

May 2019

Peter Vanberkel
CORS Secretary

Dear Peter,

**RE: Canadian Operational Research Society
Annual Membership Report 2018–2019**

I am pleased to submit a copy of the 2018–2019 Annual Membership Report of the Canadian Operational Research Society, which documents the membership activities experienced by the Society over the past year, for the CORS Council consideration. The report provides Council with the information it needs to assess the health and well-being of the Society; to monitor the effectiveness of membership processes and practices; and to identify areas where policy initiatives or changes may be required.

Sincerely,

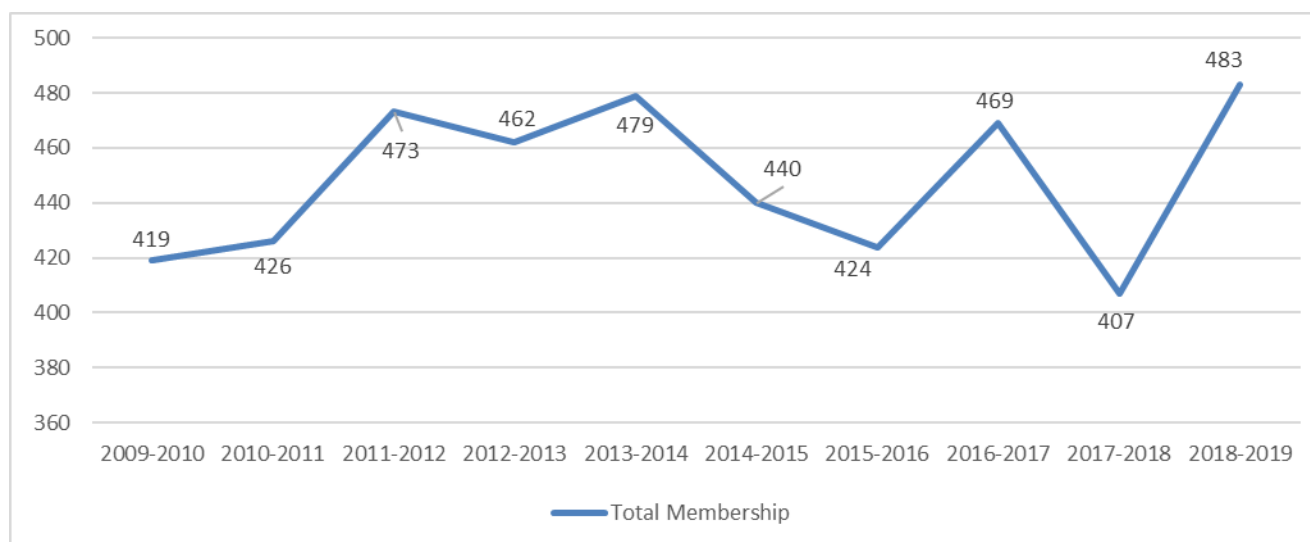
Erla Anderson
CORS Membership Services

OVERALL

As shown in Table 1 and Graph 1, total membership in the Canadian Operational Research Society at the end of the 2018–2019 membership year (March 31) was 76 more than the 2017–2018 membership year representing an increase of 18.7%. Membership retention and efforts to encourage former members to rejoin should remain a priority for the society.

Table 1: CORS Membership 2009–2010 to 2018–2019 as of March 31

Membership Year	Total Membership	Change in Membership	Growth Rate
2009–2010	419	–25	–5.6%
2010–2011	426	7	1.7%
2011–2012	473	47	11%
2012–2013	462	–11	–2.3%
2013–2014	479	17	3.7%
2014–2015	440	–39	–8.1%
2015–2016	424	–16	–3.6%
2016–2017	469	45	10.6%
2017–2018	407	–62	–13.2%
2018–2019	483	76	18.7%



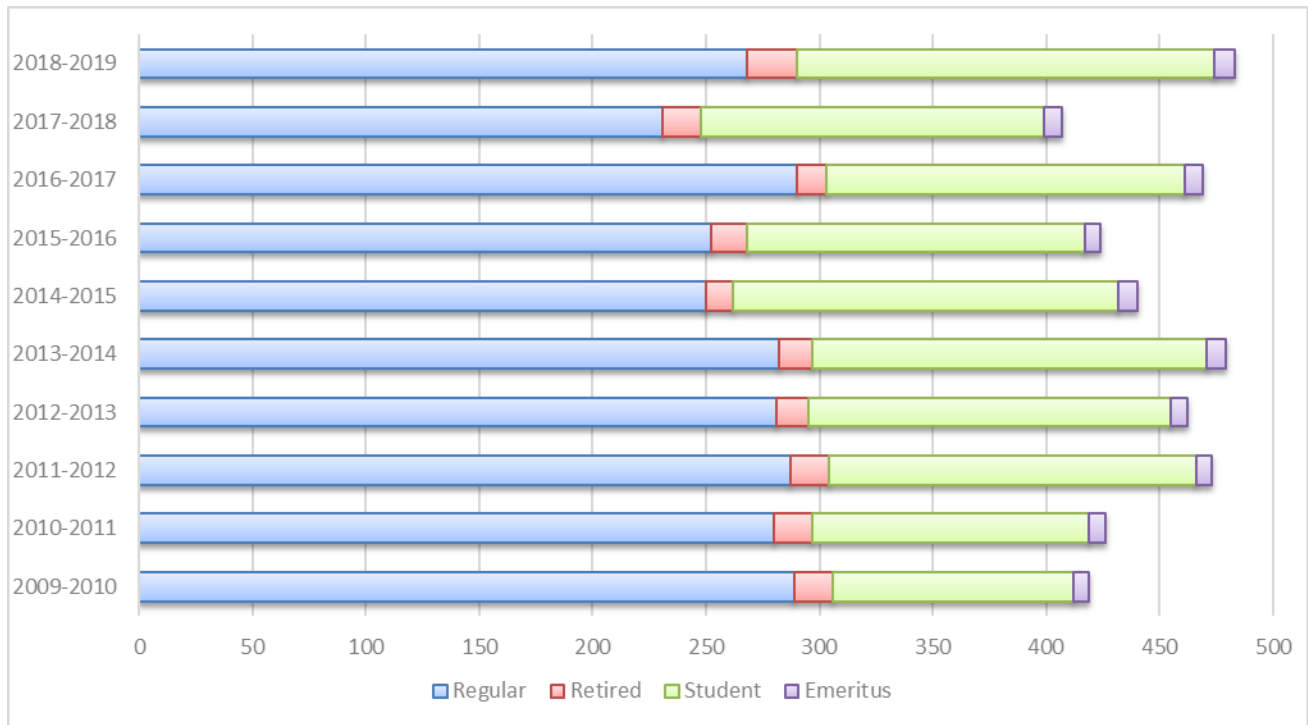
Graph 1: CORS Membership 2009–2010 to 2018–2019 as of March 31

