

Committee on Senate Affairs

Recommendation on Senate Reapportionment

Recommendation: The Committee on Senate Affairs recommends that section II-1-a of the Senate Constitution be amended to reapportion the representation of the several schools of the University, as follows.

II-1-a. The Faculty Senate is composed of the Deans of the several Schools and Colleges, elected members, and ex officio members. Elected members are representatives of the Faculties of the Schools and Colleges in accordance with the following distribution.

College of Arts and Science	13
Blair School of Music	2
Divinity School	2
School of Engineering	5
School of Law	2
School of Medicine	15
School of Nursing	2
Owen Graduate School of Management	2
Peabody College	5
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Total	48

The net change from the current apportionment is that Arts and Science loses two representatives; Medicine gains two representatives; all other schools remain unchanged.

Because elections for the 2005-6 academic year are already in progress, the Committee recommends that the changes in representation described above take effect beginning with the 2006-7 academic year.

Discussion: The Senate Constitution provides that:

II-1-d. The Senate shall at least once every five years review the numbers of elected representatives from the several Faculties, taking into account the relative sizes of the Faculties and of the student bodies of the several schools. Each school shall have at least two Faculty Senators. The number of elected representatives of any one school or college shall be no more than one-third of the total number of elected senators. [2000] Changes may also be proposed to the Senate by any Faculty. Proposed changes in the composition of the Senate shall be made known to the members of the Faculty Assembly at least one month before Senate action, and shall become effective when adopted by the majority of the Senate voting membership. [1984]

Last year the Committee on Senate Affairs produced a proposal for the reapportionment of the Senate, and the Committee was asked to further consider the matter this year and resolve the issue.

Last year's proposal involved an increase of the number of elected Senators from 48 to 60. Increasing the size of the Senate would have both positive and negative aspects. On the positive side, there would be more faculty involvement with the Senate, and there would be more people available to do the Senate's work, which has been growing, especially with the recent introduction of task forces to take on special projects. On the negative side, it might be hard to find enough faculty willing to serve on the Senate, committees might become so large as to be unwieldy, and

individual Senators might feel their contributions are less important and be less conscientious about their Senate duties.

This year's Committee on Senate Affairs weighed these issues, and also the level of support from the Executive Committee for increasing the size of the Senate, and decided to recommend no increase in the size of the Senate at this time, but rather a reapportionment with the current number of seats, 48.

Last year's Committee recommended that reapportionment be based on a score for each school obtained by computing the percentage of (full time) faculty in each school, the percentage of students in each school, and averaging the two. This gives equal weight to the relative sizes of the Faculties and the relative sizes of the student bodies, which seems to be in line with the text of the Constitution. This year's Committee agreed with this general philosophy. Current figures (Fall 2004) were obtained on full time faculty from the Registry and on students from the University Registrar's web site.

The score for each school was then converted into a 'standard quota', a proportion of the 48 seats. Any school which received less than or equal to 2 seats in this way (Blair, Divinity, Law, Owen) was automatically assigned the minimum of 2 seats. This left 40 seats for the remaining schools. The scores for these schools were adjusted so that they totalled 100%, and converted into a proportion of the 40 seats, the second 'standard quota' for each school.

There are several methods available for reconciling the fact that the standard quotas are not integers. All have their disadvantages; there is no perfect method. Probably the simplest such method is the Method of Largest Remainders, also known as Hamilton's Method or Vinton's Method. First each standard quota is rounded down, and the school is assigned that many seats. Then the fractional parts of the standard quotas are examined. If k seats remain to be assigned, the schools with the k largest fractional parts are each assigned one seat. This method was used to assign the 40 seats. The computations are shown below.

	A&S	Blr	Div	Eng	Law	Med	Nurs	Owen	Pbdy	Total
Students	4395	188	323	1732	641	1034	576	504	1781	11174
Student %	39.33	1.68	2.89	15.50	5.74	9.25	5.15	4.51	15.94	100.00
Full time faculty	460	52	20	113	44	1481	146	45	127	2488
Faculty %	18.49	2.09	0.80	4.54	1.77	59.53	5.87	1.81	5.10	100.00
Score	28.91	1.89	1.85	10.02	3.75	34.39	5.51	3.16	10.52	100.00
Standard quota /48	13.88	0.91	0.89	4.81	1.80	16.51	2.65	1.52	5.05	48.00
Minimum assigned		2	2		2			2		8
Remaining schools:										
Score	28.91			10.02		34.39	5.51		10.52	89.35
Adjusted score	32.35			11.21		38.49	6.17		11.78	100.00
Standard quota /40	12.94			4.49		15.39	2.47		4.71	40.00
Round down	12			4		15	2		4	37
3 largest fractions	1			1					1	3
Overall seats	13			5		15	2		5	40
All schools:										
Proposed	13	2	2	5	2	15	2	2	5	48
Current	15	2	2	5	2	13	2	2	5	48

The proposed reapportionment has the advantage that the numbers of seats change for only two schools. The one disadvantage of the proposed reapportionment is that in apportioning the 3 seats according to fractional parts of standard quotas, the dividing line between a seat for Engineering (fractional part 0.49) and a seat for Nursing (fractional part 0.47) is very fine. Unfortunately, any reapportionment procedure can result in close results like this, and a decision has to be made one way or the other; the only solution is to follow the method as prescribed. The Committee did have alternative figures available on faculty numbers, from the University's Fall 2004 Affirmative Action report. Compared to the Registry figures, these gave a slightly higher figure for Engineering (116) and a slightly lower figure for Nursing (140). Therefore, using these alternative figures would not have changed the result, and would in fact have made the gap between Engineering and Nursing larger, although still not very big.

The Senate Constitution contains the following provision:

II-1-e. ... Distribution of representation within a School or College shall be arranged in accordance with the will of the Faculty concerned. Terms of Senators shall be staggered so that insofar as possible each year one-third of them will complete their terms. ...

It is not entirely clear whether the second sentence applies to individual schools or to the Senate as a whole, but it is clearly desirable that as far as possible it applies at both levels. For this reason, in its initial deliberations the Committee suggested that the changes proposed be phased in over two years. However, subsequent examination of the way in which seats currently rotate reveals that no advantage would be obtained by phasing in the changes over two years. To obtain a completely even rotation for the School of Medicine (election of 5 seats every year) changes would have to be phased in over three years. That seems too long, and past practices do not support extreme measures to obtain even rotations: for the past five years Arts and Science has had an uneven rotation even though its number of seats is divisible by 3. Therefore, our recommendation is for the changes to be implemented all at once, so that the reapportionment is in full effect for the Senate in 2006-7.

Mark Ellingham,
Chair, Committee on Senate Affairs,
9th February 2005.