BC Symposium on Proportional Representation

Recommendations on Election Reform in British Columbia

February 28, 2018

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Introduction

The **BC Symposium on Proportional Representation** was convened in response to the provincial Government's request for public input on proportional voting systems and the design of the upcoming referendum. Symposium participants included prominent academics, voting system experts, and election reform advocates from BC and across Canada.[1]

The group met in Vancouver on February 17 - 18, 2018 and held a subsequent Public Forum to announce its preliminary recommendations. We hope that the combined expertise of Symposium participants will prove helpful to the Government of British Columbia during the coming months.

We note at the outset that, as individuals, Symposium participants hold a variety of views on proportional representation. Some are advocates; others insist on taking a neutral stand; most believe that seemingly-minor details of a proportional system can make it significantly better or worse. As a group, our purpose in this submission is not to advocate for any particular system, whether proportional or First Past The Post (FPTP), but to make recommendations on what we believe are best practices in electoral system design, in case the citizens of British Columbia do choose to pursue election reform.

The BC Symposium on Proportional Representation was sponsored by the Center for Election Science (CES), a US-based nonpartisan nonprofit organization dedicated to helping the world use smarter election systems. The two-day Symposium was also sponsored by the Department of Political Science at Simon Fraser University and its Centre for Public Opinion and Political Representation (CPOPR). The views, thoughts and opinions expressed in this report are solely those of the Symposium participants, and do not necessarily reflect those of CES, Simon Fraser University, the Department of Political Science, or CPOPR.

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[1]The full list of participants, with brief biographies, can be found in Appendix E.

Executive Summary

Our report consists of two parts: Part I on voting systems and Part II on the referendum process. Some Symposium participants have chosen to sign Part I, but not Part II, of the report. There is also one recommendation in Appendix D, signed by a smaller group.

Part I: Recommendations on proportional voting systems to be considered for British Columbia

- **Recommendation A:** No voting system should be considered that does not meet certain minimum requirements (as specified in the body of the text).

- **Recommendation B:** In choosing among voting systems that do meet the requirements, consideration should be given to certain additional guidelines (as specified in the body of the text).

- **Recommendation C:** Attention should be paid to the specific implementation details of each system, as these can substantially affect the results. This is especially true with respect to the Mixed Member Proportional system (MMP), for which we recommend a particular implementation based on the Bavarian model (Appendix A).

- **Recommendation D:** We provide a list of 5 proportional voting systems that perform well on our criteria, together with a table that compares them on a variety of measures and outcomes (Table 1). We believe that all of these systems are worthy of consideration for adoption in British Columbia.

- **Recommendation E:** In choosing a voting system, issues of gender, Indigenous, and minority representation should be explicitly considered, and representative leaders and experts from these groups should be consulted. Each system will require a different set of actions to improve representation, and these steps should be part of any discussion of election reform.

Part II: Recommendations on the referendum structure and process

- **Recommendation F:** The referendum ballot should consist of two questions:

  - Question 1 asking voters whether British Columbia should adopt a proportional voting system, to be selected from the systems in Question 2;

  - Question 2 asking all voters (including those who voted against PR in Question 1) to rank two to four specific proportional voting systems.

  The outcome of Question 2 will determine the new voting system to be used in British Columbia in the event that Question 1 passes. We recommend that the systems in Question 2 be chosen from the list of five systems presented in Part I of this report (Recommendation D). If other systems are chosen, we recommend that they satisfy at least our list of

minimum requirements (Recommendation A) and additional criteria (Recommendation B).

- **Recommendation G:** The referendum questions should be worded as neutrally as possible, using guidelines that we provide.

- **Recommendation H:** The vote-counting process for the second question should be structured to ensure that it will, if possible, choose an option that beats all other options pairwise.

- **Recommendation J:** The systems under consideration should be specified in sufficient detail, and these details made available to the voters.

- **Recommendation K:** Prior to the referendum, the government should take concrete steps to include citizens in a deliberative process on reform, such as by convening a Citizens' Jury to evaluate the proposed systems (including FPTP).

- **Recommendation L:** Relevant information should be sent along with the referendum ballot and made available online. This should include the system descriptions and details (from Recommendation J) and the report of the Citizens' Jury (from Recommendation K).

- **Recommendation M:** The Government should make an explicit commitment that, if the referendum passes, there will be a follow-up referendum after at least 2-3 election cycles, in which citizens will have the opportunity to vote on whether to stay with the new proportional system.

Part I. Recommendations on proportional voting systems

Signatories

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Introduction

There are many proportional representation (PR) systems in use around the world and many versions of each system. There are also new systems, many designed by Canadians with the Canadian context in mind, that aim to combine different elements of existing systems to achieve better results.

We believe that an important part of our role as experts is to help guide the government in settling these details. Though many voters may not be interested in discussing the differences between systems, and even less interested in the implementation details of a given system, these details are important. Our goal is to help narrow down the space of possible systems to the ones that we believe would have the greatest appeal to BC voters and the greatest probability of long-term success in BC.

The systems we recommend for consideration include some, such as MMP and STV, that have been used extensively in other places, and others that have been designed specifically for situations like British Columbia's. We believe that the theoretical understandings of voting system design has advanced significantly since the last major adoption of a new PR system (New Zealand in 1993-1996). These understandings allow designers to tailor the tradeoffs a system makes, to maximize certain advantages while minimizing the corresponding disadvantages. All of the systems recommended in this submission have been carefully reviewed using these modern understandings. While no voting system is entirely without flaws, our review of the available evidence demonstrates that all of these suggested systems are robust and practical. Thus, we believe that these new proposals deserve serious consideration, both here in British Columbia and in any future reform processes elsewhere in Canada.

A note on terminology. We use the following terms below:

- **District:** An area in which representatives are elected directly by voters. This can be either a single-seat district as in First Past the Post (also known as a constituency, or informally as a "riding") or a multi-seat district (generally of 2-5 seats), as in the BC-STV system that was proposed by the BC Citizens' Assembly in 2004.[2]

- **Region:** A larger area in which certain seats are allocated proportionally by party and then assigned to individual candidates in a separate step. Regions generally encompass more than 8 seats total, although in certain voting systems only some of these seats are assigned on a regional basis.

Recommendation A: Minimum requirements

We recommend that certain types of voting systems be excluded from consideration:

A1. Avoid systems in which ***all*** MLAs are elected from regional or province-wide party lists.

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[2]In one of the systems considered below, Local Proportional Representation (LPR), each MLA is simultaneously the representative for a single-seat district and an overlapping multi-seat district.

A2. Avoid systems in which **any** MLAs are elected from regional or province-wide **closed** party lists.[3]

A3. Avoid systems in which MLAs are not dedicated to either a specific district or one of several local regions within the province.

A4. Avoid any system which reduces the number of MLAs in any region of the province.

A5. Avoid any system that would increase the size of the Legislative Assembly.

A6. Avoid systems such as Mixed Member Majoritarian (MMM) that are designed to produce only moderately proportional election outcomes.

A7. Avoid Mixed Member Proportional (MMP) designs that introduce strong incentives for voters to engage in ticket-splitting tactics; specifically, avoid two-vote MMP designs in which the number of seats allocated to each party is based exclusively on the 2nd (list) vote.

Our reasons for recommending these requirements combine principled and practical considerations. On a principled level, we feel that systems that meet these requirements are preferable because they are more democratic or otherwise promote better government. All of us feel this way about some of the requirements, and some of us feel this way about all of them.

But even in those cases where some of us believe that systems violating these requirements – especially requirements A2 and A5 – could be acceptably democratic from a principled point of view, we all believe that the requirements are necessary from a practical point of view. We believe that British Columbians will best be served by a clear debate which focuses on the essential differences between FPTP and PR systems, and that proposing systems which violate these requirements would muddy the waters by bringing up secondary issues. We also believe that systems which meet these requirements are the most likely to be embraced by BC voters, and that even those who oppose changing the voting system should want to focus the debate on the most appropriate alternative systems (those which have the greatest support).

The specific rationales for each of the above constraints are as follows:

A1. Although the majority of proportional voting systems are based entirely on party lists, such systems are generally associated with large districts encompassing many seats. A transition to significantly larger districts may raise concerns among British Columbians living in rural parts of the province as to whether any of their local MLAs will be easily accessible and capable of authentically representing their local interests. These concerns can be addressed by incorporating mechanisms other than party lists in order to accommodate relatively small districts.

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[3]A closed list allows a political party to announce in advance the order in which its candidates will receive its allotted seats.

A2. Many Canadians have expressed a concern that if closed party lists are introduced at the regional or provincial level, party leaders may order their candidates in a way that rewards party loyalty and discourages individual MLAs from representing their constituents' local interests. This concern can be addressed by avoiding closed lists at the regional and provincial level. (Note that some of the experts at the symposium feel that closed regional lists can have advantages and/or appeal to certain subgroups, but we all agree that excluding such closed lists from consideration would help clarify the debate and would appeal to more BC voters overall.)

A3. A concern is occasionally raised about the introduction of "at-large" MLAs who may be elected due to their success in urban areas, such as Vancouver, but will then end up with a mandate that extends over rural areas such as northern BC. This concern can be addressed by ensuring that every MLA is dedicated to either a district or specific region of the province.

A4. Concern has been expressed about the potential for some voting systems to allow for the election of more MLAs from the Lower Mainland at the expense of MLAs elsewhere in the province. No reform advocacy group is recommending a system which would do that; rather, such groups favour changes that preserve the regional distribution of MLAs. We therefore recommend that this feature be required of any proposed reform.

A5. The current debating chamber would have difficulty accommodating more than 87 MLAs. Also, changes in the size of the legislature should be considered on their own merits, separately from changes in the voting formula.