MEMBERSHIP BY MEMBER TYPE

The distribution of CORS membership by member type is presented by absolute number in Table 2, by percentage of total membership in Table 3 and graphically in Graph 2. In the 2018–2019 membership year, 268 or 55% of the membership were Regular Members, 22 or 5% were Retired Members, 184 or 38% were Student Members, and 9 or 2% were Emeritus Members. Efforts should continue to recruit student members to the Society by 1) CORS members in academia promoting the benefits of membership to their students, 2) coordinators promoting the CORS Diploma at their institutions, 3) practical application articles in the CORS Bulletin, and 4) professional development activities/opportunities by local chapters.

Table 2: CORS Membership by Member Type 2009–2010 to 2018–2019

<i>Member Type</i>	<i>2009–2010</i>	<i>2010–2011</i>	<i>2011–2012</i>	<i>2012–2013</i>	<i>2013–2014</i>	<i>2014–2015</i>	<i>2015–2016</i>	<i>2016–2017</i>	<i>2017–2018</i>	<i>2018–2019</i>
Regular	289	280	287	281	282	250	252	290	231	268
Retired	17	17	17	14	15	12	16	13	17	22
Student	106	122	162	160	174	170	149	158	151	184
Emeritus	7	7	7	7	8	8	7	8	8	9
Total	419	426	473	462	479	440	424	469	407	483



Graph 2: CORS Membership by Member Type 2009–2010 to 2018–2019

MEMBERSHIP BY SECTION AND CHAPTER

The distribution of the Society’s membership by section and chapter is presented in Table 4. The term “chapter” is used for student groupings. The Toronto Section is the largest in the Society with 63 members or 13% of the total membership. The SW Ontario Section is the second largest at 49 or 10%, followed by the Montreal Section at 45 or 9% and the Atlantic Section at 43 or 9%. The distribution of the Society’s membership by section and member type as of March 31 is presented in Table 5 and Graph 3. Twelve sections and chapters experienced a gain in members over the 2017–2018 membership year, with the Toronto Student Chapter gaining the most members at 14. There were minimal losses in members in several sections and chapters. Montreal Student Chapter has the largest number of Student Members at 39 or 21% of the student membership, followed closely by the Toronto Student Chapter at 38 or 21%. Retired Members and Emeritus Members are distributed throughout the country. One Emeritus Membership was awarded in the 2018–2019 membership year.

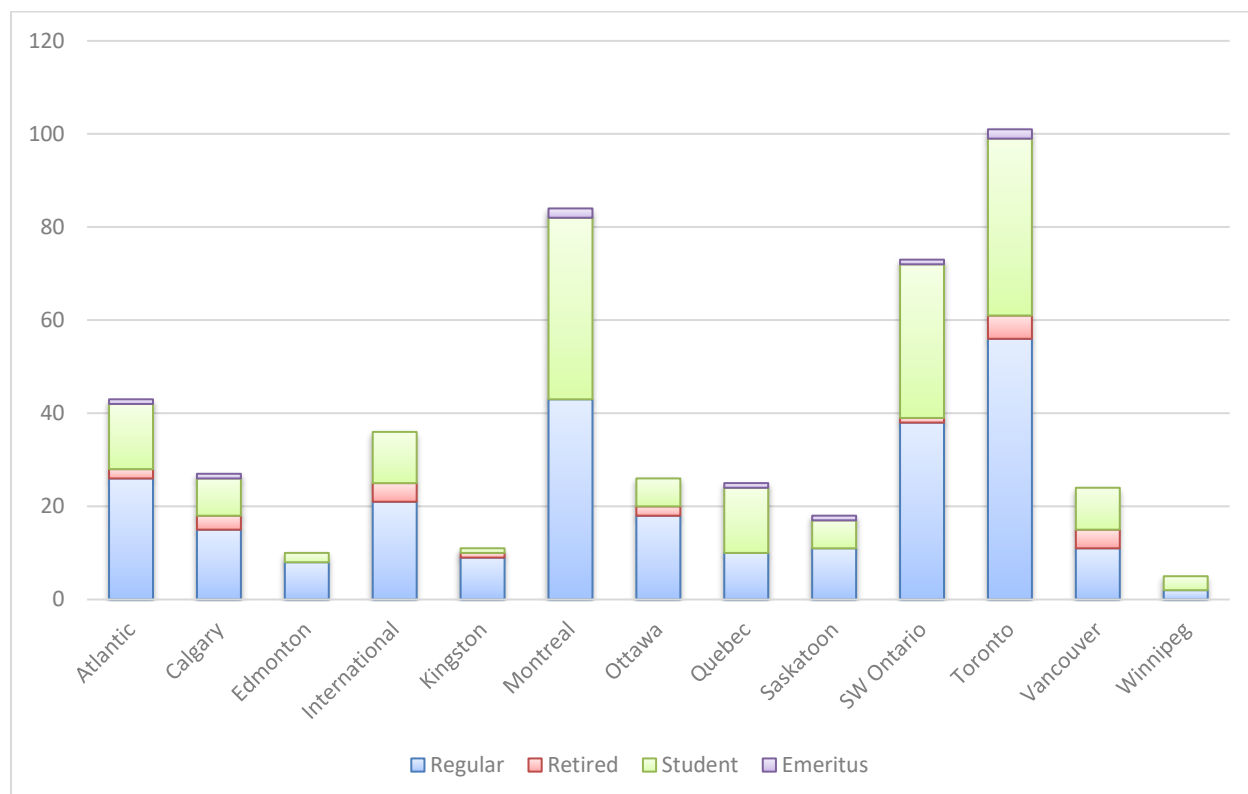
Table 4: CORS Membership by Section (Chapter) 2009–2010 to 2018–2019

