

# CHOICE VOTING: ONE YEAR LATER

CHRISTOPHER JERDONEK  
SONNY MOHAMMADZADEH

## CONTENTS

1. Introduction	1
2. Choice Voting Background	2
3. Part 1 of Analysis: Slate Representation	3
4. Part 2 of Analysis: Candidate Representation	10
5. Answers to Concerns about Choice Voting	11
6. What about a weighted point system?	12
7. Recommendations	14
Appendix A: Choice Voting in Practice	14
Appendix B: Slate Data of Past ASUCD Elections	15
Appendix C: Borda Count Weighted Point Data	17
Appendix D: Some Quotes in Support of Choice Voting	18

## 1. INTRODUCTION

The ASUCD student body passed Choice Voting just over one year ago to correct significant problems of representation in the previous voting system. Voters passed the Choice Voting Amendment with a clear 67% mandate. Proponents say that Choice Voting empowers students by guaranteeing all student voters full and equal representation on the ASUCD Senate.

In this document we compare Choice Voting's initial performance against this standard. We analyze the first two ASUCD Choice Voting elections in detail. We conclude that Choice Voting succeeded highly in its aims.

Voting systems above all are for the voters. Good voting systems represent voters well. Our analysis focuses on the fundamental question of how well Choice Voting represented ASUCD voters. We analyze whether each election outcome gave *equal representation to all student voters*. If Choice Voting passes this fundamental test, then Choice Voting has succeeded.

We use two distinct methods to analyze the 2003-2004 ASUCD Elections. In Part 1 of our analysis, we focus on voters' slate preferences to give a broad measure

---

*Date:* April 14, 2004.

Christopher Jerdonek is a Ph.D. student in the UC Davis Mathematics Department and can be reached at [jerdonek@math.ucdavis.edu](mailto:jerdonek@math.ucdavis.edu). Sonny Mohammadzadeh is an undergraduate student in the UC Davis Mathematics Department and can be reached at [smohammadzadeh@ucdavis.edu](mailto:smohammadzadeh@ucdavis.edu).

of representation. In Part 2 we analyze voters' candidate preferences. This gives us a more precise measure.

As ASUCD grows more accustomed to Choice Voting, we hope that more students will come to understand and appreciate its benefits. Choice Voting is still a new system, and ASUCD can play a positive role in ensuring that students understand these benefits.

ASUCD should take pride in its initial success with Choice Voting. We hope that ASUCD looks forward to more successes in the future.

## 2. CHOICE VOTING BACKGROUND

The purpose of Choice Voting is to ensure that all voters have full, equal, and accurate representation on the ASUCD Senate. We outline these goals here.

### **Goals of Choice Voting.**

- *Full representation.* To ensure that every voter is represented by someone that she or he supports.
- *Equal representation.* To ensure that every group of voters gets a number of representatives in proportion to the size of the group. This ensures that everyone is represented equally, and not just represented.
- *Accurate representation.* To encourage voters to vote sincerely, so that voter choices accurately reflect their true preferences.

Choice Voting achieves these goals by electing, for each voter, one person that best represents him or her. The ability of Choice Voting to establish a specific voter-legislator relationship is one of its greatest strengths.

This aspect of Choice Voting is similar to district elections. The difference is that with Choice Voting, voters get to group themselves into their own equal-sized "districts."

In the end, each district is composed of like-minded voters, and each district is represented by a like-minded Senator. Almost every voter can point to someone on the Senate and say, "hey, that's the Senator that represents me!"

**How Choice Voting works.** Each voter ranks as many candidates as they like in order of preference. Ranking more candidates cannot hurt a voter's higher choices. The ballot instructions tell this to the voter. This is because a later choice cannot count until all higher choices have been either eliminated or elected.

When the polls close, ASUCD Creative Media uses a computer algorithm called STV to count the votes. The algorithm works like this. First the winning threshold is calculated. The winning threshold equals one more than  $1/7$  the total number of voters. This number is like the size of a Senator's "district," using the above analogy.

First the top choice votes are counted. If any candidate reaches the winning threshold, they are elected. If a candidate obtains more than the threshold of votes, then each voter supporting that candidate has the excess fraction of their vote count towards their next candidate listed.

If no candidate reaches the threshold, the least-preferred candidate is eliminated from the race. Voters for that candidate have their votes transferred to the next candidates listed on their ballots.

At any time, if an elected or eliminated candidate receives votes by the above process, those votes automatically transfer to the next candidate listed on those voters' ballots. This ensures that every voter's vote is used to its full potential. This process continues until all 6 Senators are elected.

