

STATE OF NORTH CAROLINA
COUNTY OF WAKE

IN THE GENERAL COURT OF JUSTICE
SUPERIOR COURT DIVISION
No. 19-cv-012667

REBECCA HARPER, *et al.*,

Plaintiffs,

v.

DAVID LEWIS, IN HIS OFFICIAL CAPACITY AS SENIOR
CHAIRMAN OF THE HOUSE SELECT COMMITTEE ON
REDISTRICTING, *et al.*,

Defendants.

**DECLARATION OF
BLAKEMAN B. ESSELSTYN**

I, Blakeman B. Esselstyn, upon my oath, declare and say as follows:

1. I am over the age of eighteen (18) and competent to testify as to the matters set forth herein.
2. I am a Principal at FrontWater, LLC and EQV Maps.
3. I have been retained by Plaintiffs in the above captioned matter. My Curriculum Vitae is attached to this Declaration. I am being compensated \$200 per hour for my work in this case.
4. At Plaintiffs' request, I have created the enclosed maps of North Carolina's current congressional districts.
5. The first thirteen enclosed maps show each of North Carolina's thirteen congressional districts. In each of these maps, the red and blue shading represents the relative vote margin in the 2016 North Carolina Attorney General election in a single VTD, with darker blue shading representing larger Democratic vote margins and darker red shading indicating larger Republican vote margins (both normalized by acreage). Using actual vote differentials

rather than percentage differentials allows one to more easily see the effects of small shifts in district lines on the ultimate outcomes.

6. I obtained all map data for these thirteen maps from the North Carolina General Assembly. I obtained the 2016 elections data via a public records request to the North Carolina General Assembly.

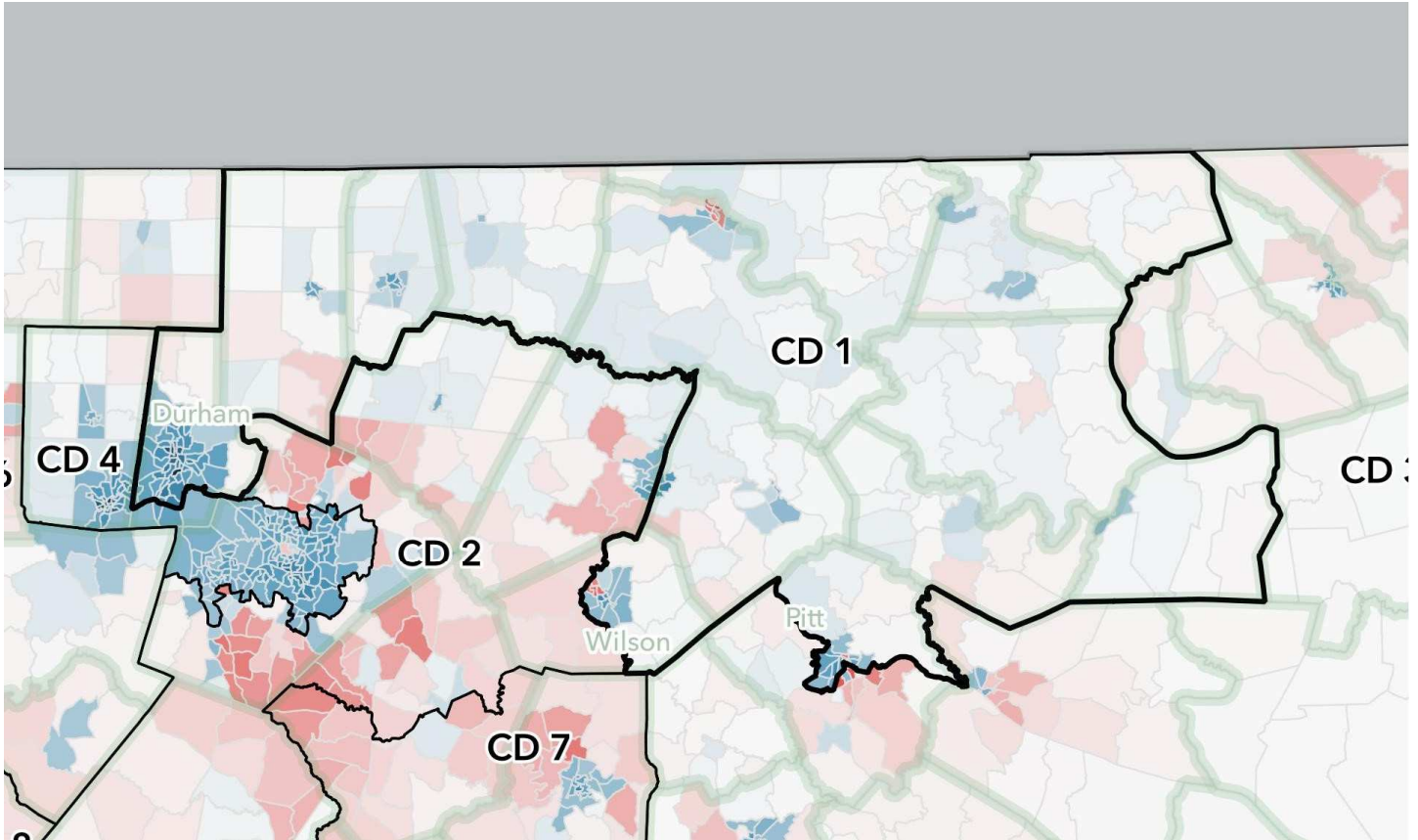
7. The final two enclosed maps show the division of the campus of North Carolina A&T State University across Congressional Districts 6 and 13, and the division of the campus of UNC Asheville across Congressional Districts 10 and 11. I created these maps using the QGIS software program.

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge.

