

# Report of Western University Career Trajectory Fund Committee

Sept 15, 2017, as modified Oct 18 2017

## **Background and Mandate:**

The Career Trajectory Fund Committee was established as required in the 2014-2018 Collective Agreement between The University of Western Ontario (the Employer) and The University of Western Ontario Faculty Association (the Association). Under the provisions of Clauses 23 and 35 to 35.4 of the *Compensation and Benefits* Article of the 2014-2018 Collective Agreement, a Career Trajectory Fund (CTF) was established. These Clauses are attached as an Annex to this report. The following description of the clauses reveals how the CTF Committee interpreted them.

The value of the CTF, as per Clause 35, was \$800 multiplied by the number of eligible Full-Time Probationary, Tenured, and Limited-Term Members as of June 30, 2017 who are also eligible Full-Time Probationary, Tenured, and Limited-Term Members on July 1, 2017. As there were **974** Probationary and Tenured Members and **219** Limited-Term (including Permanent and Externally Funded basic Scientists), the total fund to be distributed was **\$954,400**.

The Career Trajectory Fund Committee was charged with distributing the \$954,400 in the CTF in the manner described in clauses 35 through 35.4 of the Article on *Compensation and Benefits*. In particular, Clause 35.2 of the Collective Agreement required that Gender-based anomaly adjustments should be assigned from the CTF to Members whose salaries are determined to be anomalously low because of their gender, and that these adjustments were to be made from the CTF before any anomalies envisaged in clause 35.3 were addressed.

Clause 35.3 of the Collective Agreement requires that the CTF be distributed systematically to Probationary, Tenured, and Limited-Term Members whose salaries are determined, based upon experience and accomplishment, to be below a trajectory appropriate to their career stage, in a manner that gives special consideration to faculty whose salaries are determined to be below a trajectory appropriate to their career stage compared to similar faculty at comparator institutions, the composition of which were as described in the "Available Data" section below.

Finally, it is important to note that Clause 35.4 of the Collective Agreement put a 'cap' on the allowable salary adjustments indicating that the adjustment should not exceed \$10,000 less 50% of any excess of the Member's 2016-2017 salary over \$150,000.

To summarize, the mandate of the committee may be summarized in the following four goals.

## **Goals:**

1. To investigate whether there were any systematic gender-based anomalies in the salary structure of Western's faculty;
2. To construct a systematic, empirical model of Western's salary structure based on objective numerical data for each faculty;
3. To construct a systematic and empirically grounded model comparing Western's salary structure with those of comparable Ontario universities to identify systematic anomalies; and
4. To use the results of steps 1-3 to allocate the identified funds.

## **Development of Recommendations: Summary**

The CTF Committee reviewed relevant data to develop a systematic model of Western's salary structure as described below.

1. The Committee found no evidence of systematic gender-based anomalies in Western's pay structure. Not only was no significant direct impact of gender on salary detected, no indirect impact of gender on salary (via, for instance, a mechanism in which gender impacted APE scores which in turn impacted salary) was detected.
2. The salary trajectory at Western, contingent on experience, accomplishment, and career stage was established through a systematic empirical investigation using internal UWO salary data and multiple regression analysis.
3. The Committee also reviewed available salary information from comparable universities to determine the trajectory of salaries, depending on career stage, for faculty at our traditional comparator universities.
4. Because no gender effect was detected in step 1, the two elements of our work summarized in steps 2 and 3 allowed an evaluation of internal and external salary gaps for individual faculty Members. The resulting estimates of the total by which Members' salaries fall short of these two gaps were used, together with a case-by-case review, to recommend adjustments to the salaries of Probationary, Tenured, and Limited-Term Faculty.
5. The budget distributed was constructed so that the \$800 x 219, or \$175,200, amount attributable to the 219 LT members was distributed only amongst LT members, while the \$800 x 974, or \$779,200, amount attributable to the 974 probationary/tenured Members was distributed only amongst probationary/tenured Members.
6. Of the **974** probationary and tenured faculty in the bargaining unit, it was recommended that **520**, or **53.4%**, should receive an adjustment. Similarly, of the **219** Limited-Term faculty, **97**, or **44.3%**, have a recommended adjustment.
7. [post Sept 15 update]: The resignation of one probationary/tenured Member and the late contact non-renewal of one Limited-Term member, both of whom had been recommended adjustments, was handled with a redistribution of the respective adjustments among other members in the respective category. After accounting for this, it was recommended that of the **974** probationary and tenured faculty **519**, or **53.3%**, should receive an adjustment and of the **219** Limited-Term faculty, **96**, or **43.8%**, should receive an adjustment.