### **Benefits of Choice Voting.**

- *Guarantees representation to 86% of the voters.*  
Each senator represents 1/7 of the voters, and there are 6 senators. Thus Choice Voting guarantees representation to  $6/7=86\%$  of the voters.
- *Gives all voters equal representation.*  
All voters get one vote. Choice Voting ensures that every voter has the same number of votes going to winners as everyone else. Thus all voters have an equal say in the outcome.
- *Voters are free to rank only a few candidates without weakening their say.*  
It suffices to rank just one strong candidate towards the top. For these voters, their vote will almost certainly count at full value.
- *Voters can focus support on the candidate that best represents them.*  
Choice Voting does not force voters to spread their support over several candidates. Choice Voting can even be amended in this respect. See Section 7: Recommendations.
- *Choice Voting encourages sincere voting.*  
Voters do not waste their vote when they support weak candidates. Moreover, ranking more candidates cannot hurt a voter's higher choices

**Voter turnout.** Voter turnout for the Winter election increased slightly from 4029 in the 2002-2003 Winter election to 4068. Voter turnout for the Fall election cannot be compared to the previous year's turnout because the Campus Expansion Initiative dramatically increased voter turnout. However, voter turnout did increase 7% over the election two years previous. The Fall 2001-2002 election saw 2294 voters while the Fall 2003-2004 election saw 2448.

### 3. PART 1 OF ANALYSIS: SLATE REPRESENTATION

In this section we analyze the representation of voters' slate preferences. We examine slate representation both before and after the adoption of Choice Voting. We also analyze the tendency of voters to vote along slate lines, using data from the first two Choice Voting elections.

We find that in both Choice Voting elections, Choice Voting gave full and equal representation to nearly all voters. We use the terms full and equal in the sense defined in Section 2, Goals of Choice Voting. In contrast, three elections before Choice Voting dramatically failed to represent voters fully and equally.

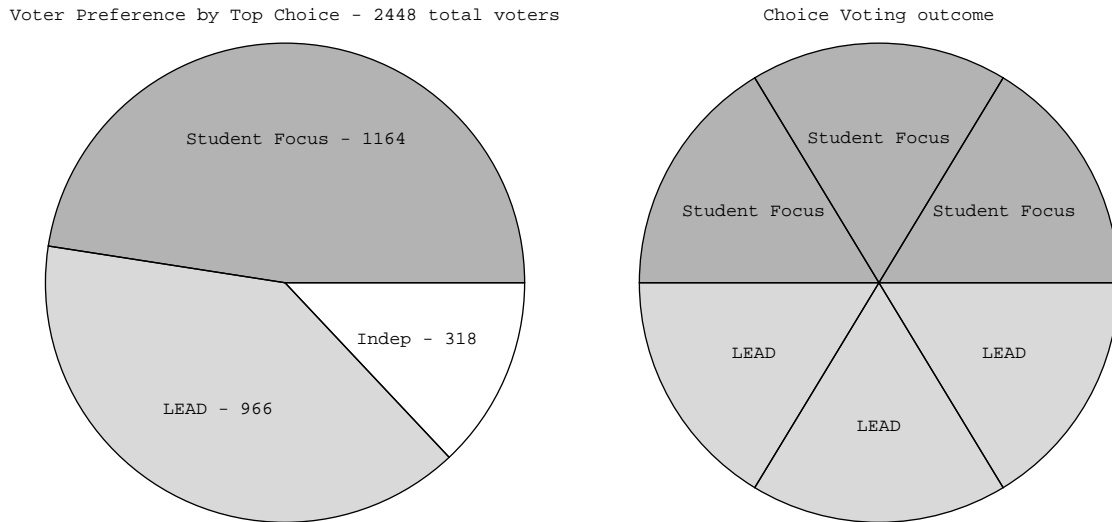


FIGURE 1. Fall 2003-2004 ASUCD Senate election (Choice Voting)

**Conclusion 1.** *Choice Voting has consistently given nearly all voters equal representation with respect to their slate preferences. In the Fall election, 87% of voters got nearly equal representation for their slate. In the Winter election, 100% of voters got equal representation for their slate.*

In both Choice Voting elections, the two slates of Student Focus and LEAD ran candidates. We also view the group of independent candidates as a slate, for the purpose of analysis. This is justified because the data show that independent supporters vote along independent lines at rates higher than voters preferring slates. Thus independent voters compose a “bloc” of voters at least as much as LEAD or Student Focus voters do.

Incidentally, the Winter 2003-2004 ASUCD Senate election saw a win by independent candidate Donald Cohen-Cutler. Cohen-Cutler attributed his win partly to the use of Choice Voting (*California Aggie*, 2/27/04 and 3/4/04). The last time an independent won was over two-and-a-half years ago. Lindsay Crawford was elected as an independent in the Fall 2001-2002 election.

**Slate Representation under Choice Voting.** In both Choice Voting elections, we group the voters into three categories. Is the voter’s top choice candidate a Student Focus candidate, a LEAD candidate, or an independent candidate? We located this data in the first round counts of the ASUCD Choice Voting election reports.