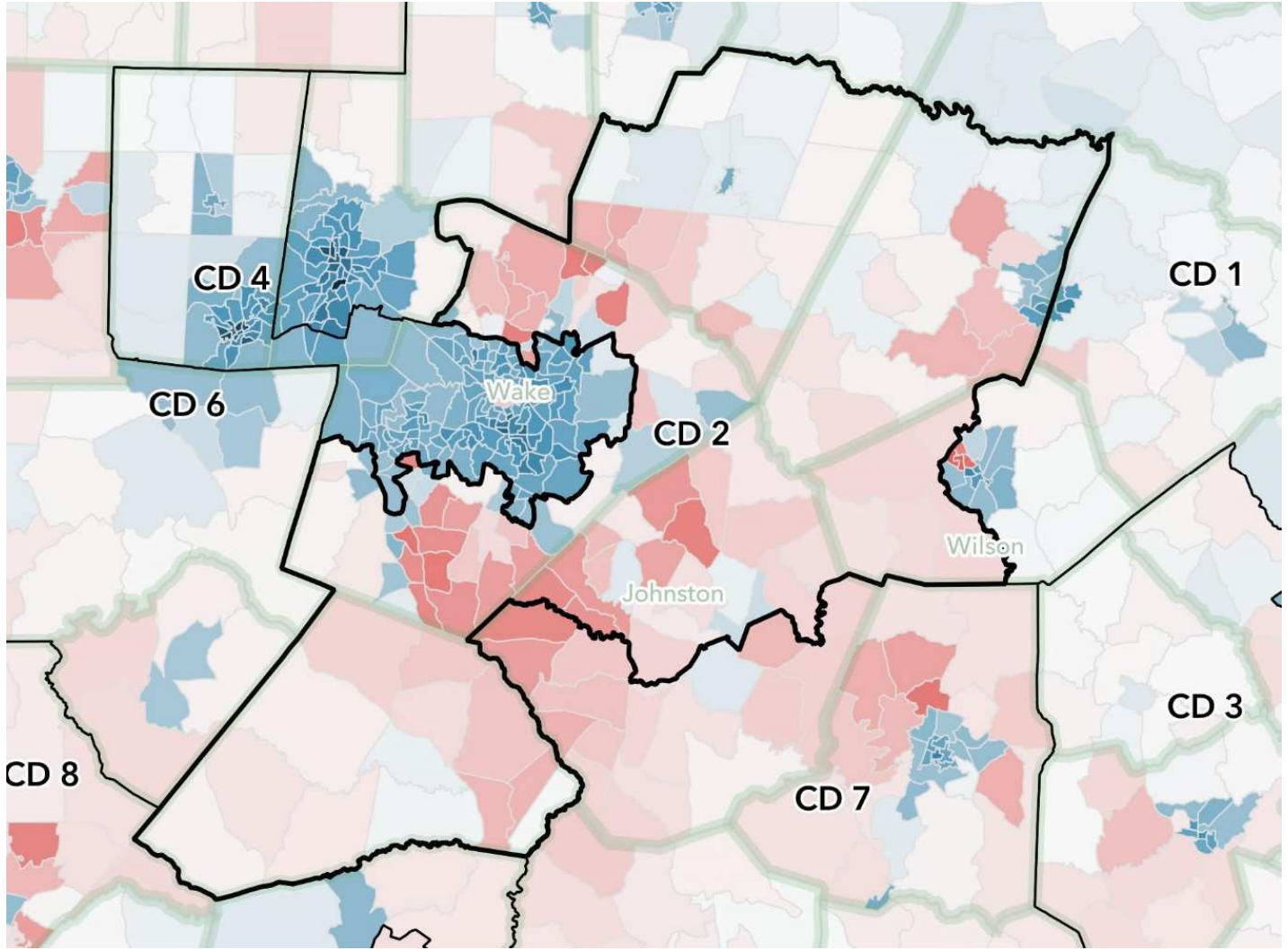
This 30th day of September, 2019


Blakeman B. Esselstyn

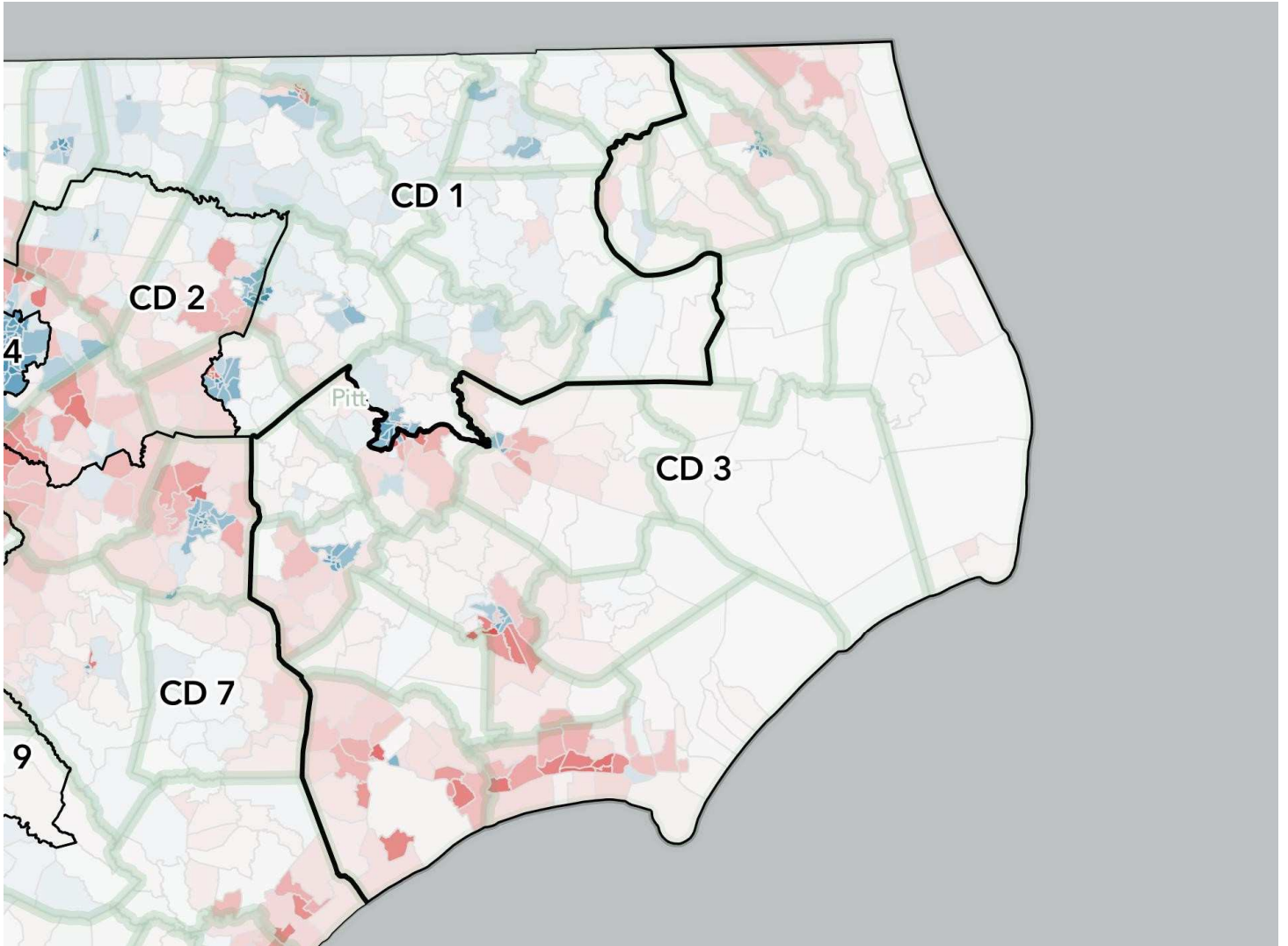
Congressional District 1



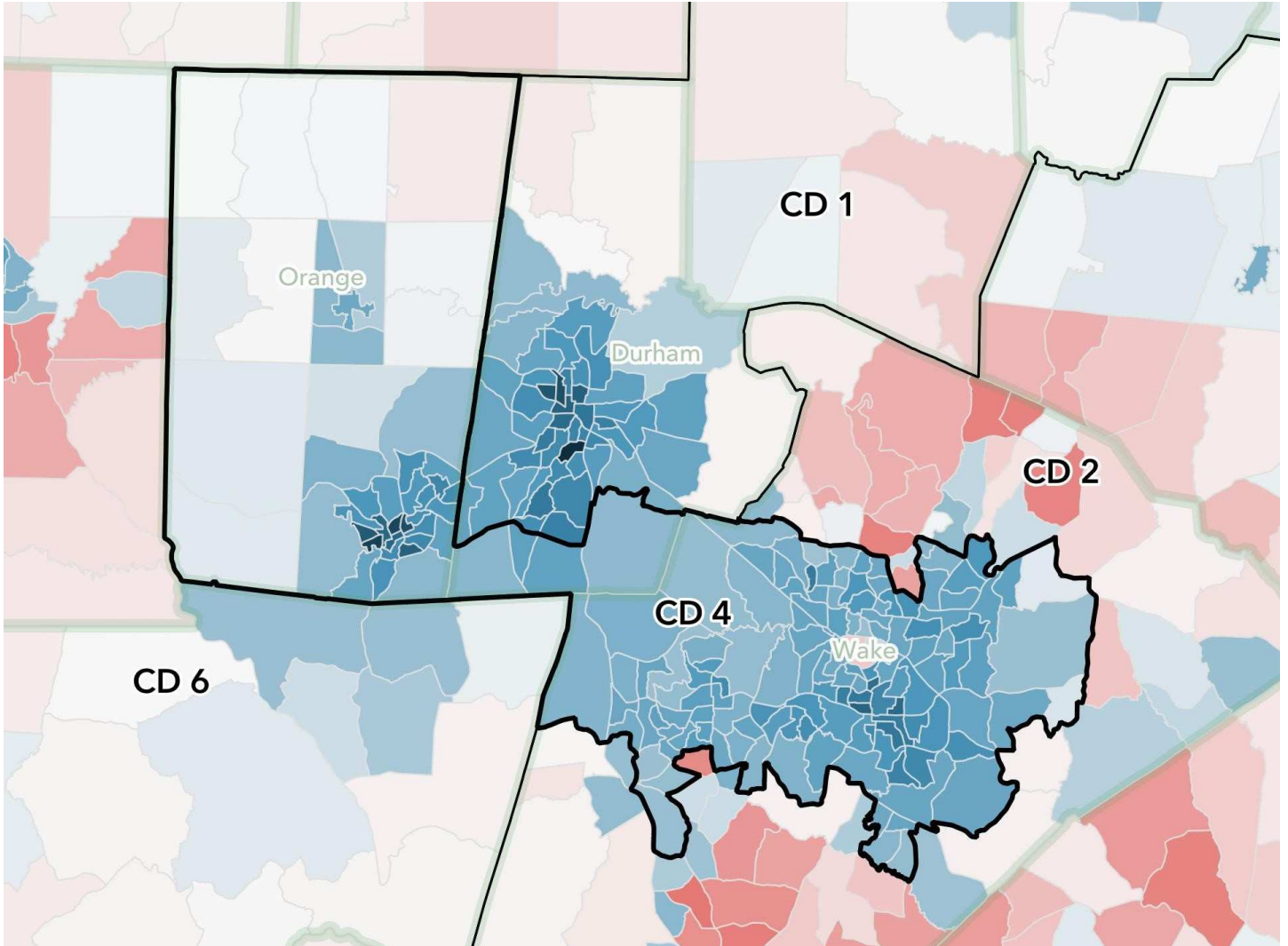
Congressional District 2



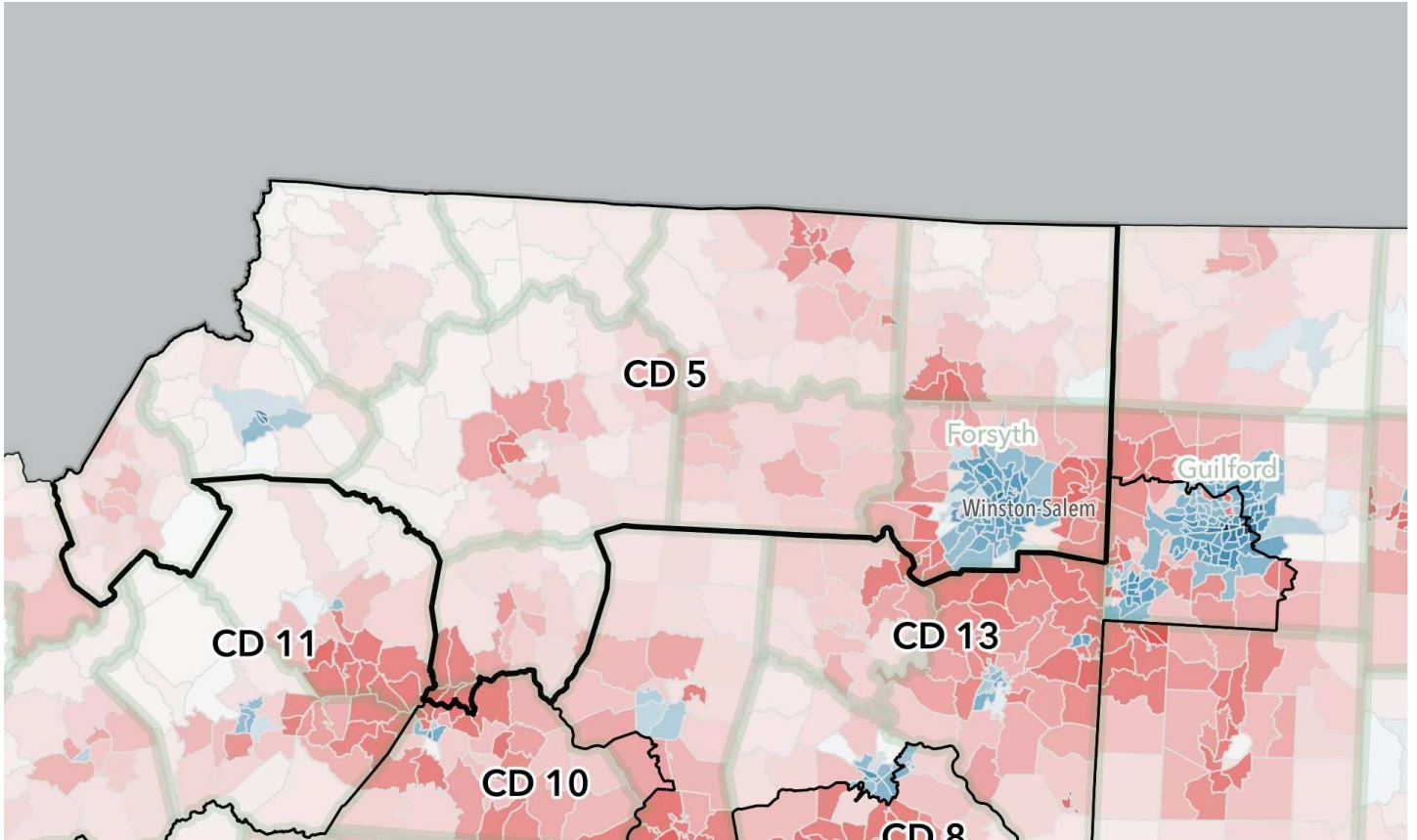
Congressional District 3



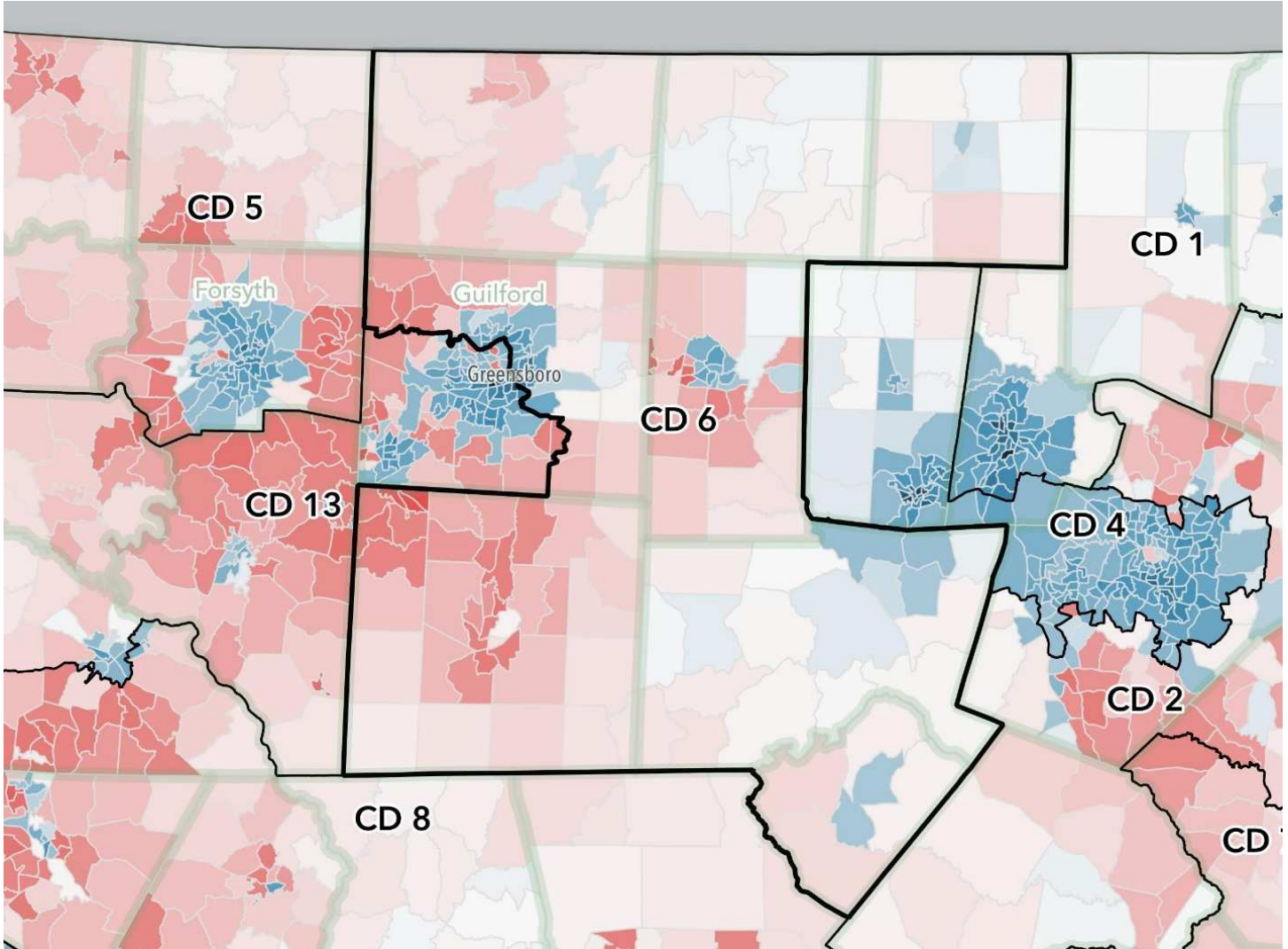
Congressional District 4



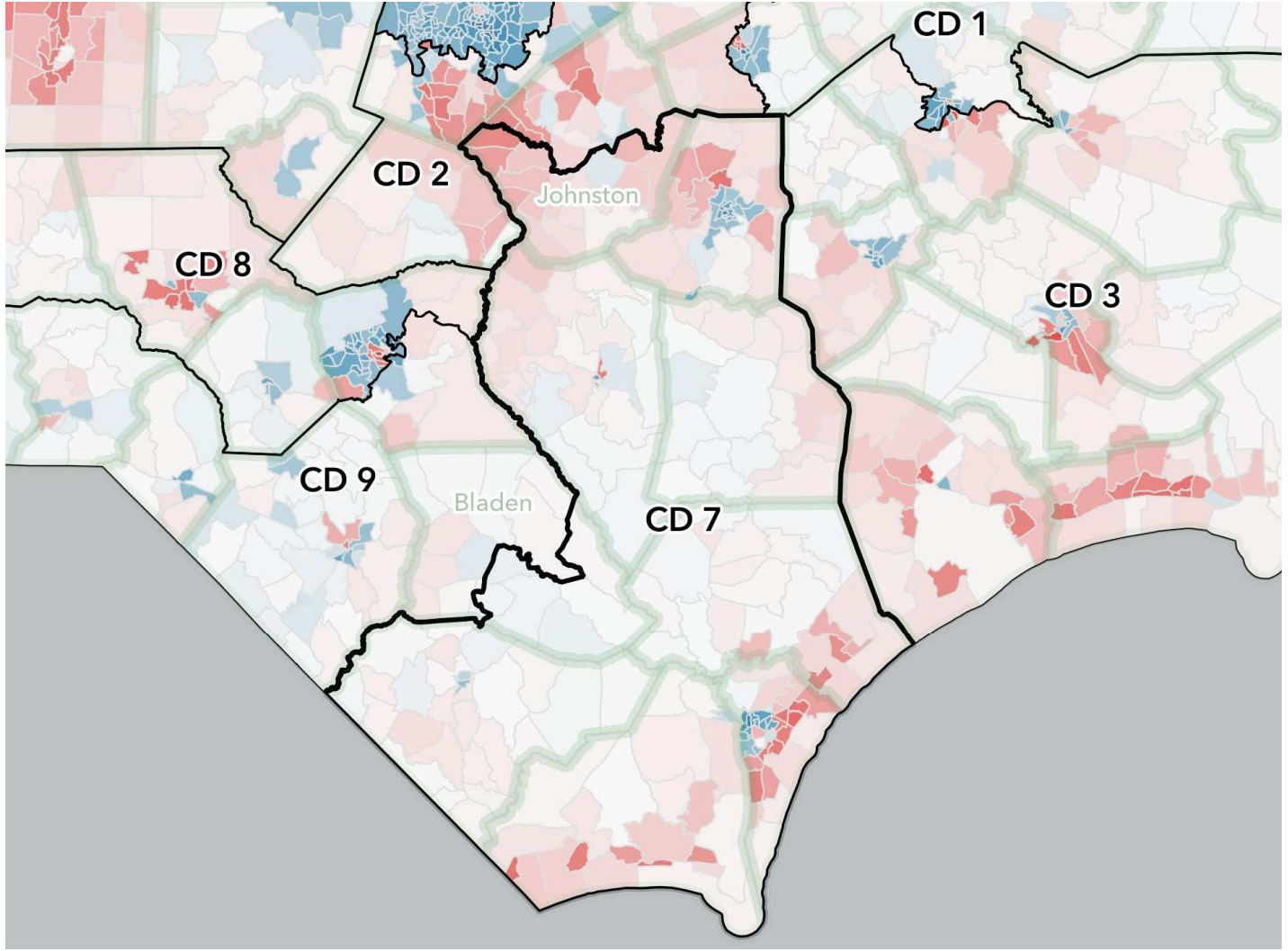
Congressional District 5



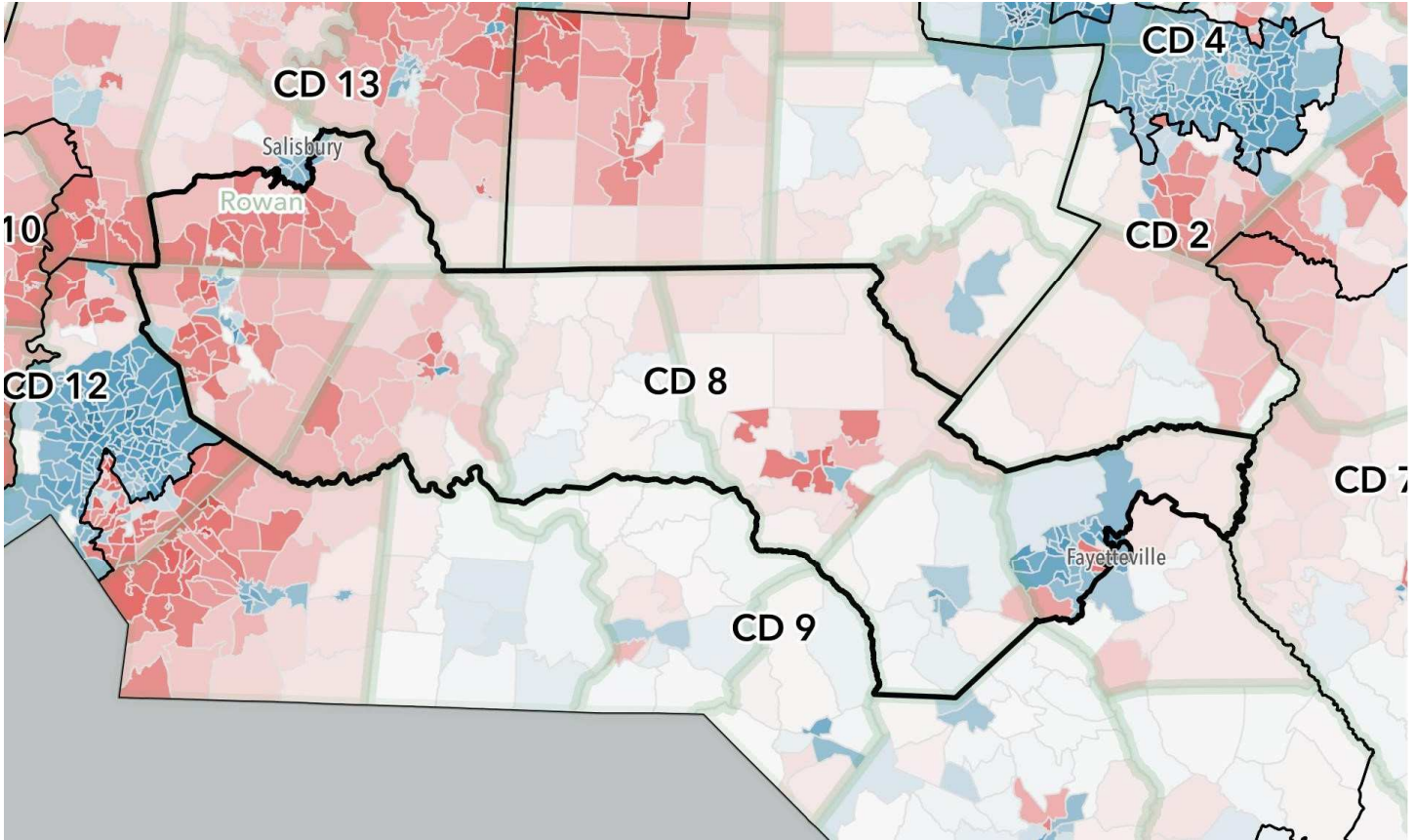
Congressional District 6



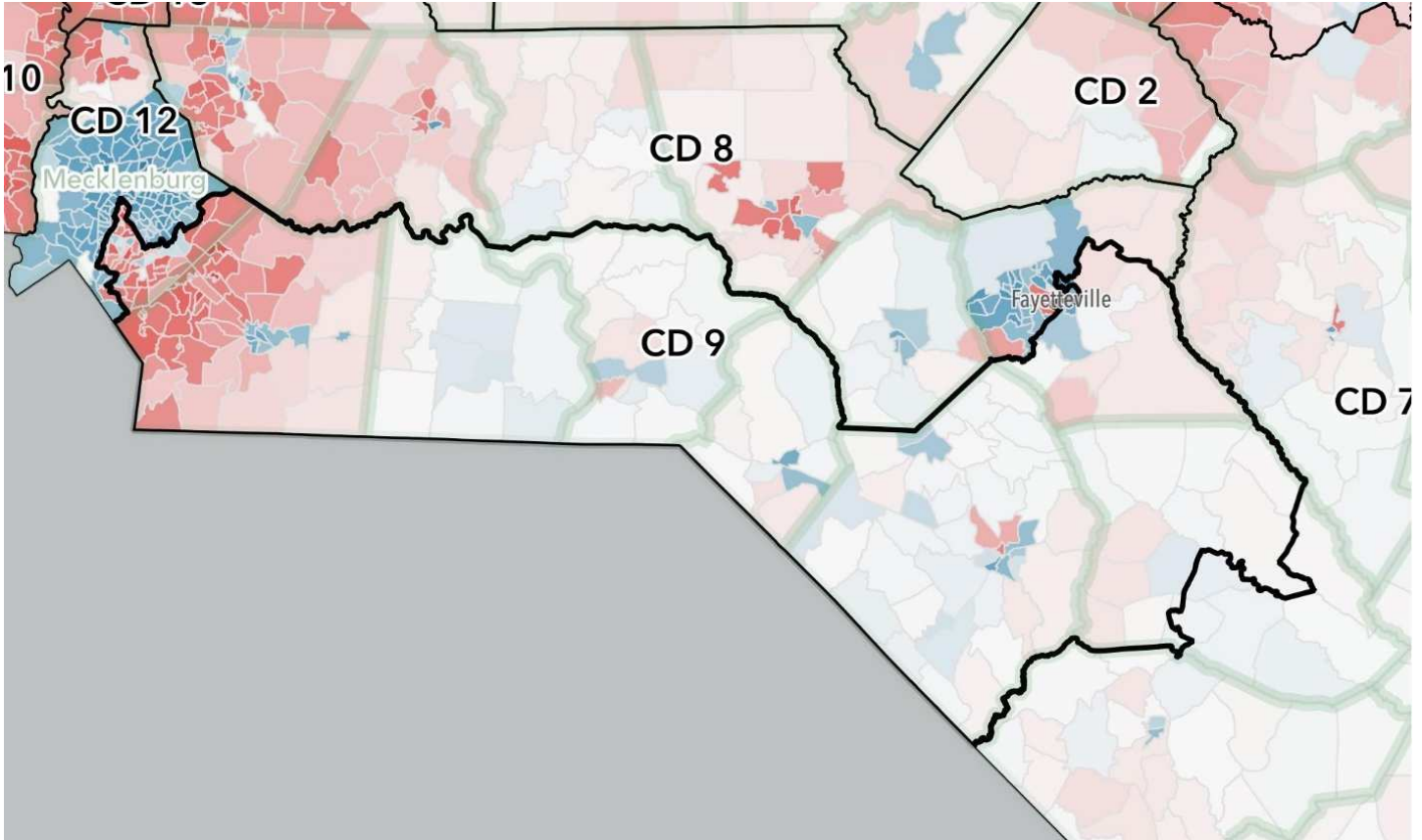
Congressional District 7



