

## 2017-2018 Statistics & Actuarial Science Endowment Award

One or more awards, each valued at the university's award minimum or more, will be granted annually in any term to full-time undergraduate students who meet the following criteria:

- are enrolled full-time in the Department of Statistics and Actuarial Science in the Faculty of Science;
- are in their third or fourth year of study;
- have a declared major in Statistics or Actuarial Science;
- are in good academic standing; and
- have demonstrated commitment to the department and/or their chosen discipline, for example (but not exclusively) by:
  - -serving as a volunteer at department events;
  - -representing the department at University/external events;
  - -serving as a volunteer for activities sponsored by professional societies of Statistics or Actuarial Science;
  - -serving on the executive board of the Statistics and Actuarial Science Student Association;
  - -undertaking activities to enhance the engagement of peers with the department and/or its related disciplines;
  - -undertaking activities to enhance the stature of the department and/or its related disciplines.

### **Dani Chu writes:**

I began reading Kirk Goldsberry basketball articles on Grantland in 2014. His use of new NBA data captured by advanced SportVU cameras struck me. In particular, an academic paper titled Counterpoints: Advanced Defensive Metrics for NBA Basketball grabbed my attention. In the Fall of 2015 I was fortunate enough to unwillingly enroll in a course taught by one of the other authors of that paper Dr. Luke Bornn. Meeting Luke launched me into a love of sports analytics and the pursuit of a greater understanding of statistics. Since then I have had the opportunity to publish a paper, work on interesting problems, and give back to my fellow students.

In the Spring of 2017 I took Dr. Tim Swartz's Bayesian Statistics class. Through my work in this class, and my time as a member of the SFU Sports Analytics Club, I was lucky enough to be offered an Undergraduate Student Research Award by the Natural Science and Engineering Research Council of Canada for the Summer of 2017 to work under Tim, with my friend Lucas Wu on a sports analytics paper. We researched improvements to the Kelly Criteria, a widely used, mathematically optimized betting guideline developed in 1956. Through our work over the Summer and into the Fall we were able to write a paper that has been accepted for publication into the Journal of Quantitative Analysis in Sports.

I have worked on other projects in Sports Analytics mostly in the role of president. I became president of the club in the Fall of 2016. In that time, we have organized the SFU Statistics sponsored event the Vancouver Sports Analytics Symposium and Hackathon (VanSASH), worked on projects with Canada Basketball, and the Canadian Sport Institute Pacific, with coaching staff of the Vancouver Whitecaps and Terry Fox Ravens Junior Boys Basketball and finally competed in hackathons and case competitions with members of the club.

Through our work in the Fraser Health Hackathon, my team was hired to work at the Fraser Health Authority in the Summer of 2017. We built analyses using data from the fentanyl overdose crisis in Fraser Health.

I have volunteered as a Statistics and Mathematics tutor for the past five years and recently became the Vice President of the Statistics and Actuarial Science Student Association at SFU. However, most of my volunteer work is done as a Basketball Coach where I spend almost every week night of the season coaching various teams.