## **2017 Committee Membership:**

In accordance with Clause 35.1 of the Article on Compensation and Benefits, the CTFC consisted of five members, with two appointed by the Association, two appointed by the Employer, and a Chair chosen jointly by the Employer and the Association. The committee membership was:

### **Chair:**

Matt Davison (Professor of Applied Mathematics and of Statistical & Actuarial Sciences, Director, School of Mathematical & Statistical Sciences)

**Association Appointees:**

James Davies (Professor of Economics)  
Laura Stephenson (Associate Professor of Political Science)

**Employer Appointees:**

M. Karen Campbell (Professor of Epidemiology and Biostatistics and Vice Provost, Academic Planning, Policy, and Faculty)  
Andy Hrymak (Professor of Chemical Engineering and Dean of Engineering)

**Resource Person:**

Margaret Poirier, Senior Analyst, Office of the Vice Provost Academic Planning, Policy, and Faculty

**Deadlines:**

Although Clause 35.4 of the Article on Compensation and Benefits specifies that the CTF Committee should make its recommendation no later than June 1, 2017, the necessary data were only available beginning July 1 2017. As such, the committee received an extension of these deadlines, approved by the Provost and UWOFA, for a report to be delivered in September.

**CTF Meetings:**

The dates of the Career Trajectory meetings were:

Tues Feb 28 1-3PM	Wed Jun 21 9-11AM
Mon Apr 10 9-11AM	Wed Jun 12 9-11AM
Thurs Apr 20 1-3PM	Wed Aug 9 8:30AM-1PM
Wed May 3 1-3PM	Mon Aug 14 10AM-1PM
Mon May 15 9-11AM	Thurs Sept 7 11AM-1PM
Mon Jun 5 9-11AM	

**Process:**

**Available Data:**

The committee had access to detailed Western Data which organized all UWOFA Members by Faculty, Department (if applicable) and rank, containing fields for gender, years from first degree, years since highest degree (YHD), relative PAI score as measured by average PAI over the last three years relative to the average PAI in the individual’s department, years at Western, and years at rank.

The committee also had access, via OCUFA, to compilations of salary data for all full-time faculty at Western and at Western’s traditional “Bovey 4” comparators of Guelph, McMaster, Queen’s, and Waterloo. In addition, the committee had access to compilations of salary data for full-time faculty in Education and Law at all Ontario Universities. Because, among the Bovey 4, only Queen’s has faculties of Education and Law, for comparisons of Law and Education salaries we used data from all Ontario Universities except for the University of Toronto. Making external comparisons for LT faculty is somewhat difficult because the OCAV data sorts by rank rather than contract status. Thus, LT Assistant Professors are included with all other Assistant Professors in the OCAV data. There is, however, a

separate category for faculty with rank below Assistant Professor, which includes Western's LT Lecturers. Since only one of the Bovey 4 universities (Waterloo) had appreciable numbers of faculty at this rank, the committee compared Western salaries below the Assistant Professor level not only with the Bovey 4, but with Ontario universities in general, in order to estimate any external gaps at the Lecturer level. In the rest of the document this set of peer institutions is termed the “comparator institutions”. These comparisons are based on the data that the Ontario Council of University Faculty Associations (OCUFA) obtained from Ontario Council of Academic Vice Presidents (OCAV) for full-time salaries at Ontario universities in 2014-2015. This salary data was obtained by (OCAV) for all Ontario universities in 2014-2015. The data does not include colleagues in Medical or Dental faculties. For this dataset, OCAV used the same methods as in the long-running UCASS survey conducted up to 2011 by Statistics Canada.

### **Data Analysis:**

The committee had four goals. Of first priority was to thoroughly investigate whether there were gender-based anomalies in faculty salaries at Western and, if so, to address these. The second was to investigate anomalies within the current Western Salary structure. The third was to compare Western’ salary structure with external comparators. The fourth was to distribute the available funds to address salary anomalies identified in the first three goals, with the first (gender-based) taking priority.

In order to address the first two goals the committee began by generating multiple regression models. Each model was built faculty by Faculty. Within a Faculty, the model used the regressors described in the “Available Data” section above. Because of the differing structure of probationary/tenured Member salaries compared to the salaries of limited term Members, models were built separately for these two groups.

The variables Years since First Degree (YFD), Years since Highest Degree (YHD), Years at Western, and Years at Rank, while each showing some different information, were to some degree co-linear. For tenured and probationary tenure track members, YFD was not used as YHD performed better in the regression. Within each faculty with departments (or, in the case of Ivey, identifiable area groups), dummy variables were used to identify each unit. Interactions between YHD and relative PAI were also tracked, as were interactions between the binary gender variable and most other variables in the regression.

Only regressors judged significant at the 95% confidence level were retained. In particular, this meant that, for many faculties, departments between which there was no statistically significant difference in the salary structure were considered together.