We graph these distributions of voter support in Figures 1 and 2, on the left side. On the right side we graph the resulting Choice Voting outcomes. We show the distribution of each group’s representation, as a fraction of the 6 senate seats.

In the Fall election, Choice Voting represented 87% of the voters by their slate. The voters preferring independent candidates were not represented. They made up  $318/2448=13\%$  of the total voters. This was not quite enough to reach the

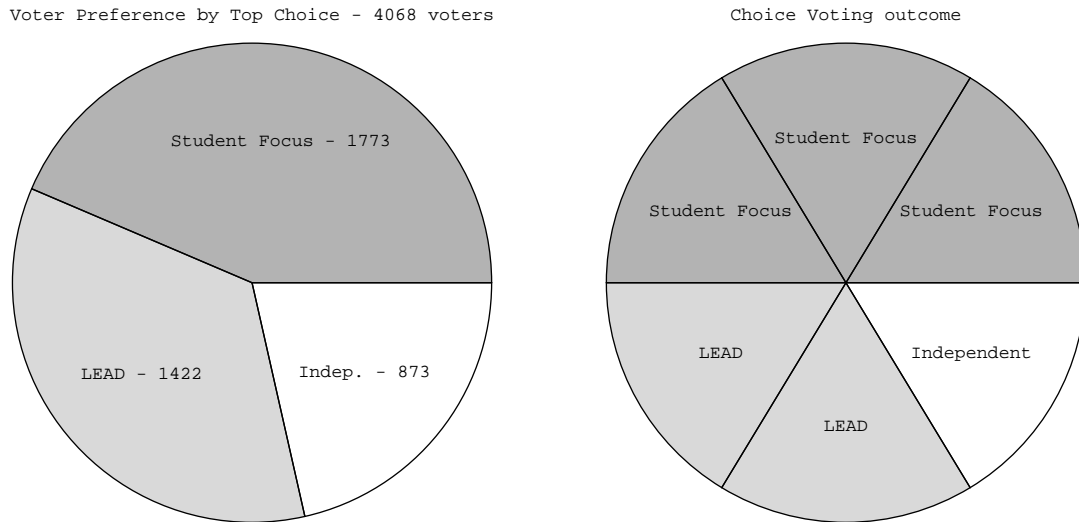


FIGURE 2. Winter 2003-2004 ASUCD Senate election (Choice Voting)

$1/7=14\%$  threshold to gain representation. We see nearly equal representation because Student Focus and LEAD supporters both won representation in approximate proportion to the size of their voter support.

In the Winter election, Choice Voting represented the top slate preferences of 100% of the voters. Again, we see that the representation is remarkably proportional to the initial voter support. In other words, voters received equal representation. Observe also that in this election, independent supporters won a seat with 21% voter support.

It is very informative to contrast these graphs with the same graphs for some elections prior to Choice Voting (Figures 3 through 5). We discuss those graphs at the end of this section, after looking at voting along slate lines.

**Voting along slate lines.** Slate platforms and the dynamics of slate campaigning all support the conventional wisdom that voters tend to vote along slate lines. Here we test and verify this assumption. This further justifies our method of grouping voters into three groups based on their number one choice candidate.

To answer this question, we look at the vote transfers between different rounds of the Choice Voting count. We calculate the extent to which votes are transferred within slates, and compare this to a random situation.

**Conclusion 2.** *In the Fall ASUCD Choice Voting election, vote transfers preserved slate support at a rate 72% higher than would be expected in a random situation. For the Winter, votes transferred within slates at a rate 83% higher than random. The votes of independent supporters transferred to other independents at rates 113% and 140% higher than random, respectively.*

Note that our analysis does not include the votes that have already gone towards electing candidates. This type of analysis requires looking at the full election data. We expect that this type of analysis would only magnify our conclusion.

We show the data in Tables 1 and 2. The SLATE column shows the slate of the eliminated or elected candidate. The TOTAL column shows the total number of votes transferred to other candidates. We exclude exhausted ballots in the total. Exhausted ballots say nothing about further slate preferences.

The RATIO column shows the ratio of same-slate candidates left to the total number of candidates left. The RANDOM column shows the number of votes that one would expect to transfer within slate in a random situation. This number is obtained as  $TOTAL * RATIO = RANDOM$ . The ACTUAL column shows the number of votes that were actually transferred within slates.

We total the various transfer numbers and compare the actual within-slate transfer amount to the random within-slate transfer amount. We divide the ACTUAL total by the RANDOM total and show this percentage. We find that voters tend more often than not to vote along slate lines.