A6. Given that the upcoming vote has been communicated as a referendum on proportional representation, it would be a contradiction to include any voting system that is only semi-proportional. MMM is one such system, but there are others that should also be avoided. It is equally important to avoid the incorporation of excessively high election thresholds that can effectively convert any proportional system into a non-proportional one. When selecting a threshold, one must consider the specific voting system and how it is to be implemented; however, a general rule-of-thumb is that any explicit threshold applied at the regional or provincial level should not exceed 5%. In many systems worthy of consideration, explicit thresholds are not required, since regional boundaries will impose natural thresholds of roughly 5% or higher.

A7. Although the majority of two-vote MMP systems used around the world allocate seats to parties based on their shares of the 2nd vote, it would be unwise to adopt this convention in BC. A potential consequence of this convention is the introduction of ticket-splitting tactics, which subject large numbers of voters to partisan appeals to give their 1st vote to a large party and their 2nd vote to a small party for purely tactical reasons. In addition to undermining public confidence in the electoral system, these tactics may lead to a number of problems, including, but not limited to, highly disproportional election outcomes. If a two-vote MMP model is selected to appear on the referendum, the risk of introducing ticket-splitting tactics should be minimized by adopting the Bavarian convention whereby

a party's 1st and 2nd votes are added together to determine its proportional share of the seats. (See Appendix A for further details.)

Recommendation B: Additional guidelines

We recommend that the following guidelines be considered when selecting a voting system for British Columbia:

B1. Favour systems that score well on various measures of proportionality: low discrepancy between party vote shares and seat shares, low number of wasted votes, and high percentage of voters represented by at least one MLA who shares their views.

B2. Favour systems that accommodate relatively small districts in rural areas.

B3. Favour systems that give independent candidates a fair opportunity to be elected.

The rationale for these guidelines is as follows.

B1. Systems that better satisfy the core objectives of proportional representation should be favoured to maximize the benefits of reforming the electoral system with respect to the effort involved.

B2. Rural BC voters have expressed concerns about increasing distance to their representative, given that the distances in rural areas are already quite large. While a moderate increase in distance may be an acceptable tradeoff for better ideological representation, this increase should not be larger than necessary.

B3. British Columbia has traditionally allowed independent candidates (those who are not associated with any party) to be on the ballot. We recommend that any system considered should accommodate this and provide a level playing field, on which independent candidates can win if they have significant support among the voters.

Recommendation C: The importance of implementation details

We believe that the specifics of implementation of a voting system can substantially affect its appropriateness for British Columbia. This is particularly an issue for Mixed Member Proportional Representation (MMP), whose implementation differs significantly in different countries. In our descriptions of our recommended voting systems below, we briefly note the details that we feel are important. Our most extensive recommendations are for MMP; these are summarized in the next section and discussed in more detail in Appendix A.

Recommendation D: Proportional voting systems offered for consideration

The Symposium reviewed five proportional voting systems,[4] all of which meet our minimum requirements (Recommendation A) and satisfy many of our additional guidelines (Recommendation B):

- Mixed Member Proportional Representation (MMP)

- Dual Member Proportional Representation (DMP)

- Single Transferable Vote (STV)

- Local Proportional Representation (LPR)

- Flexible District Proportional Representation (FDPR)

In addition to the five systems above, we also include an outline of one additional proportional system, Regional Open-list Proportional Representation (ROPR). Although ROPR does not meet our minimum requirement A1, and is therefore not recommended by the Symposium, we include it here for comparison, since it is a commonly used system around the world that has been recommended for BC by other groups.

Below, we give a high-level description of each of our proposed systems. We then compare them on a variety of measures and outcomes in Table 1.

Mixed Member Proportional Representation (MMP)

MMP is a mixed electoral system in which (a) plurality voting is used to fill a tier of single-seat district seats (as in FPTP), (b) a proportional allocation formula is used to fill a 2nd tier of regional seats, and (c) the allocation formula is applied in a compensatory manner intended to make the sum of a party's district plus regional seats reflect its share of the popular vote.

MMP was pioneered in Germany where it is used for national and state-level elections (in 13 of 16 Länder). It is also used in a number of other countries and regions including New Zealand, Scotland, and Wales. The Scottish and Welsh assemblies are notable in that MMP is applied on a regional basis, ensuring every representative is associated with either a specific district or a local region. Although a regional model would not achieve the highest degree of province-wide proportionality, it is, in our opinion, the most pragmatic approach for BC.

At least two major decisions would need to be made in designing an MMP system for British Columbia:

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[4]In our deliberations, we also looked at another newly-proposed system, PLACE voting (Proportional Locally-Accountable Candidate Endorsement voting), which performed well on many of our criteria. Ultimately, however, we decided that this system had not yet received sufficient scrutiny from British Columbians to include in our report.

- *How the regional MLAs are elected.* Most jurisdictions employ closed party lists; the German state of Bavaria uses open lists; the Law Commission of Canada proposed flexible lists in 2004; and the German state of Baden-Wrttemberg dispenses with lists altogether and instead awards regional seats to the best-performing local candidates who fail to win their districts. It is a standard and advisable practice that a candidate be permitted to contest both one local district as well as the regional seats in the encompassing region.[5]

- *Whether each voter gets one or two votes.* Closed list models typically offer two votes where the 1st is for a local candidate, and the 2nd is for a party that need not match the affiliation of the supported candidate. Open- and flexible-list models involve two votes, where the 2nd vote is for a single candidate on a party list. However, MMP may be operated with a single vote, cast for a district candidate, which is counted both for the election of a district member and for the distribution of seats among parties, as is done presently in the German state of Baden-Wrttemberg, and was done both for the Bundestag election of 1949 and for elections in most Länder using MMP until the 1980s.

Here we propose serious consideration of a specific MMP design that we feel best addresses the needs and desires of British Columbians. The proposal is largely inspired by the implementation of MMP in Bavaria, which is the only jurisdiction in the world that uses an open-list MMP model. In brief, the system is as follows:

- Voters cast two votes, the 1st for a district candidate and the 2nd for a regional candidate on an open party list.

- District seats are awarded to the candidates with the most 1st votes in their district.

- Regional seats are allocated to parties in proportion to the **sum of each party's 1st and 2nd votes**; the parties' allocated seats are then awarded to their remaining candidates according to the **sum of each candidate's 1st and 2nd votes**.

Further details of the proposed design can be found in Appendix A.

A unique and important aspect of the Bavarian model is the fact that 1st and 2nd votes are aggregated to determine how many seats is allocated to each party. This convention minimizes the risk of introducing ticket-splitting tactics, a form of tactical voting associated with MMP designs in which the 2nd vote alone determines each party's seat allocation. The strategy involves giving the 1st vote to a locally popular party with good chances to win the district, and the 2nd vote to a smaller party more likely to win regional seats, even if these choices do not reflect the true preferences of the voter. To avoid ticket-splitting tactics, we recommend (Recommendation A7) that any two-vote MMP model designed for BC adhere to the Bavarian convention whereby the sum of 1st and 2nd votes is used to allocate seats to parties. (See Appendix A for more details.)

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[5]See the Law Commission's 2004 report on electoral reform in Canada and Louis Massicotte's 2004 report, *In Search of a Compensatory Mixed Electoral System for Quebec.*

Two-vote MMP models provide an opportunity to incorporate a novel transfer rule that would minimize wasted votes for voters who favour independent candidates or parties with weak regional support. In the event a voter's 1st or 2nd vote is for an unsuccessful independent or party, the vote would be transferred to the party marked on the other section of the ballot. Appendix A explains the details of this rule as an option to consider.

In our system comparison table below (Table 1), we assume that MMP is implemented using the design proposed here. It is also assumed that the optional transfer rule will be included, which improves the system's performance on reducing wasted votes and aiding independent candidates.

Dual Member Proportional Representation (DMP)

DMP was developed by Sean Graham in 2013 with research funding from the University of Alberta. In 2016, it was included in Prince Edward Island's plebiscite on electoral reform, becoming the third proportional electoral system to be put to a public vote in Canada.

This system is designed to achieve a high level of proportionality while retaining local representation and a single-vote ballot. It relies on the use of two-seat districts where the first seat is filled by the plurality winner (similar to FPTP), and the second in a manner that produces proportionality at the provincial level. When choosing the candidates to fill the second seats, DMP strives to accomplish two objectives: elect the candidates with the highest vote fractions from each party and elect the candidate with the highest vote fraction (of those that remain) in each district.

While DMP generally requires districts to double in size, these increases can be mitigated for rural districts. Since the proportional allocation of seats occurs at the provincial level, DMP reduces the importance of ensuring that each district has an equal population. This would permit the creation of rural districts with lower than average populations without reducing the voting power of British Columbians living elsewhere in the province. In the case of extremely large, diffuse districts, such as Peace River North, DMP would allow for the retention of single-seat districts. Despite voters in such districts not electing a second local representative, their votes would contribute to determining the proportional allotment of seats province-wide in the same manner as voters in two-seat districts.

Although DMP has never been used in Canada or elsewhere, it has been tested extensively using official Canadian voting data. Simulations of past federal, PEI, Alberta, and BC elections have been produced and analyzed.[6]

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[6]These simulations, as well as a more thorough explanation of DMP and a sample ballot, can be found at www.DMPforCanada.com. For a detailed discussion of the simulation of the 2017 BC election, see "How Dual Member Proportional Could Work in British Columbia" at https://dmpforcanada.files.wordpress.com/2018/02/submission-to-the-bc-attorney-general-how-dmp-could-work-in-bc.pdf.

Single Transferable Vote (STV)

STV is a proportional voting system used for parliamentary elections in Ireland and Malta, as well as other jurisdictions in several countries. STV was the system proposed by the 2004 BC Citizens' Assembly (under the name BC-STV), and voted on in the 2005 and 2009 referenda.

Unlike many other proportional systems, STV does not attempt to ensure proportionality by party or any other specific characteristic. Rather, the system is designed to minimize "wasted votes", on the principle that if most votes count toward electing some candidate, then the result will necessary be proportional along all the dimensions that determine how people vote.

