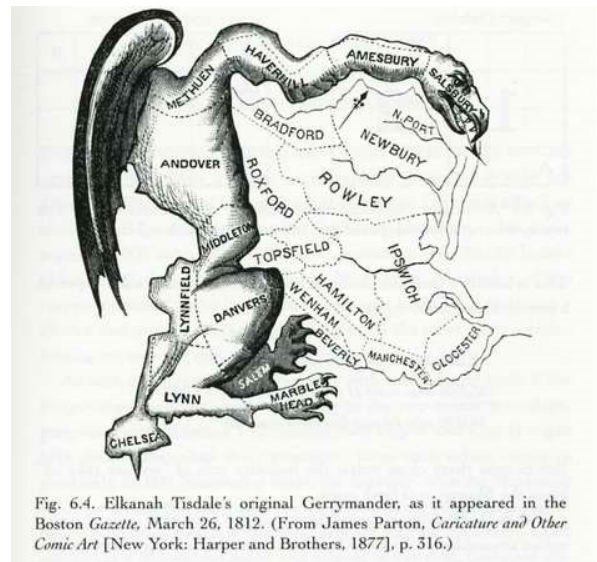
Fig. 6.4. Elkanah Tisdale's original Gerrymander, as it appeared in the Boston *Gazette*, March 26, 1812. (From James Parton, *Caricature and Other Comic Art* [New York: Harper and Brothers, 1877], p. 316.)

Recent years have seen a flowering of proposals to rescue and repair democracy in addition to redistricting efforts. These include ranked-choice voting, open primaries, approval voting, and Electoral College reform to name a few. However, enthusiasm for these reforms is often driven by intuition, not evidence. In the absence of a framework for putting reforms in perspective, a danger exists that even if one reform wins, committed advocacy will be wasted because the reform is ineffective or conflicts with others in play.

Two things are clear: (a) democracy is in need of repair with escalated polarization and destabilization of democratic norms, and (b) experts from multiple disciplines are motivated to build a science of data-driven advocacy in democracy reform. A path forward is possible that will lead to fairer representation, more responsive government, and institutions suited for the 21st century. To aid in these goals, modern science, guided by ethical considerations, can help.

electoral innovation lab

The central challenge remains on how to represent everyone fairly.

For voters to have confidence in our democracy and be willing to participate, they must believe:
- in the right to cast their ballot,
- that their ballot will be counted and certified, without interference, and
- their best interests will be fairly represented by the candidates they select.

Science and technology have been used to expand access to the ballot and improve procedures to count and certify our ballots. However, voters will not cast their ballots if they don't believe they are fairly represented by any of the candidates.

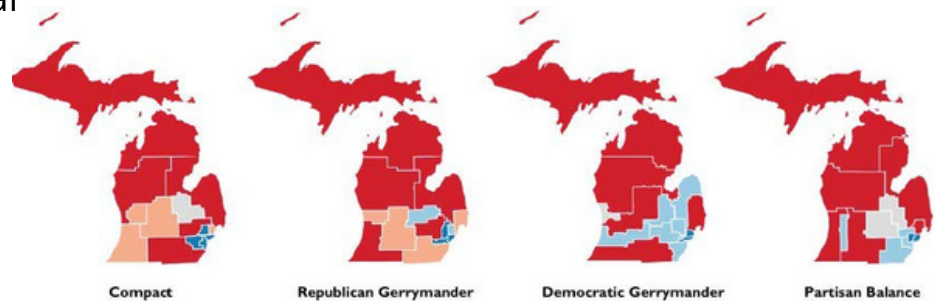## The Electoral Innovation Lab focuses on fair representation.

We produce empirical articles, simulations, and online resources to inform and improve democracy reform efforts, such as:
- countering gerrymandering/engaging in redistricting efforts
- increasing authentic representation by opening up the field to candidates from all backgrounds to be on the ballot
- presenting alternative voting methods to allow voters more opportunities to signal which candidates should proceed in the election process
- providing tools in identifying communities of interest seeking improved representation and decreased polarization
- identifying potential challenges regarding particular strategies and tactics in reform efforts and practical solutions to address emergent issues

Each U.S. Census brings opportunities to realize the promise of democracy by strengthening fair representation.