ROUND	SLATE	TOTAL	RATIO	RANDOM	ACTUAL
Round 2	Indep.	6	4/15	2	4
Round 3	Indep.	51	3/14	11	27
Round 4	Indep.	71	2/13	11	15
Round 5	Indep.	101	1/12	8	22
Round 6	LEAD	4	4/11	1	3
Round 7	LEAD	127	3/10	38	99
Round 8	Indep.	N/A	0/9	N/A	N/A
Round 9	Focus	144	5/8	90	114
Round 10	LEAD	156	2/7	45	128
Round 11	LEAD	47	1/6	8	38
Round 12	Focus	6	4/5	5	5
Round 13	Focus	123	3/4	92	95
Round 14	Focus	20	2/3	13	17
Round 15	Focus	175	1/2	88	143
TOTAL		1031		412	710
				710/412	= 172%

TABLE 1. This chart shows the informative vote transfers for the Fall 2003-2004 ASUCD election. The chart shows that votes were transferred to slate-mates (or fellow independents) at a rate 72% higher than for a random situation. In other words, voters tend to vote along slate lines as one would expect.

ROUND	SLATE	TOTAL	RATIO	RANDOM	ACTUAL
Round 2	Indep.	149	2/13	23	56
Round 3	LEAD	163	4/12	54	131
Round 4	LEAD	201	3/11	55	82
Round 5	Focus	197	5/10	99	139
Round 6	Focus	284	4/9	126	166
Round 7	LEAD	3	2/8	1	2
Round 8	Focus	322	3/7	138	262
Round 9	Indep.	13	1/6	2	4
Round 10	LEAD	330	1/5	66	192
Round 11	LEAD	N/A	0/3	N/A	N/A
TOTAL		1662		564	1034
				1034/564 = 183%	

TABLE 2. This chart shows the informative vote transfers for the Winter 2003-2004 ASUCD election. The chart shows that votes were transferred to slate-mates (or fellow independents) at a rate 83% higher than for a random situation. In other words, voters tend to vote along slate lines as one would expect.

**Slate Representation under Plurality Voting (before Choice Voting).** In this section we illustrate how ASUCD's old plurality voting system failed to represent the voters in at least three recent occasions. We illustrate this by calculating the voter support for each slate and then comparing this breakdown to the amount of representation awarded each slate.

It is worth noting that nearly all at-large multi-winner elections in the U.S. use the same plurality voting system that ASUCD used to use. For instance, Davis city council elections use a plurality voting system to elect either 2 or 3 city council members at a time. All U.S. plurality elections are likely to suffer the same deficiencies shown here. However, it can be more difficult to document this without clear groups of slates. Since ASUCD elections have slates, the effect is easily visible.

We analyze the Winter 2002-2003 Senate election, the Fall 2001-2002 election, and the Winter 2000-2001. The election data from these elections is located in Appendix B. In each case, we compute the total vote won by all candidates on each slate. We show these distributions in the pie charts at the left of Figures 3 through 5. We compare this to the amount of representation won by each slate in the outcome. We show the outcomes on the right side of Figures 3 through 5.

In these elections we see a dramatic misrepresentation of voters. In the Winter 2002-2002 ASUCD election, we see minority rule. The Student Focus slate won  $5/6=83\%$  of all senate seats with only 49% student support. In the Fall 2001-2002 ASUCD election, we see minority rule. The UNITE slate won 83% of the senate seats with only 41% of voter support. In the Winter 2000-2001 ASUCD Senate election,

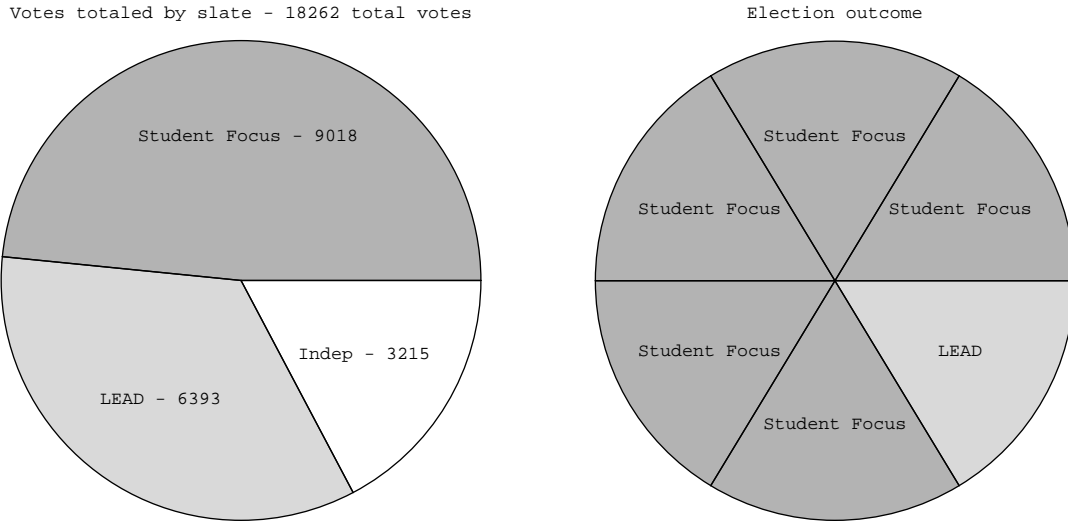


FIGURE 3. Winter 2002-2003 ASUCD Senate election (before Choice Voting)