<i>Section (Chapter)</i>	<i>2009–2010</i>	<i>2010–2011</i>	<i>2011–2012</i>	<i>2012–2013</i>	<i>2013–2014</i>	<i>2014–2015</i>	<i>2015–2016</i>	<i>2016–2017</i>	<i>2017–2018</i>	<i>2018–2019</i>
Atlantic	28	25	30	27	25	29	26	33	34	43
Calgary	24	19	21	23	23	24	26	34	23	27
Edmonton	18	14	23	18	19	11	14	16	11	10
International	25	26	23	26	27	20	20	37	26	36
Kingston	12	15	11	9	10	13	11	13	12	11
Montreal	51	63	70	62	70	76	80	41	38	45
Montreal Student	–	–	–	–	–	–	–	26	40	39
Ottawa	41	38	32	30	29	36	23	16	14	26
Quebec	25	24	29	25	29	31	19	17	14	12
Quebec Student	–	–	–	–	–	–	13	11	15	13
Saskatoon	9	9	10	12	13	12	9	10	12	18
SW Ontario	37	35	50	55	55	53	58	63	40	49
Waterloo Student	14	12	15	8	9	11	7	14	23	24
Toronto	63	66	70	64	58	53	51	62	55	63
Toronto Student	34	41	41	35	26	29	25	25	24	38
Vancouver	34	33	41	57	77	34	28	37	18	24
Winnipeg	3	5	6	8	5	4	8	10	4	5
Total	419	426	473	462	479	440	424	469	407	483

Table 5: CORS Membership by Section and Member Type March 31, 2019

<i>Section</i>	<i>Regular</i>	<i>Retired</i>	<i>Student</i>	<i>Emeritus</i>	<i>Total</i>
Atlantic	26	2	14	1	43
Calgary	15	3	8	1	27
Edmonton	8	–	2	–	10
International	21	4	11	–	36
Kingston	9	1	1	–	11
Montreal*	43	–	39	2	84
Ottawa	18	2	6	–	26
Quebec**	10	–	14	1	25
Saskatoon	11	–	6	1	18
SW Ontario***	38	1	33	1	73
Toronto****	56	5	38	2	101
Vancouver	11	4	9	–	24
Winnipeg	2	–	3	–	5
Total	268	22	184	9	483

*Includes Montreal Student Chapter. **Includes Quebec Student Chapter.
 Includes Waterloo Student Chapter. *Includes Toronto Student Chapter.

**Graph 3: CORS Membership by Section and Member Type March 31, 2019**

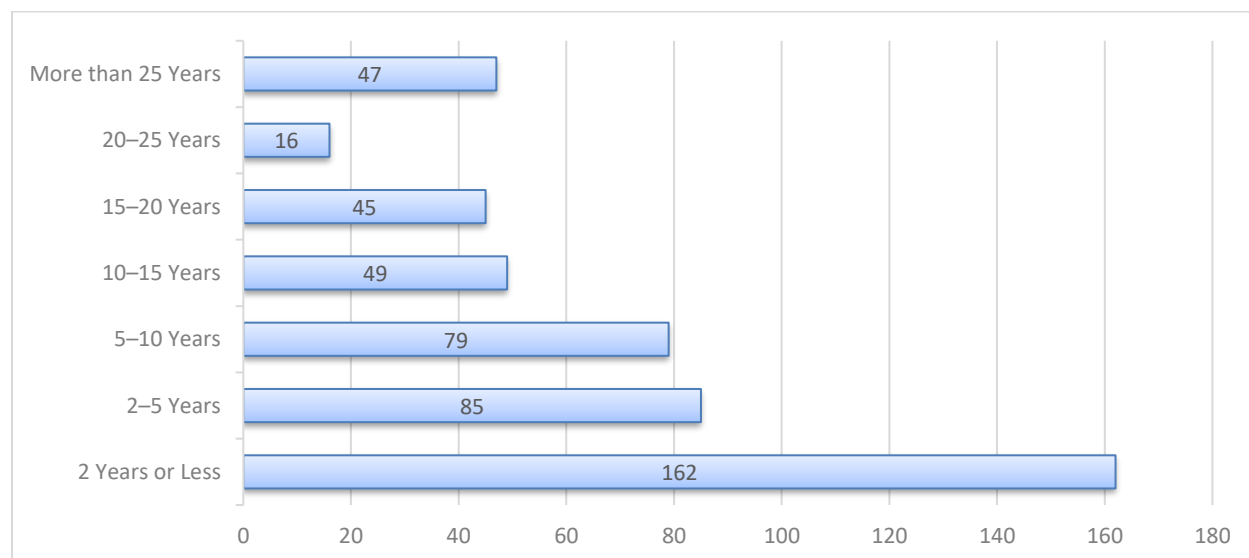
DURATION OF MEMBERSHIP

Table 6 and Chart 1 provide a snapshot of the CORS membership on the basis of how long an individual has retained membership in the Society. In the 2018–2019 membership year, 162 (34%) had been in the Society for two years or less. In the 2017–2018 membership year, this category constituted 34% of the membership. The percentage of members in the 2–5 year category increased from 15% in the 2017–2018 membership year to 18% in the 2018–2019 membership year.

Table 6: CORS Membership by Duration of Membership in the Society as of March 31, 2019

<i>Duration of Membership</i>	<i>Regular</i>	<i>Retired</i>	<i>Student</i>	<i>Emeritus</i>	<i>Total</i>
2 Years or Less	44	2	116	–	162
2–5 Years	31	1	53	–	85
5–10 Years	67	–	12	–	79
10–15 Years	42	1	2	4	49
15–20 Years	40	3	1	1	45
20–25 Years	14	2	–	–	16
More than 25 Years	30	13	–	4	47
Total	268	22	184	9	483

Chart 1: CORS Membership by Duration of Membership in the Society as of March 31, 2019



