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Background

The Botany EDI (BEDI) committee had a round table with the Botany TA/Scholarships/Awards (TASA) committee in October 2021. A modified Inclusion Self-Assessment Tool questionnaire was used as a starting point for the conversation.

We first discussed the substantial responsibilities of the committee, and then delved into a discussion of how the committee operates procedurally. The conversation revealed that there are many complex considerations, some of which are not fully within the control or purview of TASA. We thank the TASA committee members for their willingness to engage with us, openness to suggestions, and frank dialog about challenges. Below we describe some concrete recommendations for actionable changes, as well as areas that we have identified for which we need further information and discussions prior to assessing possible recommendations. Through summer 2022, BEDI will focus its attention on graduate student recruitment, admissions, and mentoring, and we will continue to invite the TASA committee into these conversations as relevant. We plan to reassess strategies and progress with TASA in Fall 2022, and in the meantime we are available for further discussion and consultation should TASA wish for BEDI's support.

TASA duties

The TASA members explained that their current duties are split into two main categories:
1. Screening applications for admission to the Botany graduate program
2. Ranking applications for fellowships (at the undergraduate, graduate, and postdoctoral levels)

TASA procedures related to admissions

TASA's role in admissions is primarily advisory. Currently, applications are received by the graduate coordinator, who contacts each prospective supervisor listed by an applicant to determine whether the application is of potential interest to them. If at least one PI is interested, then at least 2 of the 4 members of TASA will evaluate the application file. TASA evaluators independently determine if the application meets Botany minimum standards for admission (i.e., thresholds for GPA and English language proficiency tests) and describe any areas of strength or concern in a one-paragraph evaluation. The evaluations are passed on to prospective supervisors, who make the final decision whether to accept an applicant into the graduate program when the application meets minimum standards. If the application does not meet minimum standards, the prospective supervisor may appeal.

TASA procedures related to fellowships

TASA ranks applications for numerous fellowships and awards, including those at the undergraduate (e.g., NSERC[1] USRA[2], FoS[3] SURE[4], Botany Krajina Prize), graduate level (e.g., NSERC CGS[5], Botany Boving), and postdoctoral levels (e.g., Killam, Banting). Some of these are awarded by the department, while others are adjudicated at additional levels (e.g., FoS, G+PS[6] &/or NSERC), with TASA serving as the filter through which some applications pass out of Botany to higher levels.

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[1] Natural Sciences and Engineering Research Council

[2] Undergraduate Summer Research Award

[3] Faculty of Science

[4] Summer Undergraduate Research Experience

[5] Canada Graduate Scholarships

[6] Graduate and Postdoctoral Studies

TASA rankings are informed by criteria that are often pre-determined by each funding opportunity. For example, NSERC awards require three main categories for consideration (academic excellence, research ability or potential, and communication, interpersonal, and leadership abilities; these are weighted differently depending on the award). TASA also chooses to apply NSERC categories for adjudicating some non-NSERC awards. Departmental awards often have filtering criteria related to research topic.

TASA members make their rankings using information in the application files, some of which is distilled into a spreadsheet compiled by the graduate coordinator. The spreadsheet contains information on applicant grade-point averages, conferences, presentations, publications, fellowships, and awards. TASA members do not rank or discuss applicants with whom they have a conflict of interest. When the applicant pool is large, the committee meets in person to compare evaluations, discuss discrepancies in ranks, and arrive at a final consensus. When Botany forwards its rankings to higher level adjudication committees, its rankings may be considered but applicants can be re-ranked by those adjudication committees.

Areas for action / recommendations for change

The round table discussions identified several challenges facing the TASA committee. Recommended actions that follow from our discussions are shown in blue text, while areas for which further information gathering is needed are shown in green text.

1. *Focusing on holistic evaluations rather than quantitative metrics*

   Current evaluation procedures (for fellowship rankings in particular) emphasize quantitative metrics of performance and experience: GPA, numbers of publications, numbers of conferences attended, numbers and sizes of prior awards. Some on the TASA committee view this favourably because it is transparent, reproducible across evaluators, and brings disparate applications into a common currency. Finding alternative ways to score research proposals, in particular, is perceived as challenging due to the difficulty of comparing and evaluating applications across vastly different research subfields, some of which are outside of members' expertise. Some on the TASA committee are also concerned that

research proposals can reflect an unknown contribution from prospective supervisors, making proposals an unreliable indicator of an applicant's own abilities and potential. At the same time, the committee also recognizes how difficult it is to put disparate backgrounds into a single common currency, noting that GPA are hard to compare across universities, requiring scale conversions and leading some members to qualitatively up- and down-rate based on perceived rigor of the institution.