Under STV, voters rank the candidates in a multi-seat district in order of preference. The system's central feature is that votes that might otherwise have been wasted (either votes for a losing candidate or votes for a candidate who already has enough to get elected) are instead "transferred" to the voter's next preferred candidate. This process is iterated until all seats are filled, and only a small fraction of the votes does not end up contributing to the election results. Exact implementation details for the transfer step vary, but the differences are relatively minor.

The more seats an STV district has, the fewer wasted votes remain at the end. This means that smaller districts are less exactly proportional, and in particular, less likely to elect candidates from the smallest parties. BC-STV used mostly 5-7 seat districts, with smaller districts of 2-4 seats in the rural areas.

Local Proportional Representation (LPR)

LPR is a variant of STV, created by Canadian computer scientist Byron Weber Becker, which retains single-seat districts within STV's multi-seat districts and modifies the counting scheme to ensure exactly one winner per single-seat district.

As in STV, voters can rank all the candidates in their multi-seat district. However, unlike in STV, the last candidate in any single-seat district is never eliminated, and a second winner from the same single-seat district is never seated. These two rules are enough to ensure that there will be exactly one winner per single-seat district.[7]

Flexible District Proportional Representation (FDPR)

FDPR is a made-in-Canada hybrid of STV and MMP, proposed to combine the voter choice of the former with the smaller districts and better proportionality of the latter. Also called "rural-urban PR", it involves allocating seats in 3 ways:

- Single-seat districts in sparsely-populated rural areas; filled using instant-runoff voting (i.e. using ranked ballots, similar to STV).

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[7]A more detailed description of LPR is available at http://localpr.ca/basics/index.html.

- Multi-seat districts in most areas; filled using STV.

- Around 10-15% regional seats, allocated by party as in MMP, to improve proportionality. There are various possible mechanisms for choosing who fills these regional seats. In order to be able to evaluate this system fairly, we have assumed here that regional seats will go to the "best near-winners" (i.e. the unsuccessful candidates with the most votes) within each party, constrained so that candidates are directly competing only against others in districts of the same size.

As an example, consider British Columbia's 24 "interior" seats as a single region: 8 in the north, 5 in the Cariboo-Thompson region, 7 in the Okanagan, and 4 in the Kootenays region. This could become a region with:

- Four single-seat districts and one regional seat in the far North;

- Five 3 or 4-seat districts and three regional seats in the southern half of the interior.

There would thus be 20 district seats and four regional seats. The regional seats could be allocated first by party, and then, within party, to the unsuccessful district candidates with the most votes. However, there could be an additional constraint that exactly one of the four regional seats must come from one of the four northern single-seat districts, to avoid the unfairness of comparing "best near-winners" between districts with different numbers of seats.

This particular example has 17% regional seats. However, the more urban areas of the province would need only about 10% regional seats, because we could use a number of 4-5-seat districts there, which would naturally be more proportional. Thus there would be an overall average of around 12-15% regional (top-up) seats.

The above is one reasonable option for implementing FDPR in British Columbia, and the one used in our comparison of voting systems in Table 1. However, there are certainly other possible ways to organize the current districts into regions and to fill the regional seats. Thus, unlike with MMP, we do not intend the details given here to be interpreted as the Symposium's specific recommendations for FDPR; we recommend that this level of decision-making be referred to a more detailed design process.

Regional Open List (ROPR) – *for comparison only, not recommended*

In ROPR, the province would be divided into regions of 8-20 seats each. Within each region, voters would choose a single candidate from a list of candidates grouped by party. Seats in the Legislative Assembly would be assigned to parties proportionally to their overall regional vote totals, and then within parties to the candidate(s) with the most votes.

Comparison of the proposed voting systems

Table 1 (on the next page) provides a detailed comparison of our five proposed voting systems (plus ROPR), using 16 criteria grouped into 7 categories. A detailed explanation of each criterion, as well as justifications for all the table entries, can be found in Appendix B.

The list of criteria used in Table 1 was developed after studying the final reports of 11 different Canadian committees, assemblies, and surveys that have studied the issue of election reform:

- La commission de la représentation électorale: Quebec Review, 1984
- "Lortie Commission" (Royal Commission on Electoral Reform and Party Financing): Report, 1991
- Prince Edward Island Electoral Reform Commission: Final report, 2003
- Comité directeur des états généraux sur la réforme des institutions démocratiques, Quebec: Rapport, 2003
- Law Commission of Canada: Final report, 2004
- Commission on Legislative Democracy in New Brunswick:Final report, 2004.
- British Columbia Citizens' Assembly on Electoral Reform:Final report, Technical Report, 2004
- Ontario Citizens' Assembly on Electoral Reform: Final report, 2007
- Directeur général des élections, Quebec: Report, 2007
- ERRE committee (Electoral Reform/Reforme Electorale): Final report, 2016
- MyDemocracy.ca survey/consultation: Final report, 2016

We believe our list of considerations touches on all the main issues raised in these 11 historical processes.

Observations on voting system preferences

Here we discuss the popularity of the reviewed systems as observed in a variety of contexts.

In the course of our deliberations, we identified four systems that best satisfy the competing criteria of proportionality (i.e. low distortions, few wasted votes) and low district magnitudes in rural areas. These four systems, which were highlighted at the Symposium's Public Forum on Election Reform, are:

- Mixed Member Proportional Representation
- Dual Member Proportional Representation
- Local Proportional Representation
- Flexible District Proportional Representation

Recent submissions to the BC Government's Citizen Engagement Team by the Canadian Centre for Policy Alternatives and Fair Vote Canada's BC Steering Committee endorse the following options:

TABLE 1 (page 1)

	MMP	DMP	STV	LPR	FDPR	ROPR
Specific version of system being evaluated	Bavarian style mixed member PR with transfers	Dual member proportional representation	Single transferable vote with multi-seat districts (BC-STV)	Local proportional representation with 3-5 seat districts	Flexible district PR with ranked ballots & best-near-winner regional top-up	Regional open party lists
Primary rationale	Combines best aspects of PR and FPTP while keeping a simple ballot	High proportionality with local representation and a simple ballot	Maximum voter control	Maximum voter control with local representation	Highly adaptable to the varying population densities across British Columbia	Easy to explain, high proportionality
Effective representation						
Partisan proportionality *(Does each party's proportion of seats closely match its proportion of votes?)*	High proportionality within large regions	High proportionality province-wide	Moderately high proportionality within multi-seat districts	Moderately high proportionality within multi-seat districts	High proportionality within large regions; in some places, also moderately high proportionality within multi-seat districts	High proportionality within large regions
Which votes are wasted?	Very few (votes for parties with very weak regional support)	Very few (votes for tiny parties)	Some ballots with incomplete rankings; around 15% of others	Some ballots with incomplete rankings; around 15% of others	Very few (votes for parties with very weak regional support)	Very few (votes for parties with very weak regional support)
Geographic representation						
Area of geographically largest districts	1-2x current	1-2x current	~3-5x current	1x current*	~1x current	~8-10x current
Regional direct representation *(fraction of voters represented by someone they directly supported)*	A majority of voters (some locally, the rest regionally)	A majority of voters (all locally)	Most voters (within a multi-seat district)	Most voters (within a multi-seat district)	Most voters (most locally, the rest regionally)	Some voters (all regionally)
Regional partisan representation *(fraction of voters represented by someone from their preferred party)*	Almost all voters (some locally, the rest regionally)	A majority of voters (all locally)	Most voters (within a multi-seat district)	Most voters (some locally, others within a multi-seat district)	Almost all (most locally, the rest regionally)	Almost all voters (all regionally)

TABLE 1 (page 2)

	MMP	DMP	STV	LPR	FDPR	ROPR
Competitiveness						
Within-party competition	Choice in regional list; mostly in medium- or small-sized parties	None	Choice within multi-seat district	Choice within multi-seat district	Choice for voters in multi-seat districts, but not in single-seat districts.	Choice within region
Entry bar for independent candidates	Low with transfer rule, high without	Medium	Low	Low	Low in multi-seat districts, medium in single-seat districts	Impossible under standard implementation
Competitive seats	Most regional seats, some district seats	First seat in some districts, second in most districts	Almost all	Almost all	Almost all seats in multi-seat districts; some seats in 1-seat districts; most regional seats	Almost all
Diversity						
Representation of women, Indigenous, and minority groups	See body of report	See body of report	See body of report	See body of report	See body of report	See body of report
Voter experience						
Ballot format	Choose 2 (one local, one regional)	Choose 1	Rank candidates	Rank candidates	Rank candidates	Choose 1
Ballot size small = 1-2 candidate per party med. = 3-5 candidates per party large = 6-8 candidates per party	Local: small Regional: large	Small	Medium	Medium	Small in single-seat districts; medium in multi-seat districts	Large
Incentives for strategic voting (less is better)	Slight incentive to vote for larger parties locally	Slight incentive to avoid weak parties	Almost none	Almost none	Slight strategic incentives for voters in single-seat districts	Within-party strategy (support marginally-viable candidates)

TABLE 1 (page 3)

	MMP	DMP	STV	LPR	FDPR	ROPR
Simplicity						
Simple to describe?	Fairly simple	Fairly simple	Medium	Medium	Medium	Very simple
Ease of implementation	Redraw districts; recount transfers	Redraw or group districts	Redraw or group districts into multi-seat districts; centralize STV counting in each district	Redraw or group districts into multi-seat districts; centralize STV counting in each multi-seat district	Redraw districts; centralize STV counting in some districts	Group districts into regions
Canadian and international context						
Use in other countries	Germany (and most of its state parliaments), New Zealand, Scotland, Wales, etc.	None	Ireland, Malta, Australian senate and state legislatures, etc.	None	Unranked version of FDPR is similar to some two-tier systems in Scandinavia	Most commonly used proportional representation system in the world
History in Canada	Proposed by Law Commission of Canada (2004), Ontario Citizens' Assembly (2006); won PEI plebiscite (2016)	Most second-choice votes in PEI plebiscite (2016), out of 5 options	Proposed by 2004 BC Citizens' Assembly; had 2 referendums (2005 and 2009)	Invented in Canada in the context of ERRE (2016)	Invented in Canada in the context of ERRE (2016)	None

- Mixed Member Proportional Representation
- Single Transferable Vote
- Local Proportional Representation
- Flexible District Proportional Representation

A recent submission to BC Citizen Engagement by YES PR BC endorses the following options:

- Regional Open-list Proportional Representation
- Mixed Member Proportional Representation
- Single Transferable Vote

Finally, a shortlist can be drawn of PR systems that have been included as options on past Canadian referendums or plebiscites:

- Single Transferable Vote
- Mixed Member Proportional Representation
- Dual Member Proportional Representation

Recommendation E: Gender, Indigenous, and minority representation

In choosing a voting system, issues of gender, Indigenous, and minority representation should be explicitly considered. Each system will require a different set of actions to improve representation, and these steps should be part of any discussion of election reform. In all cases, the process of coming up with possible voting systems for British Columbia should include consultation with Indigenous and First Nations leadership, the Parliamentary Secretary for Gender Equality, experts in electoral systems, and citizens representing the diverse population of the province.