The U.S. Census Bureau provides the 50 states, the District of Columbia, and Puerto Rico with population counts to use in their redrawing of congressional and state legislative district boundaries—along with tens of thousands of other jurisdictions—a process known as "redistricting". The number of gerrymandered Congressional and legislative districts dropped sharply during the current decade compared with 2012, thanks to independent commissions (Michigan, Colorado), court cases (Pennsylvania, New York, Connecticut, Maryland), and public input (New York, Virginia).

EIL produces research to guide leaders, reformers, and government institutions in these efforts. Our staff and collaborators provide technical and scholarly electoral reform research, state redistricting guides, electoral commission training guides, technical and legal analysis of legislative reform proposals, electoral issues and trend reports, and data analysis tools.

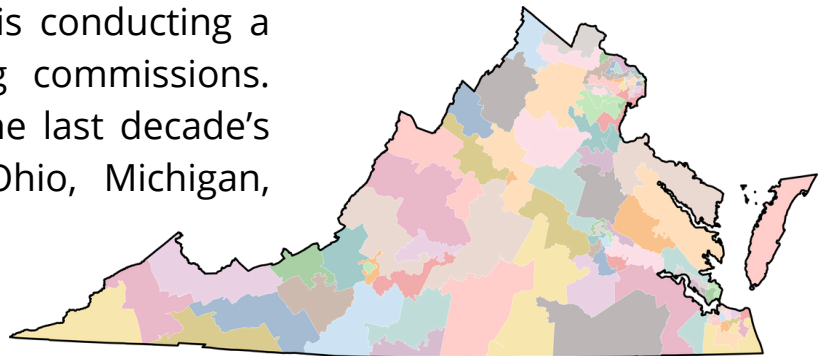Compact   Republican Gerrymander   Democratic Gerrymander   Partisan Balance

For example, EIL created a 50-state publicly accessible resource of quantitative map analytics of 476 draft and enacted district plans, as well as an extensive database of redistricting laws and policies. Expanding on this work, we developed *Guides to Redistricting Commissions* for Michigan, Virginia, and Utah. Michigan's Secretary of State and nonpartisan redistricting commission, as well as Virginia legislators and reformers, used the guides to advance their efforts. EIL staff and collaborators have used these resources while serving as technical consultants to commissions, expert witnesses in impact litigation, and special masters tasked with developing new maps in states as recently as New York, Pennsylvania, New Jersey, and North Carolina.

electoral innovation lab

We are eager to prepare for the opportunities of the 2030 census data.

The first marquee project of EIL, the Princeton Gerrymandering Project (PGP), became a key resource for advocacy groups, nonprofit organizations, legislative commissions, judicial representatives, journalists, and the public. PGP data and analytics helped inform advocacy strategies to achieve fair representation through nonpartisan redistricting efforts in multiple states. With the 2020 redistricting cycle complete, PGP-generated data, work products, and scoring of redistricting plans will remain as a public resource at gerrymander.princeton.edu/. A new website allowing for more functionality is being planned in time for the 2030 census cycle and district map drafting.

One of EIL's objectives for 2024 is conducting a multistate review of redistricting commissions. We will review the outcome of the last decade's reforms in Virginia, Colorado, Ohio, Michigan, and other states, all of which implemented slightly different reforms.