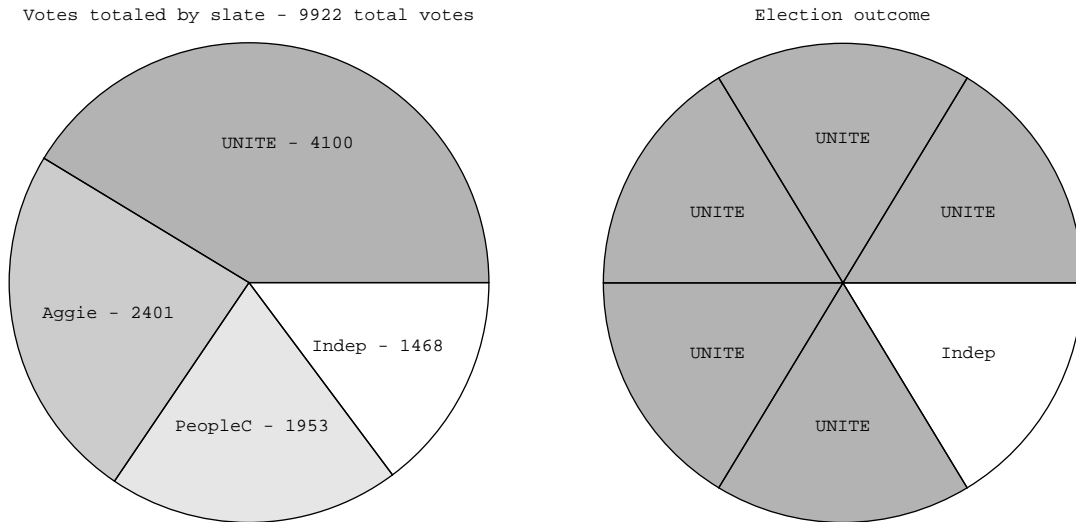


FIGURE 4. Fall 2001-2002 ASUCD Senate election (before Choice Voting)

we see that LEAD won 100% of all senate seats with only 58% student support. This left 42% of voters without representation. It is worth noting that this lop-sided outcome was accompanied by feelings of intense bitterness. This led the opposing candidates to wage a prolonged election dispute.



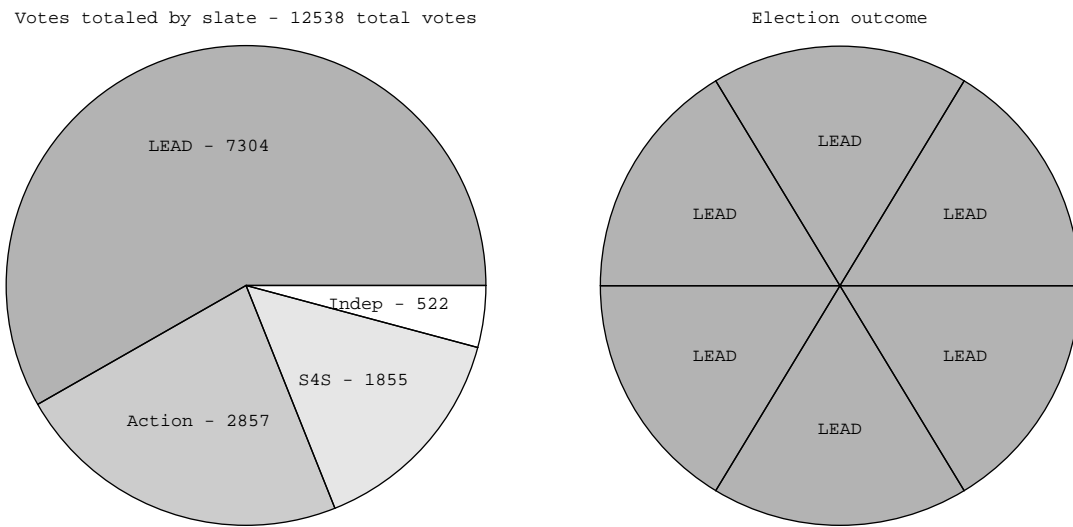


FIGURE 5. Winter 2000-2001 ASUCD Senate election (before Choice Voting)

## 4. PART 2 OF ANALYSIS: CANDIDATE REPRESENTATION

In this section we analyze the ability of Choice Voting to represent voters' individual candidate preferences. By looking at the first round count, we are able to calculate the percentage of voters that elected their top choice candidate. We include the data below in Tables 3 and 4.

**Conclusion 3.** *Choice Voting optimally represented a supermajority of voters in both elections. In the Fall election, 61% of voters elected their top choice. In the Winter election, 55% of voters elected their top choice.*

Note that full election data would allow us to calculate the percentage of voters that elected one of their top two choices, one of their top three choices, and so on. We expect these percentages to be even higher. This would show even greater voter satisfaction.