Representation of women

Women currently comprise 38 percent of Members of the Legislative Assembly, the highest anywhere in Canada, but parity remains elusive. Following the 2017 election, women's representation increased by just one percentage point. This modest gain was erased after the recent by-election in Kelowna.

Women's political representation is usually understood in terms of the number of women elected; this is called *descriptive representation*. Women's political representation may also be understood as the representation of issues or interests that disproportionately affect women, like addressing sexual assault or equalizing pay and opportunity; this is called *substantive representation*. Descriptive representation and substantive representation are distinct but connected:

women in politics are more likely to view themselves as representatives of women, and they also do more than men to prioritize policy issues that have important and distinct effects on women's lives.

Empirically, more women tend to be elected in countries that use proportional representation systems. According to the United Nations, the Inter-Parliamentary Union, and the Global Database of Quotas for Women, worldwide women hold more than 25% of seats in countries that use proportional electoral systems and less than 20% in those countries that use plurality/majority systems. Mixed systems fall in the middle with women's representation sitting at nearly 23% on average.

However, the relationship between women's representation and electoral systems is complex. The specific features of a proportional system matter to both descriptive and substantive representation, and features that promote descriptive representation can reduce substantive representation.

District magnitude

District magnitude is one of the major reasons PR systems tend to perform better. With multiple candidates to nominate, parties can more easily balance their candidates between women and men in any given district. Parties may do so because it is important to them, or to appeal to voters who want to see more equality in politics. When one party balances their electoral lists, other parties are also pressured to do so - a phenomenon called contagion.

A greater district magnitude also means that parties do not need to choose between running an incumbent and running a woman – they can do both. Because most incumbents are men, incumbency is often considered the glass ceiling for women in politics. A larger district magnitude makes it easier to break through this barrier.

Larger districts are also easier to combine with proactive policies to increase women's representation, such as quotas. Quotas may be voluntary - where some parties commit to running a certain proportion of women - or they may be legislated - where all parties are required to have a minimum number of women on their lists.

Party lists

Systems which use closed or flexible lists, thus empowering parties, tend to elect more women. When parties determine the composition and rank on the electoral list, they often use their power to run more women, whether to match party values or to meet the expectations of voters.

Given the benefits of open lists that have been outlined throughout this report, the Symposium is not recommending the use of closed or flexible regional lists. However, we note that weakening the party's role in determining which of its candidates are seated generally seems to have the effect of limiting the number of women elected. There is no evidence that, under the current system, voters discriminate against women at the ballot box, but this may not be the case under all systems. Given the political head start that many of their male colleagues have in the form of social capital, the so-called old boys club, incumbency advantages, and resources (like the gender wage gap), the research shows that there are barriers to women's participation

and election when they rely on personal rather than party votes. Nevertheless, we believe that there are other ways in which to address women's under-representation.

Moreover, the features of a PR system that can inhibit descriptive representation may simultaneously increase substantive representation. More party control over the election of candidates in PR systems reduces the amount individual women can do to pursue women's issues once elected, because women must focus on party priorities to ensure their re-election. Under open list systems that allow voters to indicate multiple choices, greater voter control over who is elected can free women to do more to represent women, and to spend more time addressing issues that disproportionately affect their lives.

Systems proposed by the Symposium
Below is a brief analysis of each of the systems introduced in Recommendation D, from the point of view of women's representation:

- **MMP**: Under this system, roughly 50-60% of the MLAs will continue to be elected in single-seat districts by plurality vote. Women's representation for these seats is thus unlikely to change. For regional seats, it is anticipated that women's representation among candidates will increase. The extent to which this translates into greater representation among elected MLAs, however, remains uncertain. We note that in Bavaria, a generally conservative part of Germany, women have fared poorly under the open-list MMP system, with fewer women elected than would have been if each party's original ordering of the list had been used. It is not clear, however, whether this would be the case in British Columbia.

- **DMP**: In part because DMP includes a closed district party list of two, DMP is compatible with efforts to increase women's representation. If parties ensure that a significant number of women occupy the first position on the ballot, women's representation can be expected to increase substantially.

- **STV**: Like MMP, it is anticipated that there will be more women on the ballot and running for office. However, whether this translates to more women in the Legislature depends in large part on voter and party behaviour. The academic literature suggests that there are significant uncertainties for women under this system. Inequities in political resources may lead to women receiving fewer first-preference votes than men. In Ireland, this has been the case even after the introduction of a financial penalty for parties that run fewer than 30% women. While the representation of women increased, the average number of first-preference votes was 4,205 for male candidates and only 3,260 for female candidates. Again, though, it remains uncertain whether this would also be the case in British Columbia.

- **FDPR**: As a combination of STV and MMP, possible outcomes are similar to these two systems.

- **LPR**: As an adapted STV system, expectations and possible outcomes are similar.

Proactive measures and additional considerations

Given that all the systems suggested in this report avoid closed regional lists in order to ensure voter choice and improve accountability, the benefits for women's descriptive representation of shifting to a PR system may be minimal. As a result, we recommend that other reforms are considered to ensure equality of participation and representation.

Changes to the new public per-vote subsidy, as has recently been done in New Brunswick, offer one important opportunity. In New Brunswick, vote subsidies in future elections will be 1.5 times larger for votes cast for women than for those cast for men. Such a design in British Columbia would encourage parties not only to nominate women candidates, but to do so in districts where they are likely to do well, and to support their campaigns.

A review and possible reform of the nomination process is also key. Women in politics - and those who don't enter politics - cite uncertainty of timing, a lack of transparency, and cost associated with the nomination stage as a significant barrier. In the 2017 election, male candidates outnumbered female candidates in two of the three parties. In more than a quarter of the districts, both candidates for the major two parties were men, and there were thirteen districts where all of the candidates for the three major parties were men. More women will not be elected unless more women run, and any review of the electoral system should examine the nomination process. Changes over the last year-and-a-half in Alberta and Ontario mean that nomination races there are now subject to financing rules, as they are in other Canadian jurisdictions (such as New Brunswick) and federal elections. Extending the new BC campaign finance rules to nomination rules seems like a simple, straightforward, and productive first step.

In cases where some seats continue to be elected by single-member plurality, increasing representation may be best served by the continued use of the Equality Mandate Policy and consideration of other such proactive policies.

Representation of Indigenous and minority groups

British Columbia is a diverse province, and elected representatives should reflect this diversity. Yet despite some recent and significant "firsts" - including the first Indigenous finance minister and the first First Nations woman to be elected – Indigenous British Columbians in particular have historically been significantly underrepresented.

Small districts with local representation under FPTP have facilitated the election of some MLAs from diverse backgrounds, particularly from the lower mainland. Systems which elect many representatives on a FPTP basis, such as Dual Member Proportional or Mixed Member Proportional, would similarly facilitate the representation of geographically concentrated visible minority and diverse communities.

Not all minority groups, however, are sufficiently concentrated in any given district. Several witnesses to the federal ERRE noted that proportional systems with larger districts or regions may allow, and potentially encourage, parties to ensure diverse representation among their candidates, including candidates from Indigenous and minority groups that are not geographically

concentrated. Similarly, the Law Commission of Canada recommended a move to MMP in 2004 in part because of the expected benefits to the number of Canadians from diverse backgrounds running for office. As argued above in relation to women's representation, the ERRE also noted that closed lists have the benefit of enabling parties to ensure the election of traditionally underrepresented groups. This, of course, relies on the parties being inclined to use this power to promote representation.

Many experts who testified to the ERRE offered specific recommendations for improving - and guaranteeing - representation of Indigenous Canadians. Reserved seats, like those used in New Zealand were recommended by some, with specific provisions for representation of First Nations, Inuit, and Metis peoples. Such a proactive strategy is compatible with many of the systems recommended in this report. Unfortunately, the Symposium did not include any participants who were experts focused directly on minority or Indigenous representation. We strongly encourage all parties and individuals with decision-making power to consult with such experts. In particular, Indigenous leadership, including Indigenous women, must be part of the decision-making process. It should also be noted that many Indigenous Canadians seek nation-to-nation representation, rather than representation inside Canadian institutions. This is another critical reason for significant, wide, and diverse consultation.

Part II. Recommendations on the Referendum Process

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Recommendation F: Format of the referendum ballot

The Symposium recommends a referendum ballot composed of two questions:

- Question 1 asking voters whether British Columbia should adopt a proportional voting system, to be selected from one of the systems in Question 2;
- Question 2 asking all voters (including those who voted against PR in Question 1) to rank two to four specific proportional voting systems.