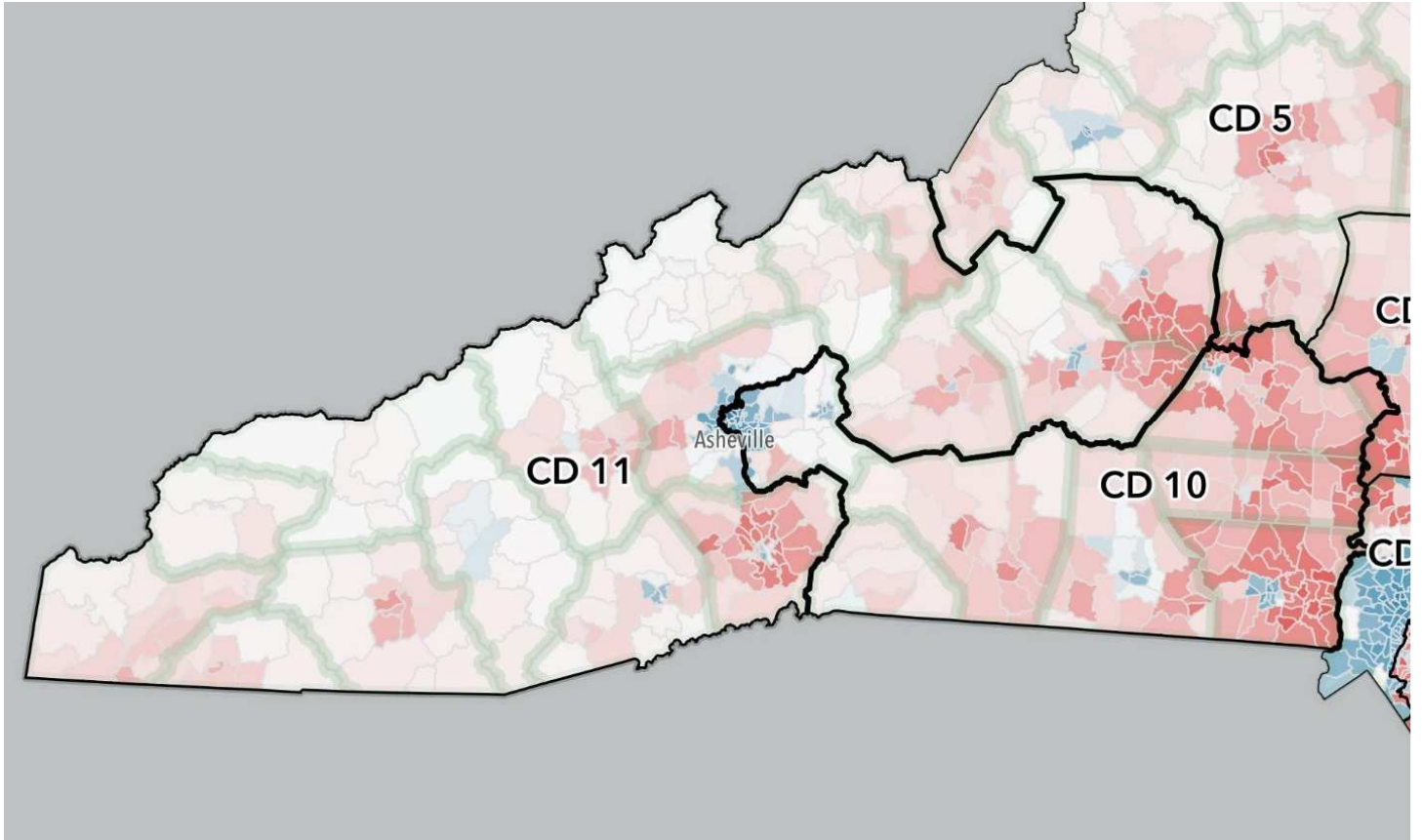
Congressional District 8



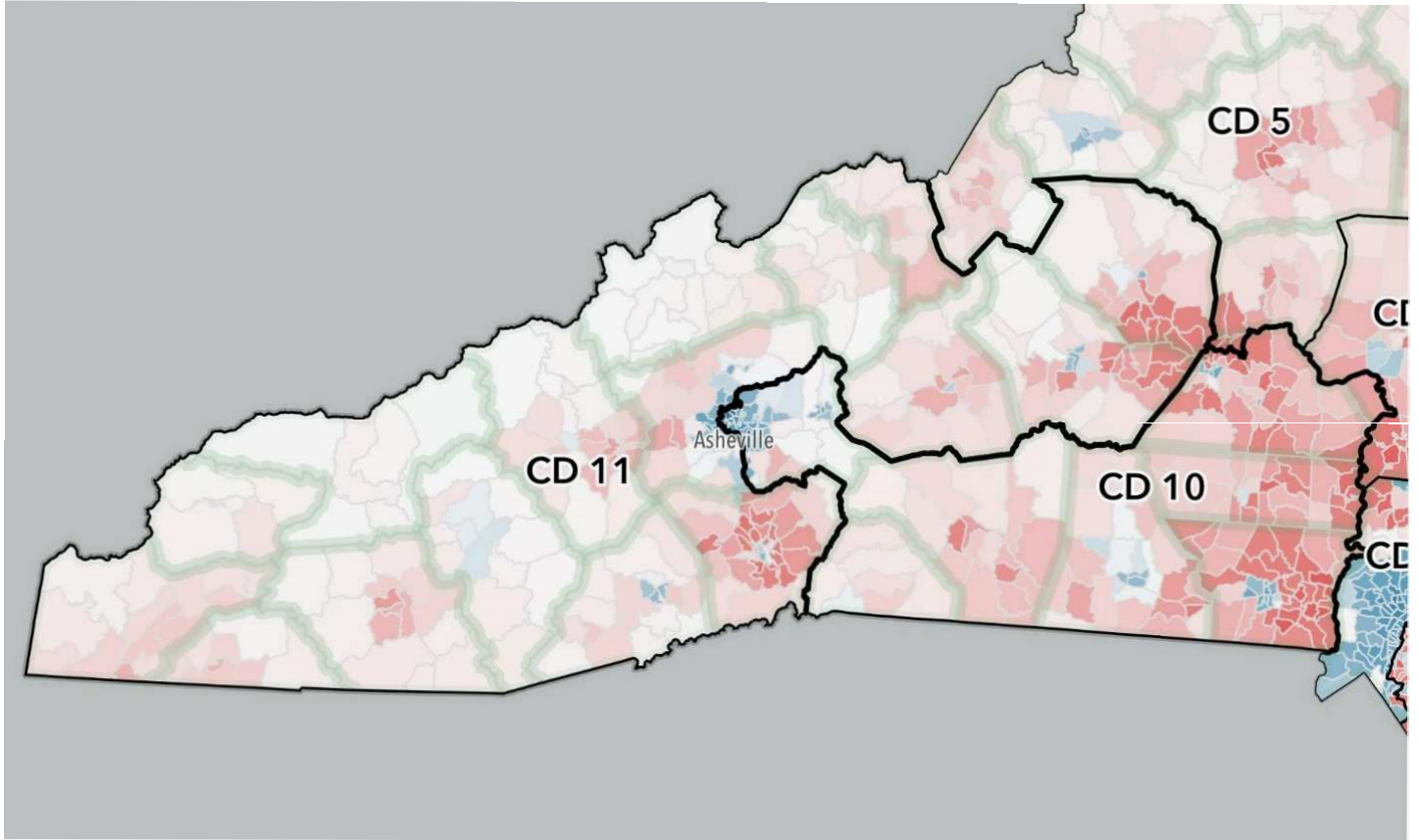
Congressional District 9



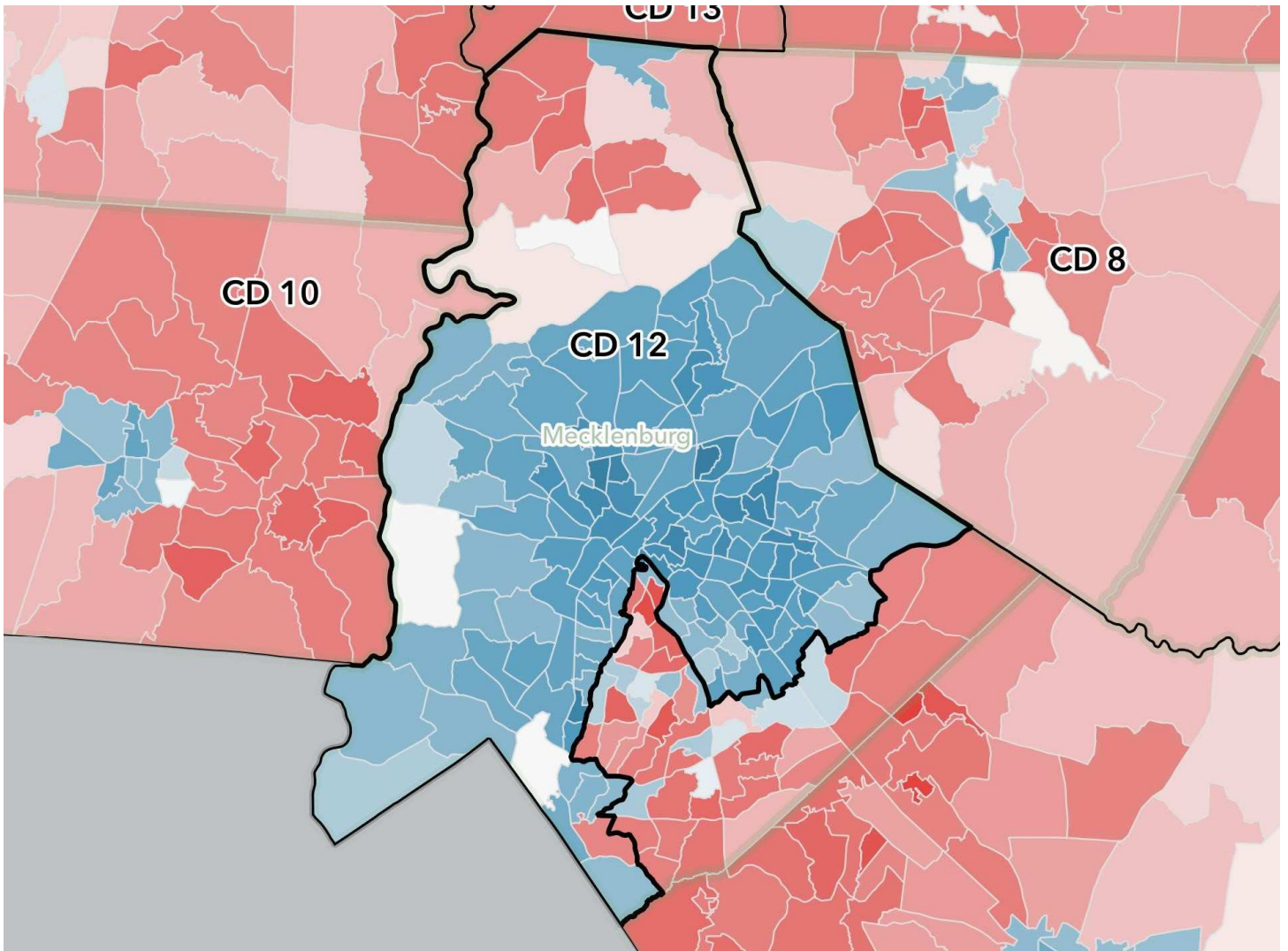
Congressional District 10



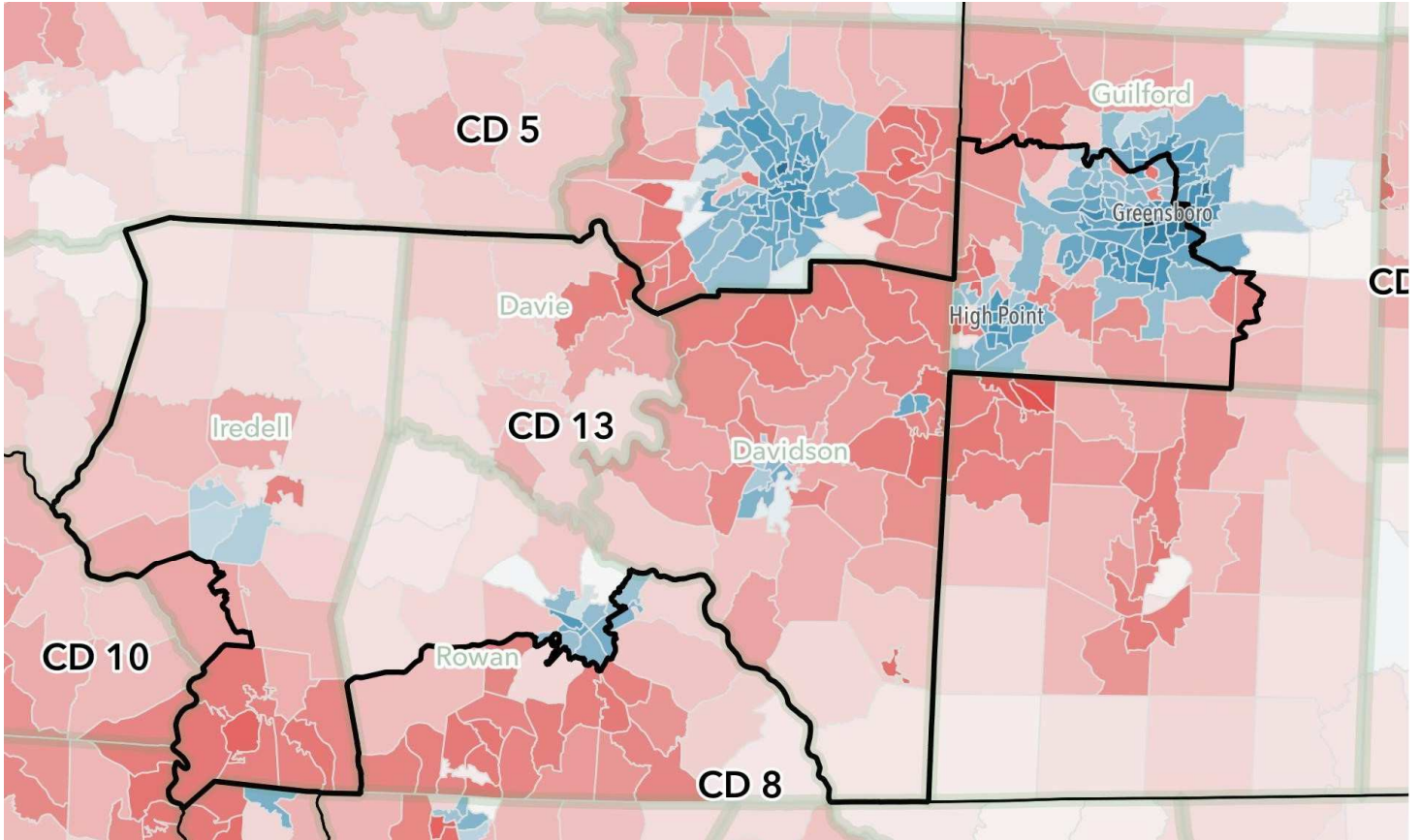
Congressional District 11



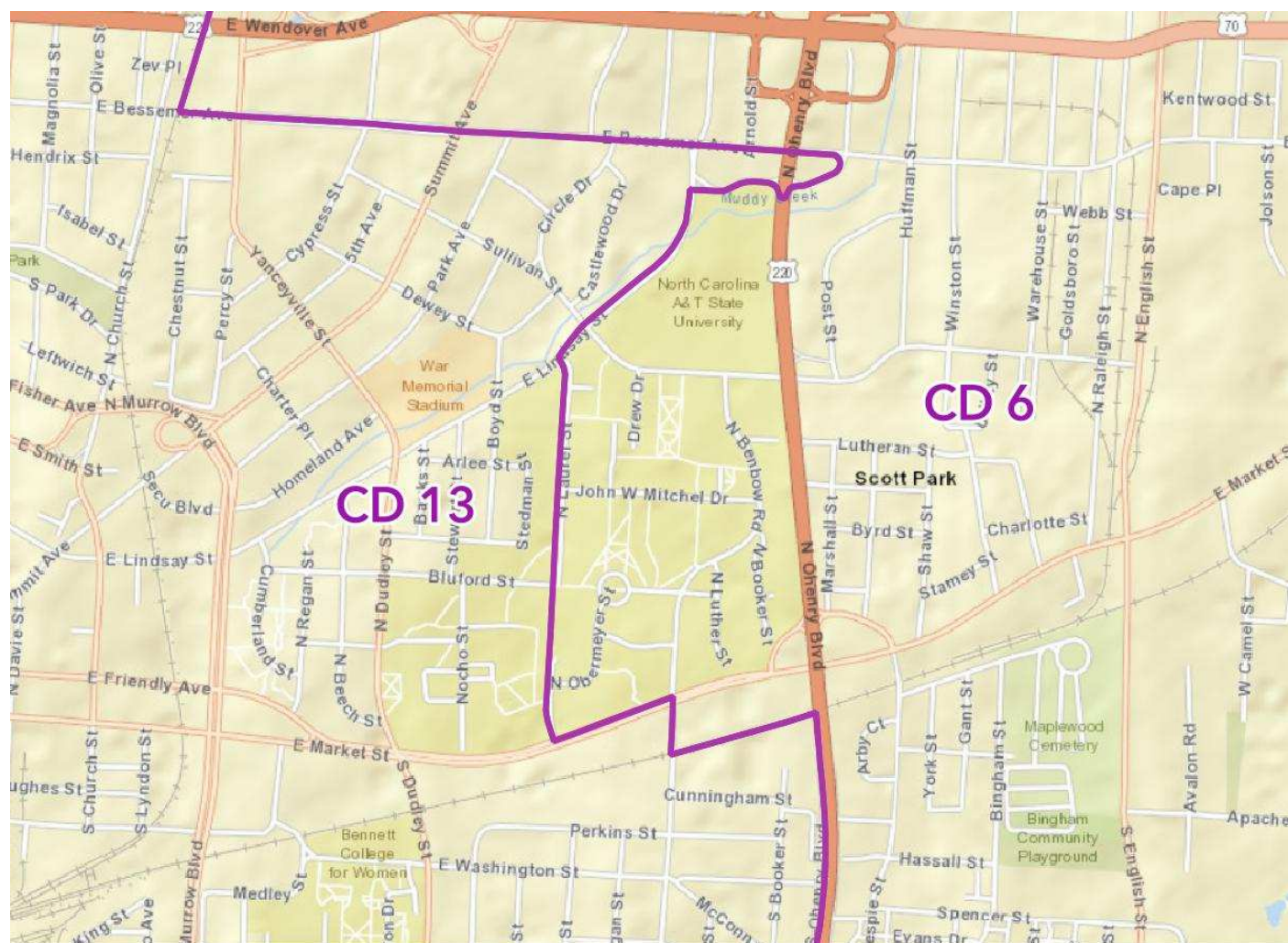
Congressional District 12



Congressional District 13



Splitting of North Carolina A&T State University



Splitting of UNC Asheville



Blakeman B. ("Blake") Esselstyn

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blake@frontwater.com • 828-338-8528