#1 VOTES	CANDIDATE
327	Assagai
297	Yu
272	Ackerman
240	Sanchez
196	Goren
151	Quizon
1483	TOTAL
2448	TOTAL VOTES
1483/2448	=61%

TABLE 3. Winning Candidates in Fall 2003-2004 ASUCD Election

#1 VOTES	CANDIDATE
461	Barr
449	Cohen-Cutler
383	Engel
342	Bang
336	Holloway
270	Shende
2241	TOTAL
4068	TOTAL VOTES
2241/4068	=55%

TABLE 4. Winning Candidates in Winter 2003-2004 ASUCD Election

## 5. ANSWERS TO CONCERNS ABOUT CHOICE VOTING

- *“Majority will does not determine the ultimate outcome, which is contrary to American political tradition.”*

Majority rule need explicitly come into play only when the legislature decides on legislation. All voters have a right to representation in the legislature by someone they support. This ensures that majority decisions in the legislature will in fact represent a majority of the people. If the majority can determine the entire legislature, then a majority decision could represent as little as  $50\% * 50\% = 25\%$  of the voters.

- *“Gives too much power to minority will.”*

Choice Voting empowers all voters equally and treats minorities no differently. It gives every voting group an amount of representation equal to the group’s size. Arbitrarily small groups cannot get their own representation.

- *“Voters are forced to rank candidates that they may prefer equally.”*

The goal of choice voting, in principle, is to choose *one* person who will represent *you*. You rank several to make sure that one of your preferred representatives actually wins. The ability of choice voting in most cases to establish a specific voter-legislator relationship is one of its great strengths.

- *“Voters only have one vote, when there are six open positions.”*

All voters deserve to have one representative elected by their vote. Other legislators represent other people. It is not my business to say who should represent you if somebody else is representing me. With this arrangement, everybody has an equal voice. If I have the power to choose the other 5, then I have the power to get all the representation and deny representation to others, which is unfair.

This aspect of choice voting is similar to the district system that we use: there are 80 members of the state assembly, but I only get to vote for one. The difference is that with choice voting, I get to help define my own district rather than have politicians narrow my options to one or two candidates.

- *“Losing candidates exert more influence on the final outcome by redistributing their votes to candidates still in the race, however, winners have little influence on the outcome.”*

Candidates do not influence election results, it is the voters who determine election results. The voters’ ordered preferences determine how votes are distributed. Voters for a candidate whose votes are transferred don’t have more influence than any other voter. It’s just that their votes change while others’ votes don’t.

Once a candidate has won, voters for that candidate don’t deserve to have twice as much representation as everyone else, so it makes sense that, up to that candidate’s share of votes, his/her voters don’t have additional effect.

- *“Winners may become arbitrary in latter rounds depending on which candidates lose first, and where their support falls.”* The procedure for eliminating losers is well established as the “runoff” method and reflects natural strategies preferred by voters and candidates. An example is this year’s Democratic primary and last year’s recall election, where candidates conceded in rough order of their popularity.
- *“System is not understood by a good number of voters.”* This problem can be solved, given that it works in other countries and at other schools. Moreover, understanding the tabulation of votes is not a prerequisite to voting sincerely. As long as voters understand that voting sincerely is to their benefit, then Choice Voting will represent them accurately. In any case, we do recommend that voters are educated about the workings of the system. See Section 7: Recommendations.
- *“[Voter] confusion can lead to outcomes that do not reflect the will of the electorate.”* This claim requires documented justification to be taken seriously.

## 6. WHAT ABOUT A WEIGHTED POINT SYSTEM?

Some students have suggested looking at a ranked voting system that is based on a weighted point-tally system. This system has the name Borda count.

In Borda count, votes are counted using different weightings for different rankings. For instance, with 16 candidates running, a voter’s first choice would get 16 points. The voter’s second choice would get 15 points, and so on. The top 6 point-getters would win. Another variation of Borda count is where voters are allowed to rank only as many candidates as there are winners. There are also many weighting variations. Borda count is used at the University of Michigan, Metropolitan State University, and in several AP College sports polls.

One difference of Borda count over ASUCD’s current implementation of Choice Voting is that it lets voters express simultaneous support for several candidates at once. This is desirable for slates because it lets them campaign for votes with less a sense of competition between their slate-mates.

This is a valid concern. However, Borda count would make several things worse in the course of trying to fixing one. If slates want the ability to campaign for simultaneous support, Choice Voting can be modified to achieve this same outcome. See Section 7: Recommendations.

Below we outline many of the problems that Borda count would create.