Voters should be informed that they can respond to either one of the questions without responding to the other, and that they can rank as many of the systems in Question 2 as they wish. The outcome of Question 2 will determine the new voting system to be used in British Columbia in the event that Question 1 passes.

We recommend that the systems in Question 2 be chosen from the list of five systems presented in Part I of this report (Recommendation D). If other systems are chosen, we recommend that they satisfy at least our list of minimum requirements (Recommendation A) and additional criteria (Recommendation B).

We believe that a two-question referendum structure is best for several reasons. First, by separating the issues in this manner, this structure would clarify the mandate for switching to a proportional system if the referendum passes. The Government has already announced that the threshold for adopting PR will be 50%+1. It is therefore important for the referendum to include a question with a binary (yes/no) choice on precisely this matter.

Second, it is important to offer voters a clear say in which specific PR system should be adopted. In the current climate, it is important to avoid the perception that by voting for PR, voters would be offering politicians a "blank cheque". We believe that a system actually chosen by voters would be more accepted than the same system would be if chosen outside of a direct democratic process.

Finally, the two-question structure allows voters to vote on either or both questions independently. For instance, many voters may have a strong opinion on whether BC should switch to a proportional voting system, but not be interested in choosing the details of a new system. Others may want to vote against change, yet still have a say on which system should be used if a change is made.

Recommendation G: Wording of the referendum questions

It is well known that the wording of a referendum or survey can have a decisive influence on the outcome. Thus, careful attention needs to be given to the wording of each question, in order to avoid swaying voters to one side or the other. To this end, we offer the following recommendations:

- Question 1 should be asked in a completely neutral fashion, without attempting to convey or influence voter values. Thus, for instance, formulations such as "Should British Columbia modernize its voting system?" are to be avoided.

- Question 1 should be asked in a way that minimizes known biases such as status-quo bias. Thus, a yes/no formulation, as well as words such as "keep" and "change", should be avoided.

- In Question 2, the names of the methods under consideration should be given in full: for instance, "Single Transferable Vote" or "Flexible District Proportional Representation", rather than "STV" or "FDPR".

Recommendation H: Using pairwise comparisons to evaluate the outcome of ranked-choice voting

For Question 2, where voters are asked to rank different PR systems, we highly recommend checking for the existence of a pairwise (aka "Condorcet") winner before using another method such as instant-runoff voting to evaluate the outcome. This is even more important if, contrary to our Recommendation F above, the ballot consists of only one question where voters are asked to rank FPTP alongside several proportional systems (as was done in the PEI Plebiscite in 2016). In this case, the fundamental outcome of the referendum (FPTP or PR) may be at stake.

Recommendation J: Detailed information to be made available to voters

When voters are asked to choose between voting systems (as in Recommendation F, above), they must have enough information to evaluate the specific implications of each system under consideration. Thus, enough details on each system must be worked out in advance of the referendum, so that voters have access to at least the following information:

- Number of districts under each system and how many seats each district will have (district magnitude);

- Approximate geographical size of districts (although specific district boundaries can be left to a later stage);

- (For systems that use regional lists) Approximate regions into which the province will be divided;

- Ballot structure under each system, including:

- Does the system ask voters to pick candidates or to rank them? If rank, do you have to rank everyone?
- How many separate votes will each voter have? (E.g. in our proposed implementation of MMP, each voter has two votes: one local, one regional.)
- Do voters vote for a candidate, a party or both? (None of our proposed systems ask voters to vote for parties, but if such a system is included on the ballot, voters must know about this characteristic.)
- Are voters allowed to vote for (or rank) candidates from different parties?

- How, precisely, will votes be converted to seats under each system? This includes the threshold for candidate / party inclusion, if any.

We realize that it may not be possible to work out the full details for each system by the time the wording of the referendum ballot has to be finalized. This does not pose a problem for our recommendation, since the ballot itself would need to include only the names of the systems under consideration (e.g. "Dual Member Proportional Representation", "Local Proportional Representation", etc.) The details can then be worked out over the summer. Possible participants in this process could include the Attorney General's Office, the Public Service, Elections BC, an all-party committee, a neutral government commission, etc. The process should also involve consultation with Indigenous and First Nations leadership, the Parliamentary Secretary for Gender Equality, and citizens' groups. Finally, we encourage the government to continue to seek expert input throughout the process, and would be happy to offer our own assistance at any stage.

Recommendation K: Citizen deliberation

Changing the electoral system is not a trivial matter: at stake are the democratic rules of the game. It is important, therefore, that such changes not only strengthen the quality of our democracy but that they be undertaken in a way that is –and is perceived to be – democratic. A fair, open, and inclusive process for reform is essential to attaining a clear mandate for change.

The experience of other countries, as well as British Columbia's own past experience with electoral reform, are instructive in this respect. Since electoral systems are complicated institutions, and it can take some effort to grasp even their basic features, it is particularly important that citizens be given good answers to such questions as: "*Why is change necessary or desirable?*" and "*Why should we trust a government to change the system?*" These answers must come from trusted sources. One of the lessons from the 2004 BC Citizens' Assembly (CA) was that, the more voters learned about the CA process, the more likely they were to support the CA's recommendations. They came to trust the CA as a body that was representative of British Columbians and working to advance the interests of all citizens, rather than those of a party or government.[8]

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[8]See Patrick Fournier, Henk van der Kolk, R. Kenneth Carty, Andr Blais, and Jonathan Rose, *When Citizens*

The BC Citizens' Assembly was a substantial undertaking, and it is probably neither feasible nor necessary to repeat that experience. However, there are other less costly and less complex forms of citizen deliberation that can still be used during the current referendum process. Here we highlight two such mechanisms: a deliberative poll, which can be used to determine not just what voters currently think about an issue, but what they would think if they had the time and opportunity to learn more about it; a Citizens' Jury, in which a representative group of citizens takes the time to learn about a complex issue in depth and then issues a recommendation to fellow citizens and/or policy makers.

Each of these deliberative mechanisms is described in more detail in Appendix C. Note that a key feature of both Citizens' Juries and deliberative polls is that they would bring together citizens from across BC – including the Lower Mainland, the Island, the Interior and the North – thereby enabling a conversation that is explicitly and by design sensitive to the diversity of the province.

Ideally, we would recommend that a deliberative poll be held as soon as possible in order to determine which proportional voting systems should be included in Question 2 of the referendum. Although there may not be sufficient time to complete this process before the ballot needs to be finalized, we urge that the possibility be at least seriously considered.

In addition, as soon as specific details are available for each voting system on the ballot (see Recommendation J), we urge that the government convene a Citizens' Jury to deliberate on the options that citizens will be asked to choose between (including FPTP). The Jury's final report should then be distributed and publicized widely. This would not only raise the level of public knowledge, but would help neutralize much of the partisan and polarizing debate that is likely to be generated by the referendum campaign. The imprimatur of a Citizens' Jury would go a long way toward giving citizens confidence in the integrity of the referendum process.

Although the Citizens' Jury will not be able to meet for several months, the recruitment and selection of a broadly representative group of jurors is itself a lengthy and time-consuming process. We therefore recommend that the Government allocate funds and begin preparations for the Citizens' Jury immediately, preferably designating a university or non-profit organization to oversee the process.

Recommendation L: Materials to accompany the referendum ballot

To increase participation and to help voters make an informed decision, we recommend that the following materials accompany the referendum ballot:

- A high-level, accessible description of all the systems on the ballot, with links to further online resources.
- A more complete description of each of the systems on the ballot, containing all the details listed in Recommendation J above.

- The report of a Citizens' Jury on both the relatives merits of PR vs FPTP and specifics of each PR system (Recommendation K).

To ensure that all voters have access to this information, it is important that the above materials be included in the same mailing as the referendum ballot itself, rather than mailed separately. They should also be made available online.

Recommendation M: A follow-up referendum

If the 2018 referendum passes, we recommend that there be a follow-up referendum after at least 2-3 election cycles, in which citizens will have the opportunity to vote on whether to stay with the new proportional system. The Government should make an explicit commitment now that such a referendum will be held in the future.

This second referendum will allow citizens to reevaluate their new electoral system once they have seen it in action. This was the approach taken in New Zealand, where it helped increase citizen confidence in the election reform process.

Appendix A. Details on the proposed MMP design

MMP design features

In our recommendations on proportional voting systems, we proposed for serious consideration a specific MMP design based on the system used in Bavaria. The specific features listed below indicate how the Bavarian system should be adapted to produce an open-list MMP model for BC.

Z1. BC is divided into 6 - 8 regions. This ensures that MLAs elected from an open list are dedicated to a specific region of the province, and allows the current number of seats in each region to be maintained.

Z2. No more than 65%, and ideally only 50%, of the seats in each region are district seats; the other 35%-50% are regional seats. A ratio of 40% or more regional seats is favoured by a number of experts in order to fully compensate parties underrepresented at the district level. A ratio of 50% may be preferable, despite the larger district size; in this arrangement, neither the district MLAs nor the regional MLAs would outnumber the other, and thus neither group would be considered marginal.

Z3. Voters cast two votes; the 1st vote is for a party-affiliated or independent district candidate, the 2nd vote is for a party-affiliated candidate on one of the regional party lists. The two votes can be marked on separate ballot papers, as in Bavaria, or on a single ballot paper with two sections.

Z4. The regional party lists are entirely open; voters, not politicians, determine which candidates receive their preferred parties' regional seats. We caution against the use of flexible lists, in which a party's list order is overridden by voters only for candidates that receive over a certain threshold of their party's votes. In cases where the threshold is not met, flexible lists may give rise to the perception that the will of the voter is being ignored. By basing the ordering of candidates entirely on voters' preferences, open lists avoid this potential source of voter dissatisfaction.

