

**Empirical Validation of Automated Redistricting Algorithms on the Virginia  
House of Delegates District Map**

Madeleine Goertz

International Community School

AP Research

Randall S. Huberman

May 20th, 2021

alg	trial	ecc	fh	pp_mean
mcmc	1	0.784866	1.678526e+21	0.185165
	2	0.784294	1.678555e+21	0.184780
	3	0.784008	1.677068e+21	0.184687
	4	0.784008	1.677068e+21	0.184687
	5	0.784008	1.677068e+21	0.184687
	6	0.784008	1.676646e+21	0.184720
	7	0.784008	1.676646e+21	0.185360
	8	0.783436	1.676744e+21	0.185229
	9	0.783436	1.676744e+21	0.185229
	10	0.783436	1.675499e+21	0.183432
mean		0.783951	1.677056e+21	0.184798
smc	1	0.806036	2.001572e+21	0.176354
	2	0.806036	2.001572e+21	0.176354
	3	0.802317	2.005584e+21	0.163962
	4	0.805750	2.001562e+21	0.172670
	5	0.804606	2.002002e+21	0.167393
	6	0.802317	2.005584e+21	0.163962
	7	0.805750	2.001562e+21	0.172670
	8	0.805750	2.001562e+21	0.172670
	9	0.786297	2.077378e+21	0.151051
	10	0.805750	2.001562e+21	0.172670
mean		0.803061	2.009994e+21	0.168975
crsg	1	0.784866	1.678526e+21	0.185340
	2	0.764554	1.962559e+21	0.183930
	3	0.767987	1.936322e+21	0.182814
	4	0.798026	1.751283e+21	0.190145
	5	0.762838	1.833482e+21	0.145040
	6	0.773995	2.690831e+21	0.168296
	7	0.816335	1.530762e+21	0.190293
	8	0.770848	1.576994e+21	0.155229
	9	0.817194	1.438603e+21	0.176485
	10	0.787727	1.616352e+21	0.170227
mean		0.784437	1.801572e+21	0.174780
control	1	0.777428	2.154162e+21	0.185835