### **Borda count produces minority rule and skews representation.**

- The system produces minority rule. For instance, if the Fall election were counted with Borda count, the winning candidates would represent 97,029 points out of a total of 201,889 points, or 48% of the vote. For the Winter election, the winners would represent 135,819 out of 280,116 points, or 48%. See Appendix C for the weighted point Borda count totals. In both cases, 52% of the vote would be wasted, or not represented.

- The system allows winner-take-all sweeps in ordinary situations. Imagine two leading slates with slightly unequal support (say 55% and 45%). Also imagine there are no stand-out candidates on either slate. In this situation, the leading slate would receive an even mixture of top rankings from 55% of the students. The other slate would receive an even mixture of top rankings from 45% of the students. Under Borda count, the first slate would win 100% of the seats, just like in the old system before Choice Voting.
- The above phenomenon could cause slates to take advantage of the system by strategically nominating candidates, who have the same popularity. This would in turn decrease the amount of variety voters have to choose from.

#### **Borda Count produces unequal representation.**

- The system does not give voters equal representation. Some voters could have  $16+15+14+13+12+11 = 81$  points go towards electing representatives while other voters could have zero points go towards electing winners.
- The intent of Borda Count is to create a ranked outcome that measures the relative popularity of candidates, which is why it is popular for sporting polls. Its intent is not to create a cross-section of the voting body that represents all voters equally, which is the purpose of a representative legislature.

#### **Borda count violates one person/one vote.**

- Voters do not get one vote, or even six votes. Instead, each voter gets a number of “points” to distribute that depends on the number of candidates. With 16 candidates, each voter would get  $16 * 17/2 = 136$  “points.”

#### **Borda count discourages sincere voting.**

- Ranking additional candidates hurts the chances of a voter’s higher choices. For example, a voter might not want to risk giving points to other candidates if their top choice is in a tight race.
- The value of a vote is not the same for all voters. A voter that ranks more candidates has a stronger vote than a voter that prefers fewer candidates.
- Voters have conflicting incentives to rank both more and fewer candidates. The system forces voters to make strategic decisions instead of encouraging sincere voting. See the two previous points.

#### **Borda count confuses voter intent.**

- Voters must give out points in one-point increments, even if there is a big difference between candidates. With 16 candidates, a voter’s first and second choices would both get 16 and 15 points, even if the voter does not like the second choice nearly as much.
- The Borda count point-value system is arbitrary. Different weighting systems will express voter intent differently and give different results. There is no theoretical basis for choosing one point system over the other. For instance, Major League Baseball uses Borda count to select their MVP, where they give 15 points to the first choice, 9 points to the second, and so on.

- The system forces voters to spread their vote over many candidates, even if they like only one candidate or a few of them. If they rank fewer, their vote automatically counts for less.

## 7. RECOMMENDATIONS

We propose the following three recommendations.

- Preserve Choice Voting and continue to study and understand its success. Wait until a “full cycle” of students has experienced the use of Choice Voting before casting judgment on voter education efforts. ASUCD Elections Committee Chair Mary Ball has said that it could take 4-5 years before students become fully accustomed to the system.
- Teach voters and candidates that strategic voting does not pay off in Choice Voting. This will discourage misguided strategic voting.
- Have the Senate debate whether duplicate rankings should be allowed in Choice Voting elections.

We elaborate on the third point here. We recommend that the ASUCD Senate and ASUCD Elections Committee consider the option of allowing duplicate rankings.

Duplicate rankings would allow voters to express equal support for several candidates. At the same time this would preserve all of Choice Voting’s original democratic benefits. See Section 2.

With duplicate rankings, a voter’s single vote would be split into a number of equal parts, depending on how many candidates they equally support. The ASUCD Senate can implement this with a simple change in the Government Codes. The ChoicePlus voting software purchased by ASUCD already supports the option of duplicate rankings. This action would preserve Choice Voting’s original spirit, and respect last year’s 67% vote of the ASUCD student body.

## APPENDIX A: CHOICE VOTING IN PRACTICE

**Cities.** The city of Cambridge, MA uses Choice Voting to elect 9 city council members and 6 school board members. At least 9 city councils in New Zealand have started using Choice Voting in the past year or so. They use Choice Voting to fill between 3 and 9 seats at a time.

**Schools.** The students of UC Berkeley use Choice Voting to fill 20 open seats in their senate at a time. The students of Princeton University use Choice Voting to fill 10 seats on their undergraduate council at a time. The student governments of Harvard University, Vassar College, Whitman College, and Lane Community College also use Choice Voting.

**U.S. History.** A couple dozen cities in the United States started using Choice Voting in the 1920’s and 30’s. The proportional representation (PR) movement had its origins in the Progressive Movement. The cities included Sacramento, Cleveland, Cincinnati, New York City, and others.

In all cases the system had to weather repeated attempts at repeal by the political establishment. Well-financed opposition groups played off racial and Communist tensions in their efforts to overturn Choice Voting. By the 1950's Choice Voting had been repealed in most cities.