EDUCATION

- University of Pennsylvania, School of Engineering and Applied Science, Master of Computer and Information Technology, 2003; GPA 4.0
- Yale University, Geology & Geophysics and International Studies, Bachelor of Arts, 1996

PROFESSIONAL CERTIFICATIONS

- Geographic Information Systems Professional (GISP), #6946, 2009
- American Institute of Certified Planners (AICP), #026364, 2013

EMPLOYMENT (Teaching positions listed separately)

- Redistricting Consultant, EQV Maps (and as Blake Esselstyn), Asheville, NC, 2016-present
- Principal Consultant, FrontWater, LLC, Asheville, NC, 2015-present
- Urban Planner III – GIS Specialist, City of Asheville Department of Planning and Urban Design, Asheville, NC, 2008-2015
- Urban Planner II, City of Asheville Planning Department, Asheville, NC, 2004-2008
- Independent GIS Consultant, Freelance, Asheville, NC, 2003-2004
- GIS Programmer, Azavea, Inc., Philadelphia, PA, 2002
- Web Support Fellow, University of Pennsylvania, Philadelphia, PA, 2002
- GIS Analyst, Applied Geographics, Inc., Boston, MA, 2001
- GIS Intern, Community and Environmental Spatial Analysis Center, Seattle, WA, 2000
- GIS Analyst, Applied Geographics, Inc., Boston, MA, 2000
- Mapping Technician, Schlosser Geographic Systems, Seattle, WA, 1997
- Digital Mapping Resources Consultant, Social Science Statistical Laboratory at Yale University, New Haven, CT, 1997
- Special Assistant to the CityRoom Coordinator, Neighborhood Partnerships Network, New Haven, CT, 1996-1997
- Lab Monitor, Center for Earth Observation at Yale University, New Haven, CT, 1995

TEACHING EMPLOYMENT

- Adjunct Faculty, Lenoir-Rhyne University, Asheville, NC, 2019
Taught full-semester graduate-level Geographic Information Systems (GIS) course
- Adjunct Faculty, Western Carolina University, Asheville, NC, 2017
Taught full-semester graduate-level GIS course
- GIS Course Assistant, University of Pennsylvania, Philadelphia, PA, 2002-2003
Served as teaching assistant for two undergraduate GIS semester courses
- Teacher, Equity American School, Guatemala City, Guatemala, 1998-1999
Led mathematics department for grades 7-12; taught one technology course
- Teacher, International School of Panama, Panama City, Republic of Panama, 1997-1998
Taught computer programming and mathematics to secondary school students