The BEDI committee notes that quantitative metrics can disadvantage many qualified applicants. For example, research experience will often be lower for individuals from lower-income backgrounds who cannot afford the lower monetary value of summer fellowships or to take entry-level volunteer opportunities. Some students cannot attend conferences because of accessibility barriers or caregiving responsibilities. Not all excellent students attend well-known institutions or institutions with robust undergraduate research opportunities. These (and many other) differences in access and opportunity do not reflect differences in research ability, research potential, or academic excellence.

We recommend further research into holistic evaluations methods that are both inclusive and rigorous. This should include learning about the following:

- How can updated NSERC guidance[7] pertaining to EDI be incorporated into application review rubrics?
- How do higher-level adjudication committees function? Can we harmonize TASA's approach to ensure that any department-level changes to ranking procedures do not disadvantage our applicants in the short-term? Do we need to advocate for higher-level systems change over the long-term?
- Most fundamentally, what is our departmental vision for graduate admissions and awards? Can we create a shared understanding of our mission, values, and priorities? How can our application and awards processes best support and reflect that? We recommend that this topic be taken up at a departmental retreat and the

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[7] https://www.nserc-crsng.gc.ca/NSERC-CRSNG/EDI-EDI/framework_cadre-de-reference_eng.asp

> results used to revise our application materials and scoring rubrics (see #3 below).

2. *Combatting the Matthew effect for increasing inequity in award distribution*

    Given that prior awards factor into the ranking system, it is inevitable that recipients of early awards become more likely to rank highly for future awards. This means that early success or failure can set applicants with similar abilities and potential onto increasingly divergent trajectories. We note that undergraduate award rankings rely proportionately more heavily on GPA, a questionable indicator of research potential. Therefore, paying special attention to the selection process for early-stage awards and increasing targeted opportunities for undergraduate research engagement (i.e., BUDR[8], IURMP[9]) might have relatively high leverage over diversity and equity at later stages. At the same time, recognizing that there are many more qualified applicants than there are fellowships, the committee might consider prioritizing first-time awardees or imposing caps on the number of awards that any one applicant can accrue (e.g., decreasing the maximum number of summer USRA awards prior to graduation below UBC's cap of 3).

3. *Managing workload for holistic evaluations*

    The workload for TASA is among the highest of all departmental standing committees. However, as the TASA committee becomes familiar with the pool of applications each year, it becomes somewhat more efficient to score the same applicant for successive opportunities. For this reason, splitting the work of the committee into two (one for admissions, one for fellowships) is not perceived as an effective approach for workload reduction.

    While holistic admissions procedures should rely more heavily on narrative materials (e.g., essays and personal statements), it is clear that

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[8] https://blogs.ubc.ca/budr/

[9] https://indigenous.ubc.ca/students/current-students/experiential-learning/research-mentorship/

evaluating such materials must be kept feasible for the committee. We recommend the following:

- Creating scoring rubrics for narrative materials, informed by our departmental vision (see above). The narrative materials should be read and scored prior to looking at other components of the application file, so as not to bias the scores.
- Converting long-form essays to a series of more targeted short-answer questions, informed by the departmental vision and scoring rubric.
- Re-evaluating TASA's role in general admissions. Are the paragraph evaluations achieving their intended function and finding a receptive audience? Could TASA's time be used more effectively? Currently there is no mechanism for additional potential supervisors to see applicants who didn't list them. Could TASA's time be better spent helping to identify a pool of high-caliber and deserving applicants for circulation to supervisors who are recruiting students, if those applicants have been passed over by the prospective supervisors they listed?
- Consider recruiting a broader pool of committee members to help screen admissions and awards packages. Some schools even allow postdocs and grad students to participate in the process.

4. *Training for TASA members*

   Incoming TASA members receive no formal or informal training. We recommend that

   - TASA procedures be documented in detail in a manner that can be shared to onboard incoming members.
   - All committee members complete anti-bias training. NSERC's online module[10] is a possibility.
   - Incorporate a calibration step prior to application evaluations, in which a small subset of applications is reviewed by all committee members and discussed as a committee prior to completing individual assessments.

5. *Demographic information about applicant pools*

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[10] https://cihr-irsc.gc.ca/lms/e/bias/

There is currently no way to track composition of the applicant pool to make sure that composition of awardees is representative of the applicant pool or to assess whether procedural changes affect diversity. We understand that the university is working towards this; BEDI will stay abreast of progress and developments.

6. *Feedback from student success to application evaluation*

There is currently no mechanism to be able to assess how admission criteria fare in identifying successful students, or conversely, if there are ways to have anticipated which students struggle in the graduate program. Pinning this as a future area for investigation, pending other new departmental initiatives regarding student progress tracking.