PR proponents believe that the system was rejected because it worked too well "in promoting the representation of racial, ethnic, and ideological minorities that were previously shut out by the winner-take-all system."<sup>1</sup>

#### APPENDIX B: SLATE DATA OF PAST ASUCD ELECTIONS

	VOTES	SLATE OF CANDIDATE
1	1656	Student Focus
2	1630	Student Focus
3	1506	Student Focus
4	1479	Student Focus
5	1471	Student Focus
6	1428	LEAD
7	1288	LEAD
8	1276	Student Focus
9	1274	LEAD
10	1259	LEAD
11	1144	LEAD
12	1005	Indep.
13	842	Indep.
14	716	Indep.
15	652	Indep.
	18626	TOTAL

TABLE 5. Winter 2002-2003 ASUCD Senate Election

<sup>1</sup>See <http://www.mtholyoke.edu/acad/polit/damy/articles/> and click on Brief History of PR.htm for a brief article on the history of PR in the US.

	VOTES	SLATE OF CANDIDATE
1	803	UNITE
2	740	UNITE
3	699	UNITE
4	680	UNITE
5	650	UNITE
6	639	Indep.
7	628	Aggie
8	589	People's Collective
9	577	Indep.
10	549	People's Collective
11	528	UNITE
12	488	Indep.
13	467	Aggie
14	459	Aggie
15	426	Aggie
16	421	Aggie
17	420	People's Collective
18	403	Indep.
19	395	People's Collective
	9922	TOTAL

TABLE 6. Fall 2001-2002 ASUCD Senate Election

	VOTES	SLATE OF CANDIDATE
1	1388	LEAD
2	1219	LEAD
3	1201	LEAD
4	1189	LEAD
5	1161	LEAD
6	1146	LEAD
7	863	Student Action
8	687	Student Action
9	674	Students 4 Students
10	673	Student Action
11	634	Student Action
12	625	Students 4 Students
13	556	Students 4 Students
14	522	Independent
	12538	TOTAL

TABLE 7. Winter 2000-2001 ASUCD Senate Election



## APPENDIX C: BORDA COUNT WEIGHTED POINT DATA

Assagai	19,525
Miller	15,953
Ramirez	15,626
Ackerman	15,542
Yu	15,241
Sanchez	15,142
Quizon	15,010
Goren	13,972
Cassady	13,536
Vang	13,462
Sandhu	12,261
Vagy	9,545
GdFaith	7,769
Bloom	7,646
Ryan	7,151
Bidwell	4,508
TOTAL	201,889

TABLE 8. Weighted Borda Totals: Fall 2002-2003 ASUCD Senate Election

Barr	24,773
Holloway	23,385
Shende	22,526
Cohen-Cutler	21,991
Bang	21,661
Gill	21,483
Engel	21,331
de la Vega	20,393
Ham	19,367
Kaufman	18,523
Munoz	17,796
Khan	17,371
Baron	17,036
Ramezanzadeh	12,480
TOTAL	280,116

TABLE 9. Weighted Borda Totals: Winter 2002-2003 ASUCD Senate Election

## APPENDIX D: SOME QUOTES IN SUPPORT OF CHOICE VOTING

- “The voting system in place at UC Davis has produced a truly democratic body that will represent the whole community.”  
—Donald Cohen-Cutler, elected ASUCD Senator, quoted in a Green Party of Yolo County press release, 3/5/04.
- “The Choice Voting Amendment eliminates the inadequacies of the ‘winner-take-all’ system, electing a body of students who are more reflective of the campus community.”  
—Paul Schramski, then General Manager of KDVS 90.3FM, quoted in CVA campaign literature, January 2003.
- “Choice Voting is a good system, and I hope the senate can find better things to do with its time than writing amendments to get rid of it.”  
—Adam Barr, in his letter to the editor, *California Aggie*, 11/18/03.
- “The system encourages the student or citizen to take the time to actually study the candidates so they can properly rank them according to their preference. It also ensures no votes are wasted, which I think is a huge improvement.”  
—Gabriel Bang, elected ASUCD Senator from Student Focus slate, quoted in a Green Party of Yolo County press release, 3/5/04.
- “[The results] show that strong independent candidates with strong issues will be heard.”  
—Donald Cohen-Cutler, on his independent ASUCD Senate win in the Winter 2003-2004 ASUCD Choice Voting election, *California Aggie*, 2/27/04.
- “I think [Choice Voting] will really help diversify the senate, and it should give independents a better chance.”  
—LeVale Simpson, elected LEAD Senate candidate after his Winter 2002-2003 ASUCD election win, *California Aggie*, 2/21/03.
- “Since some people didn’t make threshold until the 13th round, it proves that there is some success in the proportional configuring of winners using choice voting. Choices beyond the top six do matter.”  
—Mary Ball, ASUCD Elections Committee Chair, quoted in a Green Party of Yolo County press release, 3/5/04.