NEW MEMBERSHIPS

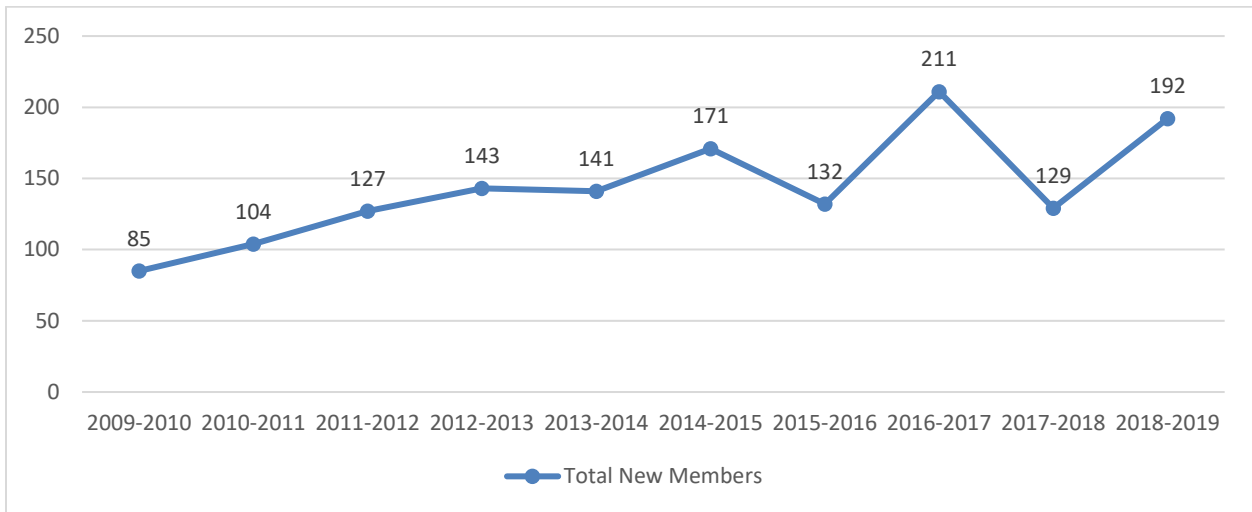
As shown in Table 7, the number of people who joined the society in the 2018–2019 membership year was 192, which is 63 more than in the 2017–2018 membership year. Included in the number of new memberships are 56 memberships that were reinstated, i.e., individuals who rejoined the Society after a lapse in their membership. The actual number of “new” members, i.e., individuals with no previous association with CORS, is therefore 136. In the tables and graphs below, reinstated memberships are included with the new memberships. As shown in Table 8, the number of new Regular Members who joined was 76 (40 more than in the 2017–2018 membership year). The number of new Student Members was 113 (21 more than in the 2017–2018 membership year). There were three new Retired Members. The CORS Diploma program and the Student Paper Competition, both requiring membership, have proven over the years to be effective in the recruitment of Student members. Over the past three membership years, the number of CORS Diplomas issued was 16 in 2018–2019, 9 in 2017–2018, and 13 in 2016–2017. A distribution of the new memberships by section (chapter) over the past several membership years is presented in Table 9 and graphically for the 2018–2019 membership year in Graph 6. The Toronto Section (including students) had the most new memberships with 39 or 20% of the new memberships. The Montreal and SW Ontario Sections (including students) were second largest, with 30 or 16% of the new memberships, each.

Table 7: New CORS Memberships 2009–2010 to 2018–2019

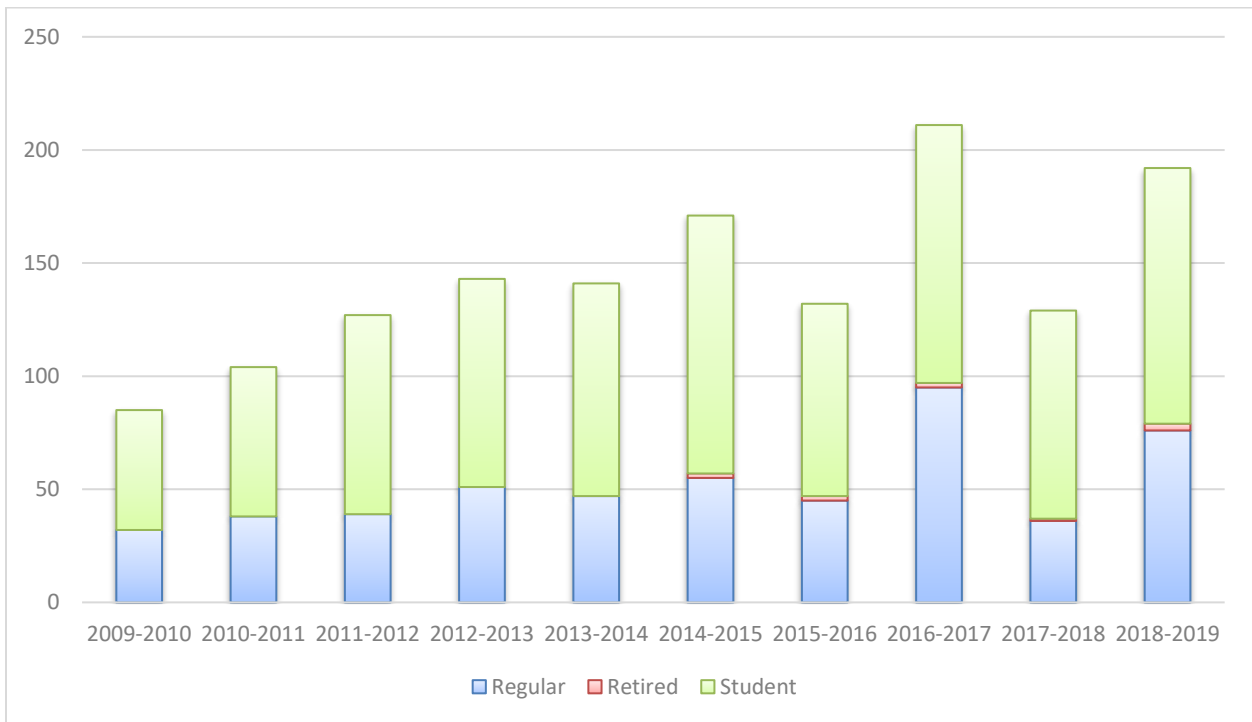
<i>Membership Year</i>	<i>Total New Members</i>
2009–2010	85
2010–2011	104
2011–2012	127
2012–2013	143
2013–2014	141
2014–2015	171
2015–2016	132
2016–2017	211
2017–2018	129
2018–2019	192

Table 8: New CORS Memberships by Member Type 2009–2010 to 2018–2019

<i>Member Type</i>	<i>2009–2010</i>	<i>2010–2011</i>	<i>2011–2012</i>	<i>2012–2013</i>	<i>2013–2014</i>	<i>2014–2015</i>	<i>2015–2016</i>	<i>2016–2017</i>	<i>2017–2018</i>	<i>2018–2019</i>
Regular	32	38	39	51	47	55	45	95	36	76
Retired	–	–	–	–	–	2	2	2	1	3
Student	53	66	88	92	94	114	85	114	92	113
Total	85	104	127	143	141	171	132	211	129	192