Through an examination of news reports, redistricting processes, and interviews, EIL will document successes and failures, identify causative factors, and derive lessons for future reforms. We will expand on this work by integrating our findings with a given state's constitution, laws, and political environment, so we can help identify parameters for attainable reform. We will analyze the likely outcomes of hypothetical reforms, including demonstration maps, keeping the following factors in mind:
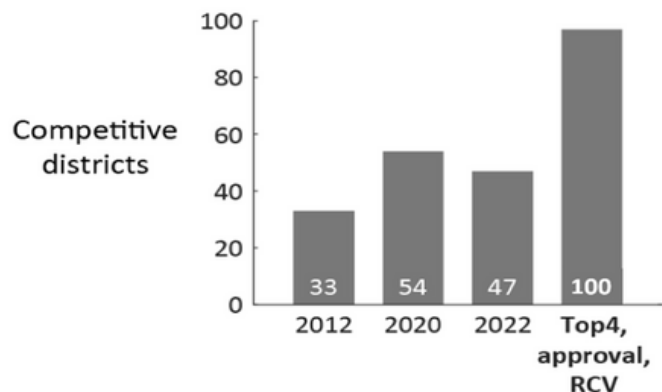
- mechanisms must be crafted to promote effective models of nonpartisan commissions, clear fairness standards, and means of resolving disputes;
- concerns from specific interest groups be addressed; and
- advocates must trust and learn to use data and analytics to further their goals.

With the continued failure in passing the federal Voting Rights Act, the battle for democracy is in the states. We can help them.

With the recent *Moore v. Harper* ruling, the U.S. Supreme Court has secured a state's ability to limit partisan manipulation of congressional maps. This defense of democracy encourages ongoing reform efforts at the state level.

Yet, fair representation is not just about maps - if we do the work, we can provide more analytical data to answer questions about whether alternative voting methods help realize goals towards fair and meaningful representation. In cities, counties, and states, advocates are looking for ways to encourage more eligible candidates to run for office and diversify the pool of candidates.

Redistricting reform and voting rules reform: hidden synergies

Competitive districts

2012	2020	2022	Top4, approval, RCV
33	54	47	100

If even 1 in 20 partisan voters has complex preferences, voting-rules reform can *double* the number of competitive seats

EIL can explore voter-centric methods to promote increased engagement by voters seeking to cast ballots for a wider slate of candidates more reflective of their communities.

Other EIL objectives in 2024 include producing an analysis of past ranked-choice elections and generating a model to calculate the outcomes of various voting rules (first-past-the-post, ranked-choice, Top Four, approval) in future elections. We will focus on state-specific optimization of voting reform by exploring these questions:

- Which reforms make sense in different states?
- How do local factors shape dynamics and incentives?
- Which reforms are attainable and help communities achieve improved representation?
- How do different reforms synergize with or cancel one another?
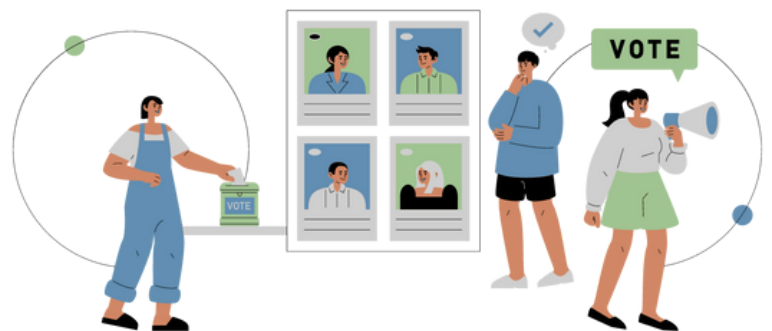
electoral innovation lab

Integration of data analytics with policy research and legal scholarship will fuel the best democracy reform.

EIL applies ensemble modeling, cluster computing, and other computational techniques to cast-vote records and proprietary data sets. The data collected in our redistricting work fuels scholarship related to communities of interest, racial fairness, polarization, alternative voting rules, election integrity, and other issues relating to democracy.