SPEAKER OR PANELIST

- “Methods and Techniques in Redistricting,” Harvard Geography of Redistricting Conference, Cambridge, MA, 2019
- “Redistricting Software: A new generation of geospatial tools,” North Carolina GIS Conference, Winston-Salem, NC, 2019
- “The Latest Mapping Technology,” Reason, Reform & Redistricting Conference, Duke University, Durham, NC, 2019
- “What are all These Districts? How did We Get Here, and Redistricting Reform,” Grassroots Democracy: A Nonpartisan Voter Education Series, Leicester, NC, 2019
- “Re-GIS-tracting? A new generation of redistricting geo-tools,” Mountain Regional GIS Alliance, Asheville, NC, 2019
- “Representing (mis)representation,” Tapestry Data Storytelling Conference, University of Miami, Miami, FL, 2018
- “A Redistricting Tour,” Democracy in our Hands Conference, Asheville, NC, 2018
- “Dis-tricks: GIS and Public Understanding of Redistricting,” NC ArcGIS Users Group, Asheville, NC, 2018
- “Visual Explanations of Gerrymandering,” Highlands Indivisible, Highlands, NC, 2018
- “Dave’s Redistricting App,” Metric Geometry of Gerrymandering Workshop, University of Texas, Austin, TX, 2018
- “Districting Voter Education Forum,” Democracy North Carolina, Asheville, NC, 2017
- “When GIS leads planners astray,” American Planning Association National Conference, New York, NY, 2017

- “Conveying Uncertainty with GIS,” Azavea, Philadelphia, PA, 2017
- “GISkepticism,” Appalachian State University, Boone, NC, 2017
- “When GIS leads planners astray,” North Carolina Planning Conference, American Planning Association North Carolina Chapter, Asheville, NC, 2016
- “What if the ‘S’ in GIS stood for Skepticism?” Mountain Regional GIS Alliance, Asheville, NC, 2015
- “Open Data? Show Me the Money!” North Carolina GIS Conference, Raleigh, NC, 2015

TEACHING AS SINGLE-CLASS GUEST SPEAKER (On redistricting and/or GIS)

- Lenoir-Rhyne University, Public Policy Processes Course (speaking on redistricting), 2019
- Western Carolina University, Geographic Information Systems Course (speaking on GIS), 2019
- Duke University, Democracy Lab Seminar (speaking on redistricting software tools), 2018
- University of North Carolina Asheville, Political Science: US Elections Course (speaking on redistricting), 2018
- University of North Carolina Asheville, Mathematics: Voting Theory Course (speaking on redistricting), 2018
- Lenoir-Rhyne University, Sustainability Management & Decision Making Course (speaking on GIS/location intelligence), 2018
- Yale University, School of Organization and Management: Business Information Course (speaking on Maptitude—one class + multiple labs), 1997

LITIGATION EXPERIENCE (As GIS expert)

- Expert witness analysis, deposition, and testimony for City of Asheville, in *Jensen v. City of Asheville*, Buncombe County Superior Court, 2009-2010
- Expert witness analysis and testimony for City of Asheville, in *Hall v. City of Asheville*, Buncombe County Superior Court, 2007
- Expert witness analysis and testimony for City of Asheville, in *Arnold v. City of Asheville*, Buncombe County Superior Court, 2005

PUBLIC REDISTRICTING PROJECT EXPERIENCE

- Software operator and presenter, National Conference of State Legislatures Redistricting Seminar: Redistricting Simulation, Providence, RI, 2019

- Hands-on GIS software workshop session leader, Metric Geometry of Gerrymandering Group (MGGG) Conference at the University of Texas, Austin, TX, 2018
- Co-leader of redistricting hackathon, Metric Geometry of Gerrymandering Group (MGGG) Conference at Duke University, Durham, NC, 2017
- Preparation of simulated redistricting plans for Democracy North Carolina's Districting Voter Education Forum, Asheville, NC, 2017
- Hands-on GIS software workshop session assistant, Metric Geometry of Gerrymandering Group (MGGG) Conference at Tufts University, Medford, MA, 2017
- Preparation of redistricting map exhibits used in *Vesilind v. Virginia State Board of Elections* trial, Richmond, VA, 2017
- Redistricting software operator (converting retired jurists' instructions into maps), Duke University and Common Cause NC independent redistricting commission simulation, Raleigh, NC and Winston-Salem, NC, 2016

MEDIA APPEARANCES, OP-EDS, AND CITATIONS

- "With No Supreme Court End to Gerrymandering, Will States Make It More Extreme?" (citation/link of blog article), *New York Times*, June 28, 2019
- "The Supreme Court takes on gerrymandering. A cottage industry wants to prove it's gone too far," *USA Today*, March 26, 2019
- "Gerrymandering: 'Packing' and 'Cracking,' the meat and potatoes of partisan redistricting," *USA Today*, March 25, 2019
- "NC gerrymandering: Turner, McGrady lead reform effort on redistricting" *Asheville Citizen-Times*, February 14, 2019
- "Looking for a Way Forward on Redistricting Reform," *Duke Today*, January 28, 2019
- "Will Asheville try to stop the state from splitting it into districts?" (map citation), *Asheville Citizen-Times*, January 23, 2019
- "Some takeaways from NC's elections," WRAL.com, Nov 7, 2018
- "New Asheville districts are racial gerrymandering, black council members say" *Asheville Citizen-Times*, July 2, 2018
- "Legislature sets up districts for Asheville council, eliminates primaries" (map citation), *Asheville Citizen-Times*, June 27, 2018
- "Van Duyn to back Asheville council districts bill if Senate shifts election dates" (map citation), *Asheville Citizen-Times*, June 21, 2018
- "I Ran the Worst 5K of My Life So I Could Explain Gerrymandering to You," *POLITICO Magazine*, November 15, 2017

- “Event to cover Nov. vote on City Council districts,” *Asheville Citizen-Times*, October 17, 2017
- “Who makes the grade? This week’s editorial report card,” *Asheville Citizen-Times*, June 2, 2017
- “Asheville grows; Charlotte, Raleigh and their suburbs grow faster,” *Asheville Citizen-Times*, May 29, 2017
- “Boundary issues: Where does Asheville end?” (op-ed), *Mountain Xpress*, April 29, 2016
- “For better or worse, Asheville growth inevitable,” *Asheville Citizen-Times*, November 21, 2015
- “St. Lawrence Green no litmus test for voters” (op-ed), *Mountain Xpress*, October 29, 2015

REDISTRICTING AND GIS SOFTWARE EXPERIENCE

- MapInfo (first used 1996)
- Maptitude (first used 1997)
- Esri ArcGIS/ArcInfo/ArcView (first used 2000)
- QGIS (first used 2015)
- Maptitude for Redistricting (first used 2016)
- Dave’s Redistricting App (first used 2016)
- DistrictBuilder (first used 2017)
- Esri Redistricting (first used 2018)
- Districtr (first used 2019)

SELECTED AWARDS (As team member)

- G. Herbert Stout Award for Visionary use of GIS by Local Government, 2009
- International Economic Development Council, Excellence in New Media Initiatives, 2008
- Marvin Collins Outstanding Planning Award for Innovations in Planning Services, Education, and Public Involvement, 2007

ADDITIONAL TRAINING

- Public Data, Public Access, Privacy, and Security: U.S. Law and Policy, Urban and Regional Information Systems Association Certified Workshop, Raleigh, NC, 2015
- An Overview of Open Source GIS Software, Urban and Regional Information Systems Association Certified Workshop, Portland, OR, 2012

- An Introduction to Public Participation GIS: Using GIS to Support Community Decision Making, Urban and Regional Information Systems Association Certified Workshop, Orlando, FL, 2010
- 3-D Geospatial Best Practices and Project Implementation Methods, Urban and Regional Information Systems Association Certified Workshop, Vancouver, BC (Canada), 2006

BOARDS AND COMMISSIONS

- Asheville City Council Appointee to Comprehensive Plan Advisory Committee, 2016-2018

MEMBERSHIPS

- Urban and Regional Information Systems Association (URISA)
- Mountain Regional GIS Alliance (MRGAC)
- American Planning Association (APA)