Graph 4: New CORS Memberships 2009–2010 to 2018–2019



Graph 5: New CORS Memberships by Member Type 2009–2010 to 2018–2019

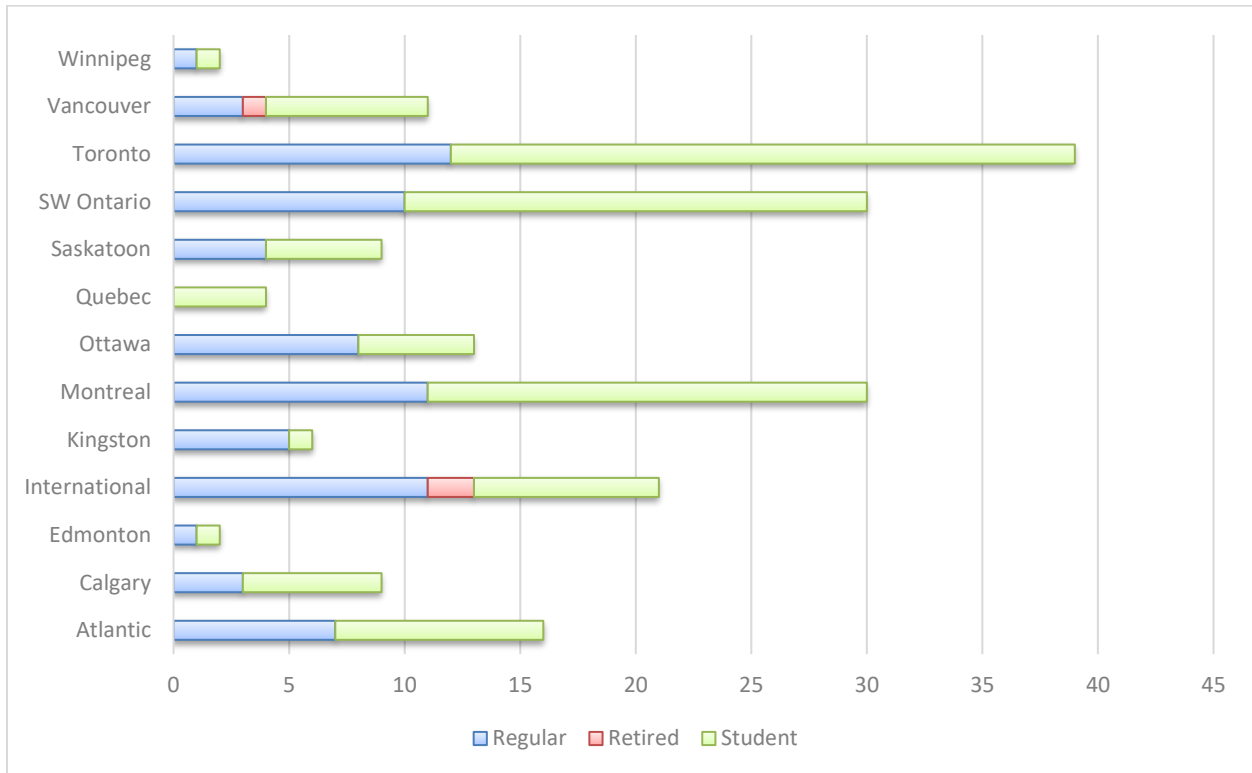
Table 9: New CORS Memberships by Section (Chapter) 2009–2010 to 2018–2019

<i>Section (Chapter)</i>	<i>2009–2010</i>	<i>2010–2011</i>	<i>2011–2012</i>	<i>2012–2013</i>	<i>2013–2014</i>	<i>2014–2015</i>	<i>2015–2016</i>	<i>2016–2017</i>	<i>2017–2018</i>	<i>2018–2019</i>
Atlantic	2	5	9	7	2	11	2	13	11	16
Calgary	5	3	4	7	5	8	11	22	6	9
Edmonton	6	2	11	6	7	2	6	8	4	2
International	3	4	3	5	12	8	10	26	12	21
Kingston	1	5	–	1	–	8	2	4	3	6
Montreal	13	24	14	16	20	30	32	10	5	11
Montreal Student	–	–	–	–	–	–	–	13	22	19
Ottawa	4	6	4	12	6	18	2	3	4	13
Quebec	4	4	8	5	7	12	1	1	2	–
Quebec Student	–	–	–	–	–	–	8	6	7	4
Saskatoon	–	1	2	1	1	2	1	4	4	9
SW Ontario	4	5	19	23	10	17	18	25	8	16
Waterloo Student	7	6	5	5	4	7	3	10	13	14
Toronto	8	8	12	7	4	11	5	16	7	13
Toronto Student	18	22	18	21	12	22	14	20	17	26
Vancouver	10	6	16	20	47	14	12	23	3	11
Winnipeg	–	3	2	5	2	–	3	5	1	2
Total	85	104	127	143	141	171	132	211	129	192

Table 10: New CORS Memberships in 2018–2019 by Section and Member Type

<i>Section</i>	<i>Regular</i>	<i>Retired</i>	<i>Student</i>	<i>Total</i>
Atlantic	7	–	9	16
Calgary	3	–	6	9
Edmonton	1	–	1	2
International	11	2	8	21
Kingston	5	–	1	6
Montreal*	11	–	19	30
Ottawa	8	–	5	13
Quebec**	–	–	4	4
Saskatoon	4	–	5	9
SW Ontario***	10	–	20	30
Toronto****	12	–	27	39
Vancouver	3	1	7	11
Winnipeg	1	–	1	2
Total	76	3	113	192

*Includes Montreal Student Chapter. **Includes Quebec Student Chapter.
 Includes Waterloo Student Chapter. *Includes Toronto Student Chapter.



Graph 6: New CORS Memberships in 2018–2019 by Section and Member Type

DISCONTINUED MEMBERS

In the 2018–2019 membership year, members were considered discontinued if they did not pay their dues by October 1, 2018, meaning that payment was 6 months overdue. Also, members are discontinued at their request, or if there is no way to contact them by post or email due to invalid contact information. As shown in Table 12, of the 71 memberships discontinued in the 2018–2019 membership year, 29 or 41% were Regular Members, and 42 or 59% were Student Members. The distribution of discontinued memberships by section is provided in Table 13. Discontinued memberships by section and member type for the 2018–2019 membership year is presented in Table 14 and in Graph 8. The greatest number of discontinued memberships occurred in the Montreal and Toronto Sections (including students), at 16 members or 23%, each.

