An analysis of merit: Case studies in the faculty of engineering

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Context, sources, analysis

Context: Pre-CASC 2025; MAUT-SSCOW Merit, Compensation, and Governance Survey Fall 2024, Report March 2025; Report of the MAUT ad hoc Committee to Examine the Status of Salaries and Benefits at McGill, 2025.

Principal calculation: "merit budgets" by summing the product of the number of merit allocations in merit categories 1-5, n_i, by the salary-policy prescribed merit increase, c_i, for each year in question:

$$\text{'merit budget'} = \sum_{i=1..5} n_i c_i, \quad \text{'avg. merit increase'} = \frac{\sum_{i=1..5} n_i c_i}{\sum_{i=1..5} n_i}$$

Data: Institutional merit category counts for the Departments of Chemical (2011-25, not '22), Civil (2011-'21), Electrical and Computer (2011-'21), and Mechanical (2011-'21) Engineering, and salary policy data (2011-2025). There was no merit in 2013.

Salary policy guidance

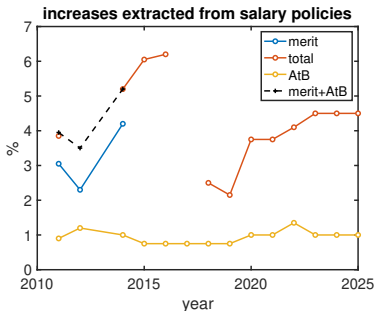How have merit and other components of the salary policy varied over time?

Figure 1: Anomaly budget noted 0.35% in 2011, 2012, 2015, k$600 for 9 years (2014-2022), k$750 (2023-2026).

Unit merit budgets

What are the merit budgets (raw data) for the units under study, and on an academic-staff-member basis?
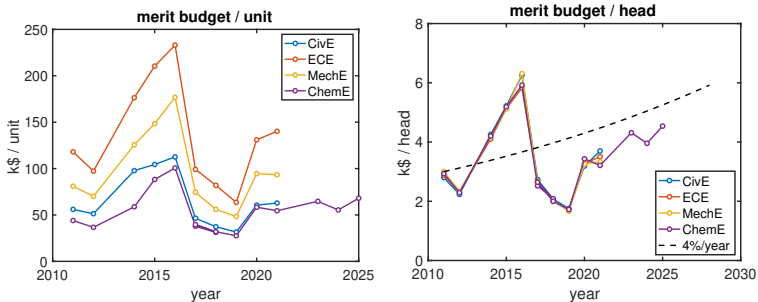

Figure 2: Merit budgets on an academic-staff-member basis are fairly uniform across the units, 2021 being a notable exception. Black line is exponential growth at 4%/year since 2011. 2011-2025 exponential growth rate is approx. 2.9%/year.

Merit increases
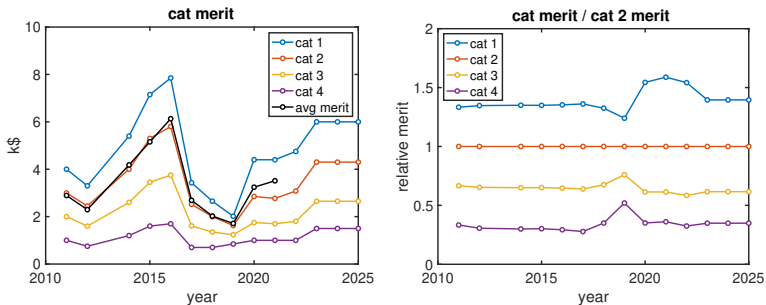
How have merit increases varied over time?

Figure 3: Merit increases by merit category. Average (black) is for MechE, ECE and CivE (10 years). Merit category 2 sets the average prior to 2020, departures are toward cat 1 post 2020.

A merit model, termed "skewed-normal R-M", based on three parameters (ratio/spread R, center/mean M, and fraction of academic staff in cat 1 and 2), is explored below. A normal distribution of performance would acknowledge 50/50 distribution of merit about a mean that is, in practice, below inflation, even when adding a nominal 1% AtB.

Average merit category

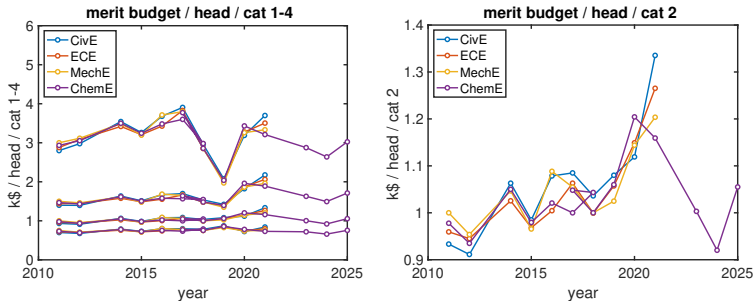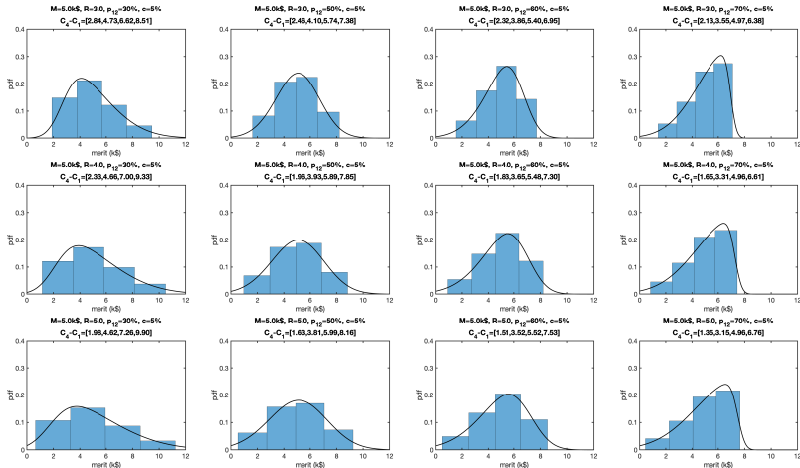What is the average merit category in the units under study?

Figure 4: Merit category 2 generally sets the average, but it varies: cats 1-4, increasing downward (left); cat 2 detail (right).

Merit informed by skewed-normal performance
(R-non-central-M)

'progressive' →↓ 'elitist':

Notes: M (mean/budget/inflation), $R = c_1/c_4$ (spread), p_{12} (% in C1 and C2), c (contingency). M is to be independently set, e.g., by inflation/negotiation/budgetary considerations (e.g., $M = 5$k\$), not equal to the C2 merit level (as has been customary). "progressive" $\implies$ more above mean, exceeding inflation, "elitist" $\implies$ larger separation of top and bottom merit amounts.

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Some actual distributions of merit category