

Graduate Student Committee report to the CASCA Board May 2015

1 Current Membership of the Graduate Student Committee

The current members of the graduate student committee and their university affiliations are:

Executive

Hannah	BROEKHOVEN	Chair	University of Victoria	broekhov@uvic.ca
Alexandre	DAVID-URAZ	Vice-Chair	Queen's University / RMC	adavid-uraz@astro.queensu.ca
Karen	LEE-WADDELL	EPO Officer	Queen's University / RMC	karen.lee-waddell@rmc.ca
Sébastien	LAVOIE	Equity Officer	University of Victoria	slavoie@uvic.ca

Members (and the institutions they represent)

Christian	CARLES	Université Laval	christian.carles.1@ulaval.ca
Laura S.	CHAJET	York University	lchajet@yorku.ca
Scott	JONES	Western University	sjone7@uwo.ca
Ben	KELLER	McMaster University	kellerbw@mcmaster.ca
Francois-René	LACHAPELLE	Université de Montréal	lachapelle@astro.umontreal.ca
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Zachary	SHAND	University of Calgary	zashand@ucalgary.ca
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Jennifer	WEST	University of Manitoba	Jennifer.West@umanitoba.ca
Boukari	YAMEOGO	University of Moncton	yameogo.boukari@gmail.com

Much of the executive will be graduating before the CASCA 2016 meeting. Therefore we are looking to the current generation of graduate students and reps for who will take over the lead on the GSC. This will be an important item on the Agenda at the AGM. Ideally, we would have some overlap between the outgoing and incoming exec so as to have a smooth transition.

Following the recent restructuring of the GSC, we have a larger exec (four people) along with the greater pool of reps from institutions across the country. Our hope is to have the core of the GSC to maintain its momentum having more regular meetings, while still maintaining input and contact from different institutions through their respective reps.

2 The 2015 Graduate Student Workshop and General Meeting

Following the tradition, the CASCA Graduate Student Workshop will be held prior to the start of the annual CASCA meeting on Sunday, May 24 2015. The workshop was organized by the graduate students of the LOC in close communication with the GSC in order to ensure that the suggestions and requests

from the larger graduate student community were represented. The graduate students at McMaster have done a really excellent job at organizing the annual Graduate Student Workshop.

After discussing possible directions for the desired theme, the Mac grad LOC was in contact with Eric Feigelson who enthusiastically offered to lead the entire workshop. The GSC is very pleased with the upcoming workshop and believe it will be very beneficial and well-received by the attending students. This year, we are putting together a follow-up survey, to get better representation on the feedback from grad students on the workshop.

At the end of the report, we have attached the text from the website on the Graduate Student Workshop for reference. As can be seen in the schedule, the Graduate Student Committee will hold their Annual General Meeting during the lunch of the workshop.

3 Graduate Student Statistics

As part of his role as Equity Officer of the GSC, Sébastien Lavoie has collected funding information for Astronomy and Astrophysics programs across Canada. He has put together an excellent and detailed report which can now be found the GSC webpage (on the CASCA website). This summary includes information such as expenses (tuition) and funding (RA, TA, NSERC top-ups, etc). Sébastien has also included information such as the living expenses in the location of each institution in order to better compare the funding from institution to institution. This will be an excellent resource for both graduate students (particularly those choosing where they want to do grad school and needing to assess financial commitments as part of their education) and Astronomy and Astrophysics departments (for example, looking to see how their program compares with other Canadian institutions and to compare to other examples of funding structures).

All of this information has been collected from the institutions from websites, graduate chairs, or grad students in the program. Sébastien has advertised his report via the CASCA exploder to explain what it is and where it can be found. He is currently looking into updating the report to include information on various fees that graduate students pay as well, as it is apparent that the breakdown of tuition and mandatory fees varies institution-to-institution. (For example, some institutions' fees are 50% the cost of tuition, where others' are 20%.) This will provide a much clearer summary.

A copy of the text from this webpage has also been included at the end of this report for your immediate reference.

4 Archive of past workshops

As part of the current GSC exec's goal to not have their knowledge graduate with them, we have added a summary of past workshops onto the GSC website. This is to both provide a record and to help future generations explore themes for future workshops, and appropriate timescales to repeat some favourite ones. Our EPO Officer, Karen Lee-Waddell, has put this summary together which can now be found off the GSC webpage.

Jennifer West, apart from being the backbone of the GSC website, has also attached links to past GSC reports on the main GSC webpage.

5 Graduate Student Awards

The GSC will continue to give awards in recognition of the best student talk and best student poster at the upcoming meeting in Hamilton.