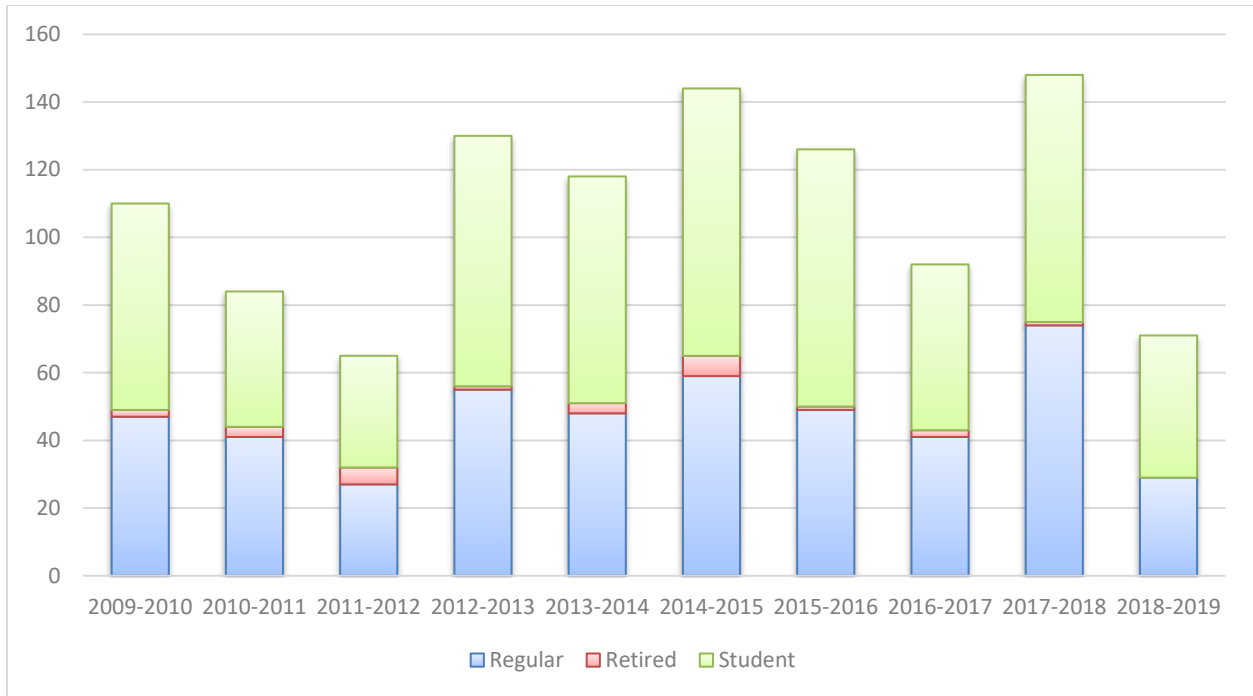
The duration of the memberships that were discontinued in the 2018–2019 membership year by member type is provided in Table 15 and Chart 2. Table 15 shows that 24 or 34% of the memberships that were discontinued had been held for two years or less. In the 2017–2018 membership year, this figure was 38%, and in the 2016–2017 membership year, this figure was 20%. Also, 54 (76%) of the memberships in the 2018–2019 membership year had been held for five years or less.

Table 11: Discontinued CORS Memberships 2009–2010 to 2018–2019

<i>Discontinued Reason</i>	<i>2009–2010</i>	<i>2010–2011</i>	<i>2011–2012</i>	<i>2012–2013</i>	<i>2013–2014</i>	<i>2014–2015</i>	<i>2015–2016</i>	<i>2016–2017</i>	<i>2017–2018</i>	<i>2018–2019</i>
Mail Returned	7	9	21	4	–	–	–	–	–	–
Withdrew	30	27		32	28	20	25	10	14	3
In arrears	73	48	44	94	90	124	101	82	134	68
Total	110	84	65	130	118	144	126	92	148	71

Table 12: Discontinued CORS Memberships by Member Type 2009–2010 to 2018–2019

<i>Member Type</i>	<i>2009–2010</i>	<i>2010–2011</i>	<i>2011–2012</i>	<i>2012–2013</i>	<i>2013–2014</i>	<i>2014–2015</i>	<i>2015–2016</i>	<i>2016–2017</i>	<i>2017–2018</i>	<i>2018–2019</i>
Regular	47	41	27	55	48	59	49	41	74	29
Retired	2	3	5	1	3	6	1	2	1	–
Student	61	40	33	74	67	79	76	49	73	42
Total	110	84	65	130	118	144	126	92	148	71