EIL takes an engineering-like approach to democracy repair. We maintain no commercial interest in outcomes and our work is nonpartisan. We apply a science-backed, multidisciplinary approach to our projects, employing the following domains of expertise:

- Data science (statistics, geospatial analysis, visualization)
- Mathematics (computational modeling, algorithms, ensemble generation, complex systems analysis)
- Law
- Technology/Computer science
- Political science
- Cognitive and social science

Over the years, the scholarly and policy projects of EIL (as well as the Princeton Gerrymandering Project) have involved the work of several dozen undergraduate and graduate students as well as post-doc professionals. Many have gone on to dedicate further important work to democracy. Former staff and alumni have taken on positions at the National Conference of State Legislators, Demos, the Center for Democracy & Technology, the Fair Elections Center, Carnegie Mellon University, the Election Lab at MIT, the U.S. Election Assistance Commission, and Schmidt Futures. EIL continues its professional development programming during fall, spring, and summer terms by hosting interns, fellows, and mentors to engage in priority projects.

Are you ready to invest in the promise of democracy?

The turbulent politics of the last several years has shaken the confidence of voters across our nation. Yet, there are opportunities to repair democracy. The Electoral Innovation Lab has laid a strong intellectual foundation for democracy reform in the pursuit of fair representation. We clearly see the possibilities of building scholarship and training modules bridging math and science with policy and law to roll back egregious restrictions used to suppress the vote and ensure partisan actors maintain their power rather than have the people decide for themselves.

Recent U.S. Supreme Court rulings such as *Allen v. Milligan* and *Moore v. Harper* underscore how tenuous our democracy since the passage of the Voting Rights Act of 1965. These victories took years in the making. This is the time to explore the possibilities of strengthening fair representation in the states right now while preparing to assist redistricting reform efforts after the 2030 census.

This multi-year effort needs visionary supporters who understand that it takes time and strategy to overcome the disinformation that anti-democracy activists and politicians are pedaling. You can help the fight for democracy by investing in EIL's work with a major gift. Your investment today ensures our ability to provide data and analysis to inform the work of nonpartisan commissions, court cases, and citizen-powered campaigns.

You have lived your life investing and supporting your values and principles. Have you considered what the long-term impact of your investment in American democracy now could mean for your generation and those after you?

The next 10 years are critical - which way will you lead it?

electoral innovation lab

Current projects of Electoral Innovation Lab

Project A - Frameworks for Matching Reforms to Specific Environments

EIL analyzes contemporary trends in democracy reform to assess how a jurisdiction's election system can be more representative, inclusive, and responsive to voters. To identify the best strategies, solid data and analytics are collected to assess likely consequences of reforms implemented in given environments and political landscapes and develop predictive models that account for future demographic and social change. The science creates reliable frameworks to determine which and where reforms will succeed.

Project B - A Technology Hub for Citizen-Led Democracy Reform

Democracy reform often requires technical expertise, raising barriers to entry for many citizen advocates. EIL is building a research hub combining data analytics, software design, and usability science to develop support tools and training for citizen empowerment. The development of free public tools for redistricting map-making and community of interest (COI) reporting are examples of how to overcome these barriers. Creating a single hub with these tools and other products will achieve efficiencies of scale and quicker accessibility for advocates.

Project C - Convenings for a New Science of Democracy Reform

Ideas for democracy reform are popping up all over, but how do we know which ones will work best? EIL offers a space to network and create a community at the intersection of data analytics and democracy advocacy. Gatherings hosted at Princeton University will provide opportunities for researchers, legislators, and advocates to review current progress and design effective future actions. Deliverables include policy papers, networking with researchers and reformers, and a roster of experts to assist in democracy reform nationwide, as well as locally.

Project D - Democracy Science Research Hub - Fellowship Program

Postdoctoral, graduate, and undergraduate fellows are admitted into a competitive interdisciplinary program, guided by established quantitative researchers, policy experts, and other mentors in the field. Participants are eligible for continued opportunities to work in the democracy reform space, such as assisting advocacy organizations in designing reform strategies and implementation plans, serving as expert witnesses in impact litigation cases, or conducting data analytics to help citizen-led commissions optimize their efforts.

About the Electoral Innovation Lab

Our Mission: To build a science of data-driven democracy reform using math, law, and practical strategies for change.