Respectfully submitted,

Hannah Broekhoven-Fiene
Graduate Student Committee Chair (outgoing)
22 May 2015

Appendix: 2015 Graduate Student Workshop: Statistics in Astronomy

24 May 2015

The theme of this years graduate student workshop is statistics in astronomy. We are very pleased to announce that the workshop will be run by Dr. Eric Feigelson (Penn State Department of Astronomy & Astrophysics). Dr. Feigelson has been actively giving workshops on astrostatistics for the past 2 years, with presentations to several hundred students and researchers in 12 countries. Dr. Feigelson has also been instrumental in the development of the field of astrostatistics; he and Dr. Jogesh Babu (Penn State) have organized five Statistical Challenges in Modern Astronomy conferences, nine Summer Schools in Statistics for Astronomers, and have co-authored the book: Modern Statistical Methods for Astronomy With R Applications

The workshop will give a comprehensive introduction to using statistics in astronomy. There will be a mixture of informative lectures and tutorials, including examples and hands-on applications (see the tentative schedule below).

Tutorials will be conducted with the R statistical software environment. Everyone participating in the workshop must come with their laptop and R already downloaded and installed. The software can be downloaded here: <http://www.r-project.org/>

Before coming to the conference, students are strongly encouraged to play around with R. This will allow the tutorials to run much more smoothly and maximize everyone's learning experience. A short introduction can be found here: <http://astrostatistics.psu.edu/RLectures/day1.pdf> and for a more detailed introduction: <http://cran.r-project.org/doc/manuals/r-release/R-intro.pdf>. Both will be excellent resources for after the conference as well.

8:30	9:00	Registration	
9:00	10:00	Lecture: Intro to Astrostatistics	
10:00	10:30	coffee break	
10:30	11:30	Lecture: Fundamentals of Statistical Inference	
11:30	11:40	Mini break (get ready for tutorial, set up laptops)	
11:40	12:30	Tutorial: Introduction to R	ll
12:30	14:00	Lunch / GSC rep. meeting	
14:00	15:00	Tutorial: Density estimation and Data smoothing	
15:00	16:00	Lecture: Fitting Models to Data	
16:00	16:30	coffee break	
16:30	17:30	Tutorial: Multivariate Clustering and Classification	

Appendix: A survey of graduate Astronomy funding throughout Canadian Universities

As part of the GSCs mandate to monitor equity and status amongst Canadian Graduate Students, the Equity Officer has put together a report on graduate funding across Canada.

From one coast to the other, Canadian universities offer about 20 different graduate program in astronomy. Each of these institutions have their own tuition fees and funding rules. Most importantly, graduate astronomy programs are offered in cities with vastly different cost of living. Graduate students are, generally speaking, not member of a union when it comes to research (although they can be part of a union as teaching assistant). As such, they are not part of an organization that can help them know what is the situation like elsewhere for graduate students. Furthermore, relevant information tends to be lost quickly due to graduate students spending only a few years at the same place. This led to the present funding survey. Hopefully, it can bring present and future graduate students some relevant information.

The survey itself consists in funding information from 15 different institutions. Cost of living information was obtained from the website Numbeo crowd-sourcing database that include hundreds of entry for each city. References and details are included in the report.

The survey tries to be more comprehensive than previous ones by looking at major expenses for graduate students in each institutions. The categories of expenses included are:

- Domestic tuition
- Public transportation
- Housing
- Internet
- Food
- Leisure

A note on international tuition is included when available, but the situation varies between universities. Public transportation is included with the tuition fees at most universities but does amount to \$500-\$1000 a year when it isnt. For housing, a range is given for each city, the lowest value represents a person living outside of the city core with 2 roommates while the higher value represents someone living alone in the city core. Internet, food and leisure expenses are based on conservative numbers detailed in the survey. Three scenarios are then considered. Housing being the largest single expense, the scenarios are based on the minimum, maximum and average of the housing range. The average housing value obtained is generally in good agreement with what a person should expect to pay to live in the city core with 2 roommates or alone outside of the city core. A measure of the disposable income can then be obtained by combining various funding and expenses scenarios.

Although the first page of the report only summarizes the values for students with minimum funding in an average expenses scenario, more details are available for individual institutions. TA hours and salary included in minimum funding, how much a student can get for an additional TA position (and associated disposable income) and total NSERC funding (and associated disposable income) are given for most of the universities.

Getting a very complete picture of graduate funding is obviously very hard, especially when done on a voluntary basis like it is the case for this survey. The reader should keep in mind that there are limitations to the numbers obtained. For example, the distribution of funding compared to the minimum and the availability of scholarships (NSERC or others) are not included. Students also have to balance other things when deciding where to go, e.g.: research areas, excellence and reputation of the institution and the researchers, availability of supervisors, success of former students, etc.

It is of the opinion of the Graduate Student Committee that this survey should be kept updated and enhanced. It is also clear that the minimum funding situation of graduate astronomy students varies greatly throughout Canada. It should be kept in mind that, although the average funding may show a very different picture, a non-negligible fraction of graduate students have to live on minimum funding. Not having enough money to meet basic needs has been shown to be a huge source of stress. It also excludes individuals who may be capable of contributing in a meaningful way to research but who can't because they either can't afford it or are too stressed to do good work due to finances.

Thank you to all the graduate students, graduate chairs and other department officials that provided the information necessary for the survey. Special thanks to Lisa Glass and Hannah Broekhoven-Fiene for their help putting the survey together.

For comments, questions or modification requests, please contact:

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