Graph 7: Discontinued CORS Memberships by Member Type 2009–2010 to 2018–2019

Chart 2: Duration of CORS Memberships Discontinued in 2018–2019 Membership Year

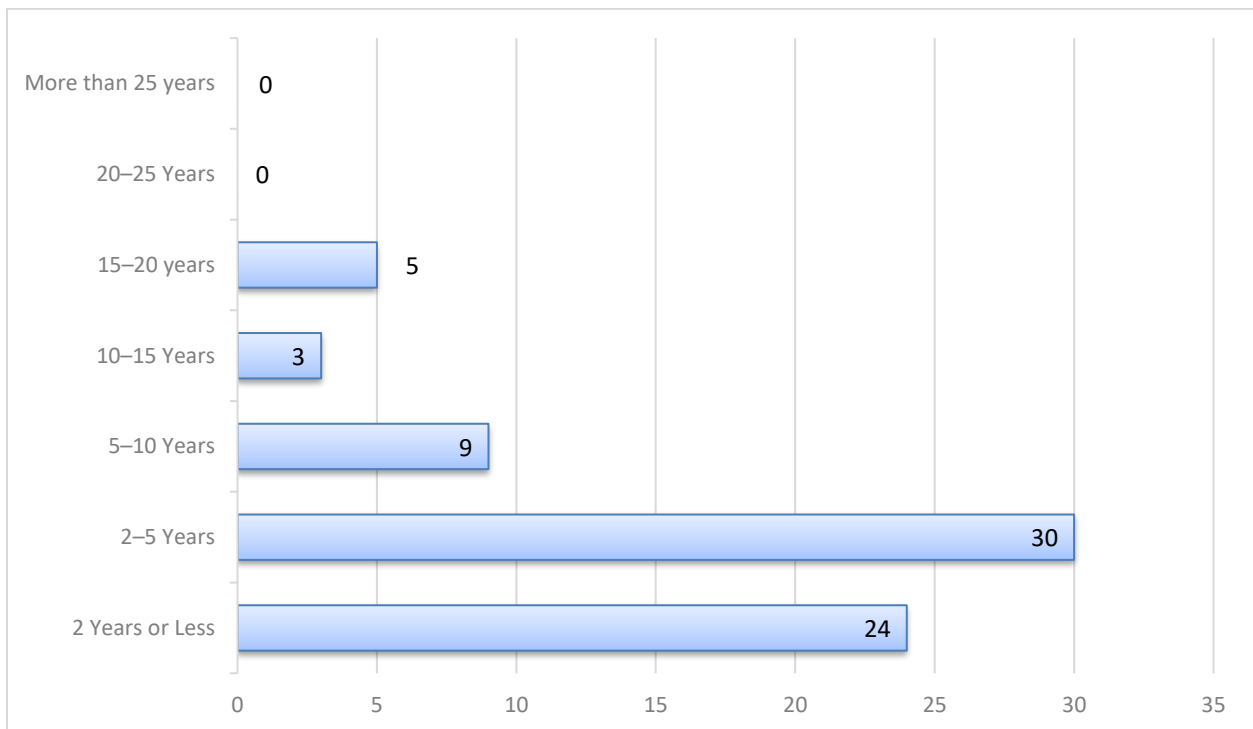


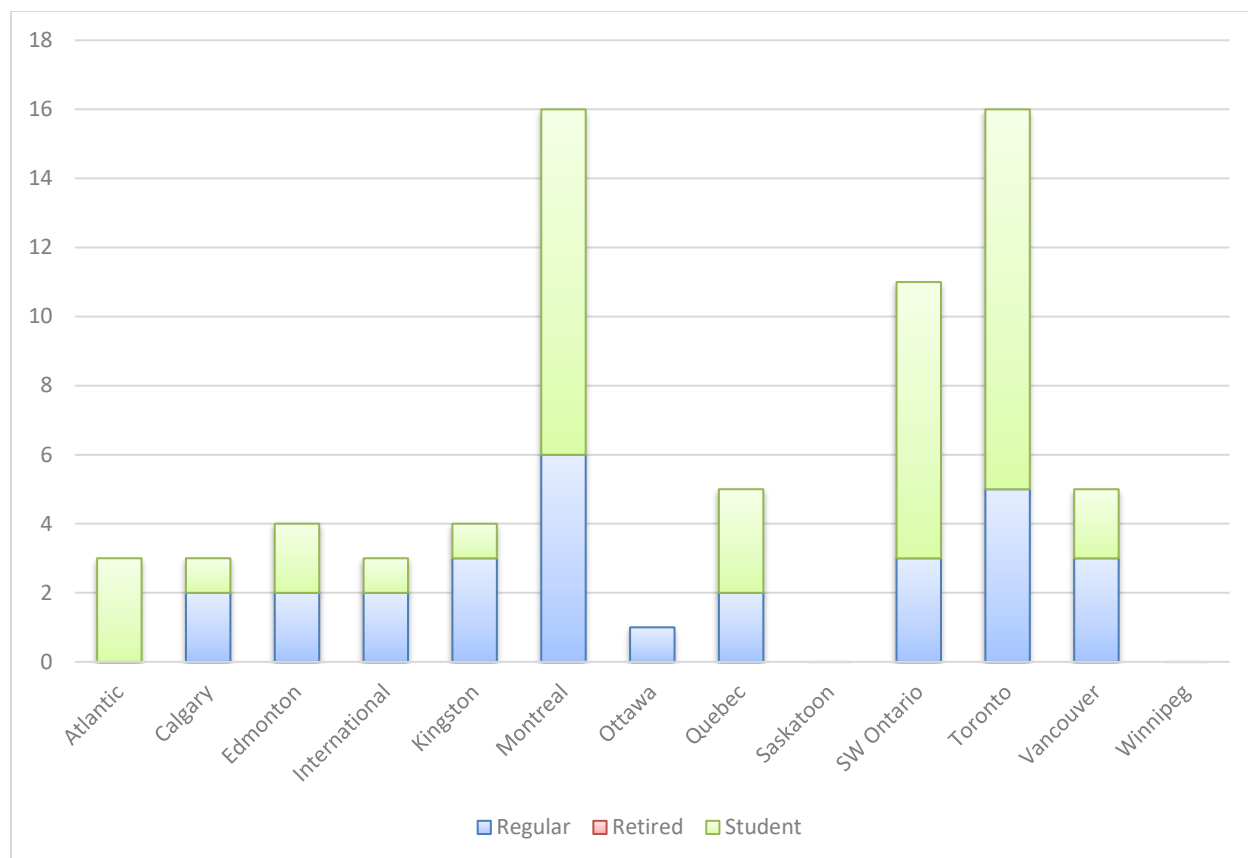
Table 13: Discontinued CORS Memberships by Section (Chapter) 2009–2010 to 2018–2019

<i>Section (Chapter)</i>	<i>2009–10</i>	<i>2010–11</i>	<i>2011–12</i>	<i>2012–13</i>	<i>2013–14</i>	<i>2014–15</i>	<i>2015–16</i>	<i>2016–17</i>	<i>2017–18</i>	<i>2018–19</i>
Atlantic	4	6	5	6	8	2	4	3	5	3
Calgary	5	6	2	5	8	2	7	7	14	3
Edmonton	8	6	1	10	7	9	3	3	10	4
International	10	5	6	5	11	12	9	5	18	3
Kingston	–	3	4	2	1	3	5	–	1	4
Montreal	18	11	5	21	10	17	21	9	4	6
Montreal Student	–	–	–	–	–	–	–	15	6	10
Ottawa	10	6	8	10	9	9	15	9	5	1
Quebec	10	4	2	9	6	5	7	4	2	2
Quebec Student	–	–	–	–	–	–	–	4	3	3
Saskatoon	1	1	–	1	–	1	2	2	3	–
SW Ontario	11	12	4	15	15	13	16	9	23	4
Waterloo Student	–	–	–	–	–	–	–	1	5	7
Toronto	26	18	21	33	27	23	20	5	10	5
Toronto Student	–	–	–	–	–	–	–	8	13	11
Vancouver	7	6	6	11	12	47	16	5	20	5
Winnipeg	–	–	1	1	4	–	1	1	6	–
Total	110	84	65	130	118	144	126	92	148	71

Table 14: Discontinued CORS Memberships in 2018–2019 by Section and Member Type

<i>Section</i>	<i>Regular</i>	<i>Retired</i>	<i>Student</i>	<i>Total</i>
Atlantic	–	–	3	3
Calgary	2	–	1	3
Edmonton	2	–	2	4
International	2	–	1	3
Kingston	3	–	1	4
Montreal*	6	–	10	16
Ottawa	1	–	–	1
Quebec**	2	–	3	5
Saskatoon	–	–	–	–
SW Ontario***	3	–	8	11
Toronto****	5	–	11	16
Vancouver	3	–	2	5
Winnipeg	–	–	–	–
Total	29	–	42	71

*Includes Montreal Student chapter. **Includes Quebec Student chapter.
 Includes Waterloo Student chapter. *Includes Toronto Student chapter.