Our Vision: Voters gain and maintain the power to choose their elected officials instead of politicians suppressing voters' rights to fair and meaningful representation.

Our Values: We are nonpartisan, independent, evidence-based, and multidisciplinary. We answer honestly to data. Objective data is gathered and analyzed using sound methodology, clear processes, and transparency. All the research tactics we use to predict the implications and consequences of reform are empirically supported.

Our Neutrality: *One challenge to EIL is avoiding partisan politics.* Candidates who uphold democracy may come from either party or no party. EIL's role is to identify such opportunities, without advocating directly for the election or defeat of specific candidates. In addition, EIL will determine which reforms are likely to be party-neutral in the long term. Our information is a public resource, and its widespread accessibility is a primary interest. We leave explicit advocacy to other groups, and we do not invest our resources into specific election outcomes. Over the years, EIL has maintained this integrity while engaging with 50+ nonprofit and organizational policy partners.

The Electoral Innovation Lab (EIL) was originally developed from the work of the Princeton Gerrymandering Project, which was launched in 2014 by Professor Sam Wang at Princeton University. EIL became an independent fiscally-sponsored nonprofit in 2023 and currently exists as a project under the 501(c)(3) Open Primaries Education Fund while our IRS tax-exemption application is pending. EIL operates under the leadership of founder Professor Wang, with primary collaborators Professor Jonathan Cervas at Carnegie Mellon University's Institute for Politics and Strategy and Professor Keena Lipsitz at Queens College, City University of New York.
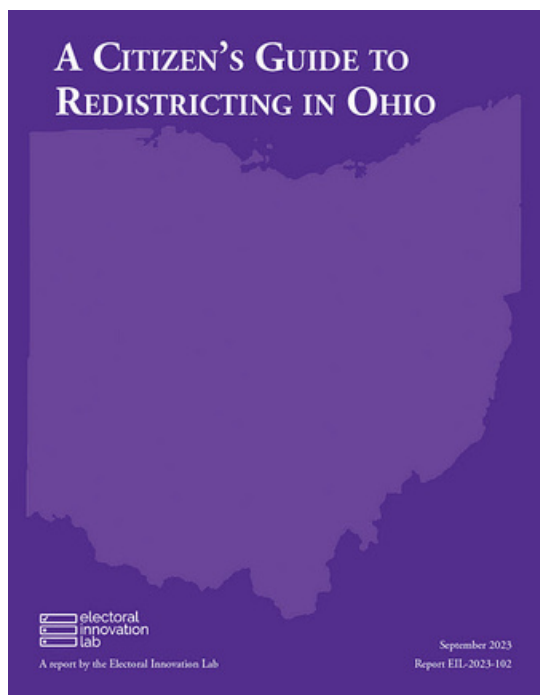
Professor Sam Wang

electoral innovation lab

NEW Report: Ohio Redistricting

September 25, 2023 - As the Ohio Redistricting Commission considers newly drawn proposed state House and Senate district maps amid growing concerns about partisanship, a report released by the national nonprofit the Electoral Innovation Lab describes how the process could be different using a citizen-led independent commission rather than current lawmakers drawing the lines.

A Citizen's Guide to Redistricting in Ohio reviews the state's current redistricting system, presents the major weaknesses, and offers lessons from recently formed independent commissions in other states as guides to reform in the Buckeye State.

Voting rights advocates are working on a proposed ballot initiative for the 2024 election to establish a 15-member citizen-led independent commission to prevent partisan gerrymandering and strengthen fair representation across the state. The report is intended to serve as an informational resource detailing key factors for a successful independent redistricting process, best practices for commissioners, and perspectives for balancing the varied interests that reflect Ohio's political parties, diverse communities, and individual voters.

To view the report, visit electoral-lab.org/ohio-report

"The examples of redistricting commissions in Michigan and Colorado show that an independent process can ensure representation of all communities and parties in a balanced manner," stated Professor Sam Wang, founding director of the Electoral Innovation Lab. "As the saying goes, states are the laboratories of democracy. These states have done successful experiments."