**Importantly, this study showed no evidence of a systematic gender bias in pay structure at Western in any faculty.** Neither the gender variable itself nor any variable formed by interacting the gender variable with another variable was significant at the 95% confidence level. This implies that, not only was gender itself not a direct explanatory variable for salary, neither was it implicated in salary via any potential pathway investigated (for example, members of a given gender were not more likely to receive high PAI scores than members of the other gender).

With the requirements of Clause 35.2 of the Collective Agreement thus addressed, the committee was able to move on to estimate internal-to-Western salary anomalies for all faculty members using the

regression model described above which, as a consequence of the above discussion, did not include gender information. The  $R^2$  of these models depended on the faculty, but was in the range of 85-90%. With this model, for each member on faculty as of July 1 2017, a modelled salary figure was computed and that figure was then compared with their actual 2017-2018 salary.

Now it remained only to compare Western's salary structure with that at the comparator institutions described in the "Available Data" section above. In order to do this we compared mean and median salaries between Western and the comparators, within broad subject areas. In principle, the OCAV data allowed us to do this both by rank and five year YHD groups. In practice, since means and medians are suppressed in the OCAV data for cells in which there are a small number of individuals, the compilations by YHD group were comparatively complete only for some of the largest subject areas - Engineering, the Humanities, Science, and Social Science. However, complete comparisons were possible by rank for all subject areas.

The result of this study was to identify which faculties and subject areas suffered a gap relative to appropriate comparators in 2014-15. On average, the data revealed that Western salaries in 2014-15 were lower than comparator institution salaries in that same year, although there were a few faculties in which the reverse was true or there was no appreciable difference. The committee developed a model, for faculty at professorial ranks, by smoothing raw ratios of mean salaries at Western compared to the comparators. This model provided an estimated percentage by which faculty members in a given YHD cohort in a given subject area were underpaid relative to a typical colleague at a comparator institution. Given the mandate of the committee and the available resources, the committee decided to address only the estimated subject area gaps that exceeded the mean gap for all faculty.

Any external gaps ascertained as described above were combined with the adjustment suggested by the internal Western regression model to provide a suggested Career Trajectory adjustment for each faculty member. The process arrived at by the CTF committee was to combine the suggested internal adjustment with half the percentage raise suggested by the comparison with the comparator institutions, keeping only positive salary adjustments. The sum total of these salary adjustments (accounting for any "caps" required by Clause 35.4 as described above) needed to be pro-rated to match the total budget available for raises.

The last step of the committee's work was to review anonymized individual data on the regression variables in combination with the adjustments suggested by the model for each and every faculty member to ensure internal fairness in the context of each unit. To protect personal privacy, committee members excluded themselves from viewing and discussion of their home units.

The process for considering probationary/tenured and limited term faculty was similar. When considering Limited Term salaries, the same academic groupings suggested by the Probationary and Tenured groups were used. The chief difference in the regression models was that the variable "years since first degree", rather than "years since highest degree", was used for Limited-Term members in recognition of the fact that not all LT members have the same terminal degree.

## **Annex: Relevant Clauses of the 2014-2018 Collective Agreement**

### Career Trajectory Fund

23. A Career Trajectory Fund shall be established in 2017-18 in the amount of \$800 per Probationary, Tenured and Limited-Term Member. This Fund shall be distributed as described in Clauses 35 to 35.4 of this Article.

### Career Trajectory Fund for Probationary, Tenured and Limited-Term Members

35. A Career Trajectory Fund (CTF) shall be established in 2017-18. The value of this Fund shall be \$800 multiplied by the number of eligible Full-Time Probationary, Tenured and Limited Term Members as of June 30, 2017, who are also eligible Probationary, Tenured or Limited-Term Members on July 1, 2017. Compensation and Benefits
- 35.1 The CTF shall be administered by a Career Trajectory Fund Committee composed of five members, as follows:
- a) two members (or alternates) chosen by the Association;
  - b) two members (or alternates) chosen by the Employer;
  - c) the chair of the Committee, who shall be chosen jointly by the Employer and the Association.
- 35.2 Gender-based anomaly adjustments shall be assigned from the CTF to Full-Time Members whose salaries are determined to be anomalously low because of their gender. These adjustments shall be made from the CTF before any Career Trajectory Adjustments are considered under Clause 35.3 of this Article.
- 35.3 Funds remaining after application of Clause 35.2 of this Article shall be distributed systematically to Full-Time Members based on experience and accomplishment, but in a manner that gives special consideration to faculty whose salaries are determined to be below a trajectory appropriate to their career stage compared to similar faculty at comparator universities.
- 35.4 The distribution of the CTF using the provisions of Clauses 35.2 and 35.3 of this Article shall be recommended to the Provost by the CTF Committee no later than June 1, 2017. Recommendations for adjustments of a Member's salary using the provisions of Clause 35.3 of this Article shall not exceed \$10,000 minus 50% of the excess (if any) of the Member's 2016-17 salary over \$150,000.