Graph 8: Discontinued CORS Memberships in 2018–2019 by Section and Member Type

Table 15: Duration of CORS Memberships Discontinued in 2018–2019 Membership Year

<i>Category</i>	<i>Regular</i>	<i>Retired</i>	<i>Student</i>	<i>Total</i>
2 Years or Less	2	–	22	24
2–5 Years	11	–	19	30
5–10 Years	8	–	1	9
10–15 Years	3	–	–	3
15–20 years	5	–	–	5
20–25 Years	–	–	–	–
More than 25 years	–	–	–	–
Total	29	–	42	71

PAYMENT STATUS OF MEMBERSHIP

A snapshot of the membership at the end of the 2018–2019 membership year in terms of the number of membership renewals processed before April 1, 2019 is provided in Table 16. The number of members who paid for the 2019–2020 membership year, as of April 1, 2019, was 180 or 37%. At the same time in 2018 and in 2017, 44% and 33% had renewed, respectively. The invoicing process was conducted by email. Refer to Graph 9 to identify those sections where efforts should be made to encourage renewals in an attempt to improve membership retention.

Membership payments using a credit card are made either online using a credit card or a PayPal account or manually through Membership Services. Membership payments are categorized with online and manual credit card payments in mind, in Table 17 and Chart 3.

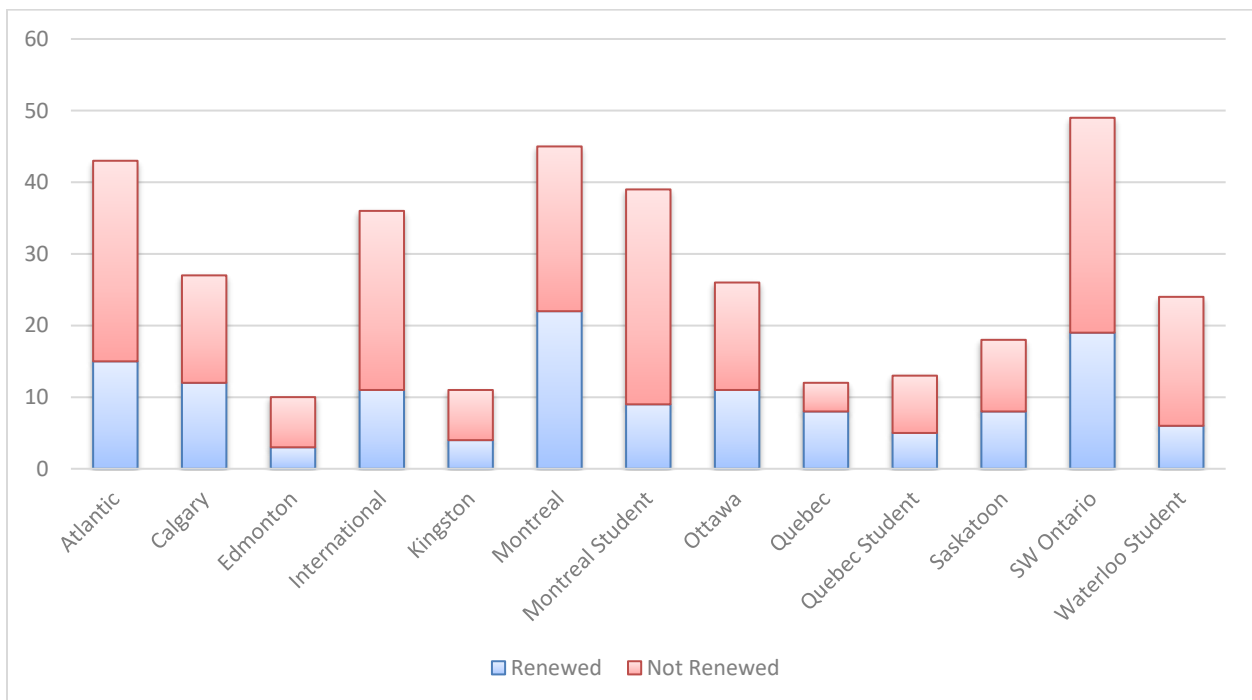
Between April 1, 2018 and March 31, 2019, a total of 272 payments were conducted on behalf of CORS by Membership Services in the processing of membership renewals and new memberships. The payments do not include the nine (9) Emeritus Members, whose membership is free. Of these transactions, 170 were in payment for the 2019–2020 membership year or beyond, and 102 were in payment for the previous 2018–2019 membership year. In addition, 113 payments were conducted before April 1, 2018: 112 were in payment for the 2018–2019 membership year, and one (1) was in payment for the 2019–2020 membership year, for a grand total of 385 payments.

Table 18 and Chart 3 show how members preferred to pay their fees: 10 (2%) by cheque, 5 (1%) by a manual transaction with a credit card, and 369 (96%) online with a credit card. The remaining transaction was one (1) bank transfer.

The number of transactions using Canada Post as a means of contact, which is not shown graphically here, was 13 (3%), a slight decrease from last year's number of 19 (5%). Most members prefer to make contact electronically. This year, 374 credit card payments were made: 369 were submitted online; 3 were submitted by mail, and 2 were submitted by phone. Beginning with the 2014 annual CORS conference, it was not possible to pay for membership on site at the CORS conference.

Table 16: Payment Status of CORS Membership by Section (Chapter) March 31, 2019

<i>Section (Chapter)</i>	<i>Dues Paid</i>	<i>Dues unpaid</i>	<i>Total Members</i>
Atlantic	15	28	43
Calgary	12	15	27
Edmonton	3	7	10
International	11	25	36
Kingston	4	7	11
Montreal	22	23	45
Montreal Student	9	30	39
Ottawa	11	15	26
Quebec	8	4	12
Quebec Student	5	8	13
Saskatoon	8	10	18
SW Ontario	19	30	49
Waterloo Student	6	18	24
Toronto	21	42	63
Toronto Student	13	25	38
Vancouver	12	12	24
Winnipeg	1	4	5
Total	180	303	483



Graph 9: Payment Status of CORS Membership by Section (Chapter) as of March 31, 2019

METHOD OF PAYMENT

Table 17: Method of Payment of Transactions Conducted in the 2018–2019 Membership Year

<i>Method of Payment</i>	<i>Number</i>	<i>%</i>
Online by credit card	369	96%
Manually by credit card	5	1%
Cheque	10	2%
Bank transfer	1	1%
Total	385	100%

Chart 3: Method of Payment of Transactions Conducted in the 2018–2019 Membership Year