Z5. 1st votes and 2nd votes are added together to determine each party's share of the seats in each region. This minimizes the risk of introducing ticket-splitting tactics, as explained below.

Z6. A party-affiliated candidate **never** appears on the party list section of the ballot in the district they contest; however, they **always** appear on their party's list when the list is presented in other districts in the region. Candidates who do not win their districts are ranked within their parties according to the sum of their 1st votes (received in their district) and 2nd votes (received in other districts in the region).

Z7. Under no circumstance should the size of the Legislative Assembly exceed the size provided for by the law. If a party wins more seats at the district level than is allocated to it

regionally, the party retains the extra district seats and an equal number of regional seats are withdrawn from other parties.

Aggregating the two votes to discourage tactical voting

Although most two-vote MMP models allocate seats to parties based on their share of the 2nd (list) vote, we endorse the Bavarian convention whereby 1st votes and 2nd votes are added together to determine each party's seat share. The rationale for including both votes in the seat allocation formula is to minimize the risk of inviting a specific form of tactical voting.

When seat allocations are based entirely on 2nd votes, there is often a strategic incentive to give the 1st (district) vote to a large party candidate with reasonable chances of winning the local seat and the 2nd (list) vote to a small party that is more likely to receive at least one compensatory seat. British Columbians will understand from their experience under FPTP that a 1st vote is most likely to be effective if given to a candidate of one of the locally most popular parties.

However, what may quickly become apparent under certain MMP designs is that in some regions, a large party may receive such a significant share of the district seats that they become extremely unlikely to receive regional seats as compensation. Thus voters who genuinely prefer these successful parties, and who would therefore be adequately represented at the local level, may attempt to further improve their representation by giving their 2nd vote to a somewhat less preferred smaller party. The more voters adopt this brand of tactical voting, the stronger the incentive becomes for other voters to follow suit.

The potential appeal of such ticket-splitting tactics can be seen by considering the experience of Scotland and Wales. There are numerous documented instances of large party supporters being encouraged to give their 2nd votes to smaller parties. The exact messaging behind these appeals varies, but a common element is the idea that a 2nd vote for a regionally dominant party is "a wasted vote", and hence there is no harm in giving the 2nd vote to a smaller party with similar policies.

Moreover, there is evidence that Welsh voters do in fact follow these tactics. In the most recent Welsh Assembly election, Labour received more 1st votes than 2nd votes in the four regions where it dominates locally but has never won a regional seat; yet Labour received more 2nd votes than 1st votes in the one region where it is not the most popular party locally. This pattern suggests that appeals for tactical voting may be achieving a degree of success in terms of influencing voters' decisions. Labour's seat share in this election was 17 percentage points higher than its vote share: a significant contradiction of the principle of proportionality. In all four preceding elections, Labour was overrepresented by more than 10 percentage points. Although it is not the only factor, the convention of excluding 1st votes from the seat allocation formula may well have had the effect of increasing these distortions.

The Bavarian system, one the other hand, has functioned well over the nearly 70 years since its introduction in 1949. The fact that both 1st and 2nd votes are counted as votes for a

party renders ticket splitting tactics illogical, and this might have been a contributing factor toward the system's longevity and success. Although the Bavarian convention takes away a small party's ability to appeal for 2nd votes on a strictly tactical basis, it allows such a party to compete effectively for both types of votes. Thus small parties are not necessarily disadvantaged, and importantly all parties have an incentive to compete for all votes. Thus, if a two-vote model is considered for BC, we strongly recommend that the distribution of list seats be made on the basis of the aggregate of 1st and 2nd votes.

Election thresholds

Many implementations of PR that involve party lists, including some forms of MMP, incorporate explicit election thresholds. Any party that would have been allocated seats but fails to meet the threshold is denied any list seats. The list seats are then re-allocated among the parties that surpass the threshold. If explicit thresholds are incorporated into the open-list MMP model described above, we anticipate that they would be applied at the regional level. A party that fails to meet the threshold in one region would still be permitted to obtain list seats in other regions.

In choosing appropriate thresholds for an MMP model, it is important to first consider whether any such threshold is necessary. Depending on the number of seats in each region and the seat allocation formula (e.g. largest remainder, D'Hondt), natural thresholds may exist that would render any reasonable explicit threshold redundant. Thus depending on implementation details, it may be best to avoid explicit thresholds altogether.

In the event an explicit regional threshold is deemed to be necessary, failure to meet the threshold should not preclude a party from winning district seats in that region. This is one of the few aspects of a two-vote MMP model for which the Bavarian convention should not be adopted in BC. In Bavaria, a candidate who wins their district is denied the district seat if their party does not surpass the election threshold. In BC, we recommend that the plurality winner always receive the district seat, as is the tradition under the current system.

Optional transfer rule to minimize wasted votes

There is one additional rule which may be desirable in a British Columbian context. This rule would help minimize wasted votes, improve proportionality, and reduce incentives for strategic voting, especially in the context of independent candidates. MMP without this additional rule would still be acceptable, but we feel that this rule deserves consideration.

Z8. 1st votes and 2nd votes are cast on the same physical ballot paper. Then, once the ballots are tallied, if exactly one of these two votes was cast for a party or independent which received no seats, then, for the purposes of determining party shares, that "ineffective" vote is recounted for the party which was supported by the other vote on the same ballot.

A vote would be "ineffective" and thus recounted if the given candidate did not win at the local level, AND the given party or candidate got less than a Droop quota of votes at the regional level (before transfers), defined as the total number of valid votes at the regional level divided by the total number of seats plus one. For this rule to make sense in this form, the distribution formula should guarantee that if possible each party with at least a Droop quota of total votes (before transfers) will be given at least 1 seat; generally speaking, this will happen naturally.

To illustrate how this enhancement might work, here are two hypothetical vote scenarios:

Scenario 1: A ballot is cast with the 1st vote for independent candidate B and the 2nd vote for candidate C from Party X. Independent candidate B does not win the local seat and does not get a Droop quota of total votes, while Party X gets over a Droop quota. Therefore, instead of the 1st vote being wasted, this ballot is counted as 2 votes for Party X, of which 1 counts for candidate C and the other counts for no individual candidate.

Scenario 2: A given ballot is cast with the 1st vote for candidate C from Party X and the 2nd vote for candidate D from Party Y. Party Y does not get a Droop quota of votes and none of its candidates wins locally, while Party X gets over a Droop quota. Therefore, instead of the 2nd vote being wasted, this ballot is counted as 2 votes for party X, of which 1 counts for candidate C and the other counts for no individual candidate.

This rule could also be used in a partial form in which only 1st votes are recounted, as in scenario 1 above, while 2nd votes, as in scenario 2, would not be recounted. This weakened form would have some of the same advantages, without the need to explicitly guarantee that a party with at least one Droop quota would get at least 1 seat.

In either case, while the decision about whether this rule would be used and its precise form and wording is important, it remains a relatively minor detail compared to the overall choice of whether to put MMP on the referendum ballot. As such, this decision could, if desired, be made after the basic form of the referendum ballot was fixed.

Appendix B. Criteria used in Table 1

Effective representation

Partisan proportionality: Does each party's proportion of seats closely match their proportion of votes?

The ratings in this section are based on empirical outcomes for those systems in broad use elsewhere, and on simulations for those systems that are newly-proposed. Of course, the conditions in British Columbia may not exactly match those elsewhere, or may not exactly accord with those assumed in the simulations; however, we believe that the overall patterns expressed here are relatively robust to such differences.

- **MMP**: High proportionality within large regions. We expect that regions would contain approximately 10-15 seats each, leaving partisan disproportionalities generally under 5% in each region, and probably even lower province-wide.

- **DMP**: High proportionality province-wide. There are essentially only two ways that discrepancies could be more than 1%: if the pattern of support for independent candidates is unusual, or if small candidates get appreciable support across many districts yet end up with few candidates who surpass the 5% local threshold. We expect that the likelihood of these occurring would be sufficiently low that any disproportionalities should be within a few percentage points.

- **STV**: Moderately high proportionality within multiseat districts. We expect that the typical STV district would have 5 seats, which would mean that if most voters ranked at least two viable candidates, disproportionality in each district would always be under 16% and very likely under 8%. This district-level disproportionality would probably cancel out somewhat, so that overall disproportionality would likely be around 5% or less.

- **LPR**: Moderately high proportionality within multiseat districts. This system is essentially the same as STV in this regard.

- **FDPR**: High proportionality within large regions; in some places, also moderately high proportionality within multiseat districts. Regional seats in regions of 15 or more seats would tend to guarantee high proportionality for all but the smallest parties on a regional basis. This system would also give STV-like proportionality in places where multi-seat districts are used.

- **ROPR**: High proportionality within large regions. Internationally speaking, ROPR regions tend include an average of 15 or more seats, and this system gives good proportionality in such regions.

Wasted votes: Wasted votes are those that do not affect the result, either in terms of which party wins each seat or in terms of which individual gets that seat. For example, under FPTP,

any vote for a non-winning candidate (averaging around 50% of votes in Canadian elections) is wasted. Systems with few wasted votes will naturally tend to be highly proportional, but systems with more wasted votes aren't necessarily disproportional, because it's possible for votes to be wasted proportionally from all parties.

- **MMP**: Very few (votes for parties with very weak regional support).

- **DMP**: Very few (votes for tiny parties). If none of a party's candidates passes the 5% threshold, votes for that party would be wasted. Because a party's support is unlikely to be perfectly even across districts, typically that will not happen unless the party has under 3% support overall.

- **STV**: Some ballots with incomplete rankings; and around 15% of others. STV is designed to ensure that just one "Droop Quota" of votes is wasted; in 5-seat districts, this is 16.7% of votes.

- **LPR**: Some ballots with incomplete rankings; and around 15% of others. As with STV.

- **FDPR**: Very few (votes for parties with very weak regional support).

- **ROPR**: Very few (votes for parties with very weak regional support).

Geographic representation

Area of geographically largest districts: Because population density varies widely across BC, one concern is that the geographically largest districts (the ones with the lowest population density) should not be too large. This is expressed in terms of how much population these districts would have as compared to under FPTP, which is among the best systems on this criterion; so higher numbers are generally considered worse.

- **MMP**: 1-2x current. While average district size would be 1.7-2x current, the sparsest/largest districts could be made as small as 1x current without having disproportional partisan voting power.

- **DMP**: 1-2x current. While most districts would be 2x current, the sparsest/largest districts could be 1x current without having disproportional partisan voting power.

- **STV**: 3-5x current.

- **LPR**: 1x current. Note that LPR puts each voter into both a single-seat and a multi-seat district; this "1x" refers to the size of the single-seat district only.

- **FDPR**: 1.1x current.

- **ROPR**: 8-10x current. This largely depends on implementation but we feel that these numbers are reasonable.

Regional direct representation and ***Regional partisan representation:*** These are two subtly-different measures of representation.

- The first refers to individual support: what fraction of voters have *someone they directly supported* who represents them?

- The second refers to partisan support: what fraction of voters have *someone from their preferred party* who represents them?

In general, systems with added regional seats do better on partisan representation, while other systems do the same on both measures. Voters whose votes are wasted (as defined above) are considered to have neither direct nor partisan representation.

- **MMP**: Direct: A majority of voters (some locally, the rest regionally); Partisan: Almost all voters (some locally, the rest regionally)

- **DMP**: Direct and Partisan are same: A majority of voters (all locally).

- **STV**: Direct and Partisan are same: Most voters (within a multi-seat district)

- **LPR**: Direct and Partisan are same: Most voters (some locally, otherwise within a multi-seat district)

- **FDPR**: Most voters (most locally, the rest regionally); Partisan: Almost all voters (most locally, the rest regionally)

- **ROPR**: Some voters (all regionally); Partisan: Almost all voters (all regionally)

Competitiveness

Within-party competition: How much choice do voters have in determining which of a party's candidates get its seats?

- **MMP**: Choice in regional list; principally for medium- or small-sized parties

- **DMP**: No. Larger parties would run two candidates per district, and the order of the two would be listed on the ballot.

- **STV**: Choice within multiseat district

- **LPR**: Choice within multiseat district

- **FDPR**: Choice for voters in multiseat districts, but not in single-seat districts (unless parties ran multiple candidates, which we expect would happen rarely if at all).

- **ROPR**: Choice within region

Entry bar for independent candidates: This criterion embraces both formal and informal limits on independent candidates' competitiveness.

- **MMP**: low with transfer rule, high without. Without the transfer rule (see Appendix A), voters would have a strong incentive not to vote for independent candidates who are not clearly already winning; the transfer rule resolves this issue.

- **DMP**: medium. On the one hand, independent candidates can win a seat by coming in second place; on the other, votes for them are wasted if they don't win.

- **STV**: low. Voters can safely vote for an independent, and as long as they rank further candidates, that vote will not be wasted even if the independent doesn't win. This is the same as the situation for non-independent candidates.

- **LPR**: low. As with STV.

- **FDPR**: low in multi-seat districts (as with STV), medium in single-seat districts (as with FPTP).

- **ROPR**: impossible; under standard implementation, independents cannot run.

Competitive seats: How many seats are competitive, rather than being almost certain to go to a particular candidate? "Competitive" means that a swing of less than around 5% of the relevant voters from one candidate/party to another (that is, a swing of around 10% in terms of margin) could change the outcome.

- **MMP**: Most regional seats, some district seats (those with a naturally low margin).

- **DMP**: First seat in some districts (those with a naturally low margin), second in most districts

- **STV**: Almost all

- **LPR**: Almost all

- **FDPR**: Almost all seats in multiseat districts; some seats in single-seat districts (those with a naturally low margin); most regional seats

- **ROPR**: Almost all

Diversity

Representation of women, Indigenous, and minority groups: These considerations are too important to leave out of any comparison, but too complex to summarize in a table. See the discussion of these issues in Recommendation E above.

Voter experience

Ballot format: What does the ballot ask voters to do? (Choose 1, choose 2, or rank several)

- **MMP**: Choose 2 (one local, one regional)
- **DMP**: Choose 1
- **STV**: Rank candidates
- **LPR**: Rank candidates
- **FDPR**: Rank candidates
- **ROPR**: Choose 1

Ballot size: How many choices are on the ballot? (small = 1-2 candidates per party; medium = 3-5 candidates per party; large = 6-8 candidates per party) This is generally based on district magnitude.

- **MMP**: local: small; regional: large
- **DMP**: small
- **STV**: medium
- **LPR**: medium
- **FDPR**: small in in single-seat districts; medium in multi-seat districts
- **ROPR**: large

Incentives for strategic voting: How, and to what extent, are voters pushed to vote strategically, rather than just honestly? (Less is better.)

Note that it's mathematically impossible to create a democratic voting system with no strategic incentives, but some systems have relatively few or weak incentives. For the systems evaluated, we've termed these incentives as "slight" by comparison with the stronger incentives under FPTP.

- **MMP**: Slight incentive to vote for larger parties locally

- **DMP**: Slight incentive to avoid weak parties

- **STV**: Almost none (small possibility in the smallest districts of compromise strategy to avoid premature elimination)

- **LPR**: Almost none (as in STV above)

- **FDPR**: Slight strategic incentives for voters in single-seat districts

- **ROPR**: Within-party strategy (support marginally-viable candidates)

Simplicity

Simple to describe? How easy is it to explain the basics of how each voting system works? This includes questions like what a voter has to do and how votes are converted into outcomes (e.g. why did candidate X win). These are evaluated on a scale where "very simple" describes FPTP and "complex" would describe something like the U.S. presidential election system.

- **MMP**: Fairly simple

- **DMP**: Fairly simple

- **STV**: Medium

- **LPR**: Medium

- **FDPR**: Medium

- **ROPR**: Very simple

Ease of implementation: Extra steps in implementing system and/or counting votes.

- **MMP**: To implement, redraw districts. To count, recounting transfers is an extra step if the suggested transfer rule is used.

- **DMP**: To implement, redraw or group districts. To count, no additional steps over FPTP.

- **STV**: To implement, draw or group multiseat districts. To count, centralize STV counting in each district.

- **LPR**: As with STV.

- **FDPR**: To implement, redraw districts. To count, centralize STV counting in some districts.

- **ROPR**: To implement, group districts into regions. To count, no additional steps over FPTP.

Canadian and international context

Use in other countries: Examples of other countries, if any, that use or have used this system.

- **MMP**: Germany, New Zealand, etc.

- **DMP**: None

- **STV**: Ireland, Malta, Australian state legislatures, etc.

- **LPR**: None

- **FDPR**: Unranked version of FDPR is similar to some two-tier systems in Scandinavia

- **ROPR**: One of the most commonly used proportional representation systems in the world

History in Canada: Whether the system has been proposed in previous Canadian electoral reform processes.

- **MMP**: Proposed by the Law Commission of Canada (2004) and the Ontario Citizens' Assembly (2006). Won the PEI plebiscite (2016), but not enacted.

- **DMP**: Most second-choice votes in PEI plebiscite (2016), out of 5 options

- **STV**: Proposed by BC Citizens' Assembly in 2004; had 2 referendums (2005 and 2009)

- **LPR**: Invented in Canada in the context of ERRE (2016)

- **FDPR**: Invented in Canada in the context of ERRE (2016)

- **ROPR**: None

Appendix C: Deliberative mechanisms

Deliberative polls

A deliberative poll combines public opinion research with citizen deliberation. Its goal is to determine not just what members of the public currently think about an issue, but what they would think if they had the time and opportunity to become better informed.

The first step is to select a representative sample of the population to determine the current state of public opinion, as one would for a regular poll. Respondents are asked to complete an initial questionnaire to establish their knowledge and preferences regarding electoral reform.

Next, another, smaller random sample is selected for the deliberation stage. This group should include citizens from every district of British Columbia. Participants are provided with authoritative and neutral briefing materials and then invited to gather in one place and to engage in a process of deliberation over the course of a day or two. During the deliberations, participants are randomly assigned to small groups, with facilitators to guide them through the materials. They are encouraged to develop questions to pose to a panel of experts and policymakers in a plenary session at the end of their time together.

Afterwards, participants are asked to fill out another questionnaire, designed to capture their considered views of the issues discussed. The results are compared with the initial questionnaire and analyzed by trained pollsters before being widely disseminated through the media and used to inform the next stage of the policy process.

An advantage of a deliberative poll is that it is possible to report not only on the final outcome, but also on the participants' process of decision-making, thereby exposing the kinds of issues that weigh most heavily in the thinking of ordinary citizens as they contemplate changing the electoral system.

Citizens' Juries

A Citizens' Jury typically involves a group of roughly two dozen randomly selected and demographically representative individuals who are charged with providing advice on a question of public policy. The Jury meets for up to one week. Jurors are given clear guidance at the outset and time to review materials. They hear the opinions of experts and advocates of different options, ask questions of these "witnesses", and are given time to deliberate collectively.

At the end, the Jury issues a formal recommendation to fellow-citizens or leaders. The report is written by the jurors themselves and presented in a public forum or hearing. Jurors are then asked to assess the process, discuss any biases they feel may have affected the outcome, and provide any personal statements they wish to make. All of these materials are included in the Jury's final report.

Appendix D. Minority recommendation

The recommendation below was embraced by a substantial number of Symposium participants, but some felt that they could not sign on to it. For those who did not sign, reasons vary. Not signing this recommendation should not be interpreted as endorsement for any specific alternative recommendation.

Signatories

Maxwell Cameron
    Centre for the Study of Democratic Institutions, University of British Columbia

Eline de Rooij
    Department of Political Science, Simon Fraser University

Antony Hodgson
    Fair Voting BC

Grace Lore
    Department of Political Science, University of Victoria

Jason McLaren
    Fair Vote Canada - BC

Jameson Quinn
    Department of Statistics, Harvard University

Gisela Ruckert
    Fair Vote Kamloops

This Symposium's Recommendation F (signed by the signatories of Part II) calls for a two-question referendum ballot, so that, if a majority of voters endorse the switch to PR in Question 1, a specific PR system would immediately be selected by the voters in Question 2.

In contrast, other groups have recommended that the referendum ballot consist of a single question, asking citizens to vote only on whether to switch to proportional representation, with the specific system to be decided later. This ballot format is often referred to as the "mandate-only" option. In the event that the Government chooses to pursue this route, we would like to offer some additional contingent recommendations.

A mandate-only ballot runs the risk of voters feeling that they are being asked to sign a blank cheque. For this reason, it is essential to spell out in advance the process by which the new system would be designed. If the Government decides on a mandate-only ballot question, we

urge that a committee or panel of distinguished British Columbians be designated before the referendum and tasked with recommending a new electoral system if the voters opt to switch to PR.

In addition, it is of utmost importance to implement a deliberative poll, a Citizens' Jury, or both, to supplement or reinforce the work of such a body. For instance, the panel could take the results of a deliberative poll as input, before proposing specific electoral systems for consideration. It could then solicit the advice of a Citizens' Jury before making the final recommendation to the government. Even better, overseeing these deliberative processes could be designated as the panel's primary task, so that the final say on the matter is left to the citizens themselves.

A pledge by the government to abide by this process, and to have no hand in managing or interfering in it, would be essential to the success of the enterprise from the standpoint of its legitimacy in the eyes of the public. Whether this pledge is spelled out on the ballot or in supplementary material is a matter worthy of further consideration. The key, however, is a credible pre-commitment. It is vital for voters to know that, by saying yes to reform, they are saying yes to a process that they understand and can trust.

Appendix E. List of Symposium participants

Participants signing all or part of the Symposium's report

Maxwell Cameron

Director, Centre for the Study of Democratic Institutions, School of Public Policy & Global Affairs

Professor, Department of Political Science, University of British Columbia

Maxwell Cameron specializes in comparative politics, constitutionalism, and democracy. His most recent books include *Strong Constitutions* (Oxford University Press, 2013) and *Political Institutions and Practical Wisdom* (forthcoming with OUP, April 2018). As the director of UBC's Centre for the Study of Democratic Institutions, Dr. Cameron has been the organizer of the Summer Institute for Future Legislators, which provides mentoring and training for aspiring elected officials. He is a frequent commentator on politics in the media, as well as on his blog, Practical Wisdom.

Eline de Rooij

Assistant Professor, Department of Political Science, Simon Fraser University

Eline de Rooij's research interests concern aspects of comparative politics and political sociology, particularly voter mobilization, political attitudes and political behaviour, as well as political engagement of minority and marginal groups, anti-immigrant attitudes and ethnic prejudice. She also has a specific interest in research design and methods – particularly field experimental methods – as it relates to these topics as well as more generally. Dr. de Rooij's research has been published in the top journals in her discipline. She is a member of the Steering Committee of the Centre for Public Opinion and Political Representation at Simon Fraser University.

Rhys Goldstein

Simulation Researcher, Toronto, ON

Rhys Goldstein is a computer simulation researcher and a voting systems enthusiast. He has contributed to a number of online resources on electoral reform, including the interactive website votingreform.ca and a YouTube video explaining the Dual Member Proportional voting system.

Sean Graham

Inventor of the Dual Member Proportional electoral system, Edmonton, AB

Sean Graham holds degrees from the University of Alberta in math, physics, and political science. He developed Dual Member Proportional with research funding from the University of Alberta in 2013. In addition to appearing as an expert witness before Canada's Special Committee on Electoral Reform, he provided advice and research material to the PEI Special Committee on Democratic Renewal during their deliberations on voting systems. In 2016, Dual Member Proportional was included in PEI's plebiscite on electoral reform, and Sean's work supported Elections PEI in preparing educational material for www.YourChoicePEI.ca/, the neutral source of information for the plebiscite.

Alex Hemingway
>   *PhD Candidate, Department of Political Science, University of British Columbia*

Alex Hemingway is a Doctoral Candidate in comparative politics, with a research focus on political inequality and economic class in the advanced industrialized world, including Europe and Canada. His dissertation examines the class backgrounds of legislators across a range of developed countries, using quantitative methods to study the effect of legislators' class on their representation of economic and redistributive policy issues. He is also CCPA-BC's Public Finance Policy Analyst. His work focuses on the state of public finances and services in BC, including tax fairness, education, health care, social programs and regulation.

Antony Hodgson
>   *President, Fair Voting BC*

Antony Hodgson has been President of Fair Voting BC since 2009 and has been on the board of directors since the 2005 referendum on BC-STV. During his tenure as president, Fair Voting BC has participated in almost all electoral reform initiatives, both within BC and across Canada. During the 2015 federal electoral reform process, he worked with Byron Weber Becker and Fair Vote Canada to develop the Flexible District Proportional Representation (FDPR) and Local Proportional Representation (LPR) models. In his day job, Dr. Hodgson is a professor of biomedical engineering at the University of British Columbia.

Marc Kilgour
>   *Professor, Department of Mathematics, Wilfrid Laurier University*

Marc Kilgour has published widely on the mathematical analysis of multi-party decision problems, and has applied game theory to arbitration, voting, and fair division. He was co-editor of the *Handbook of Group Decision and Negotiation* (2010), President of the Peace Science Society in 2012-13, and President of the INFORMS Section on Group Decision and Negotiation in 2014-17.

Grace Lore
>   *Department of Political Science, University of Victoria*

Grace Lore is a adjunct professor at the University of Victoria where she teaches Gender and Politics. Her research focuses on electoral systems, institutional design, and the representation of and by women in politics. She has worked alongside Equal Voice to support systemic change initiatives to improve women's democratic participation in Canada.

Louis Massicotte
>   *Professeur, Département de science politique, Université Laval*

Louis Massicotte's research focuses on electoral systems, constitutions, and parliamentary institutions. From 2003 to 2005, he acted as technical advisor to the Government of Quebec concerning electoral system reform. He has published numerous books and articles, including *Establishing the Rules of the Game: Election Laws in Democracies* (with André Blais), *Le Parlement du Québec depuis 1867* (2009) and *Comment changer une constitution? Les nouveaux*

processus constituants (2011). A former staffer in the Library of the Canadian Parliament and Elections Canada, Dr. Massicotte has been involved in the development of democratic institutions in more than a dozen countries, most of them in francophone Africa.

Jason McLaren

Vice Chair, Fair Vote Canada BC

Jason has been a volunteer in the electoral reform movement since the 2007 referendum on MMP in Ontario. He is currently on the board of Fair Vote Vancouver, Fair Vote Canada BC, and the Make Every Voter Count Society. He has lived in Metro Vancouver since 2009, and works as a software developer.

Jameson Quinn

Vice Chair, Center for Election Science

PhD Candidate, Department of Statistics, Harvard University

Jameson Quinn's academic research focuses on statistical models for evaluating voting methods. He has been involved in voting reform for over 20 years. He designed the "E Pluribus Hugo" voting method, now used by thousands of voters to nominate works for the world's oldest science fiction literary awards. Together with Mira Bernstein, he was one of the primary organizers of the BC Symposium on Proportional Representation and one of the chief writers of this report.

Gisela Ruckert

Team Leader, Fair Vote Kamloops

Since returning to Canada after completing a Master's in Environmental Studies and Sustainability Science in Sweden in 2017, Gisela works as a grassroots advocate for more resilient local communities through groups such as Transition Kamloops and the BC Sustainable Energy Association. Gisela is the team leader of Fair Vote Kamloops and a member of the Fair Vote Canada - BC Steering Committee in the campaign to win the 2018 referendum on electoral reform in BC.

Members of the Symposium participating in an advisory manner

André Blais

Professor, Department of Political Science, Université de Montreal

André Blais' research concentrates on elections, electoral systems, turnout, public opinion, and methodology. He is the author and editor of numerous books and articles, including *Establishing the Rules of the Game: Election Laws in Democracies* (with Louis Massicotte) and *When Citizens Decide: Lessons from Citizens' Assemblies on Electoral Reform* (co-edited). Dr. Blais is the leader of the Making Electoral Democracy Work Project and was the chair of the Planning Committee of the Comparative Study of Electoral Systems (CSES) from 2009 to 2014. He is a fellow of the Royal Society of Canada and past president of the Canadian Political Science Association. He holds a Research Chair in Electoral Studies at the Université de Montréal

Richard Johnston

Professor, Department of Political Science, University of British Columbia

Richard Johnston holds the Canada Research Chair in Public Opinion, Elections, and Representation at UBC and is also affiliated with the Institute for European Studies. His research on electoral and party systems involves close investigation of patterns in Canada and the US. On the Canadian side, much of the work is captured in his recent book, *The Canadian Party System: An Analytic History.* Dr Johnston's other research interests include communications media and campaigns, as well social capital, diversity and the welfare state.

Mira Bernstein

Research Assistant Professor, Program in Science, Technology, and Society, Tufts University

Mira Bernstein received her PhD in pure mathematics, but since 2008 her work has focused on using mathematics to solve social problems – from exploring the effects of extending health insurance to low-income populations in the US to combating slavery and forced labor throughout the world. In 2017, Dr. Bernstein became a founding member of the Metric Geometry and Gerrymandering Group at Tufts University. Her work on gerrymandering has led to her interest in electoral systems more generally. Together with Jameson Quinn, Dr. Bernstein was one of one of the primary organizers of the BC Symposium on Proportional Representation and one of the chief writers of this report.