



IUSSI - North American Section

The George C. Eickwort Student Research Award recognizes a graduate student for distinguished research and scholarly activity in the field of social insect biology. The award consists of a certificate, an honorarium, and a one-year subscription to *Insectes Sociaux*. This year the Awards Committee reviewed an exceptionally strong group of nominees, and those who were not successful this year are encouraged to re-apply next year if still eligible. As for this year's award, one nominee clearly stood out. The North American Section of the International Union for the Study of Social Insects is proud to announce that **Brock A. Harpur, PhD (2017), York University** is the recipient of the 2017 George C. Eickwort Student Research Award.

As one of his recommenders notes, Brock has amassed a record worthy of a junior faculty member, and one that places him among the best students of social insects in his generation. His graduate research, completed under the supervision of Amro Zayed at York University, brought population genomics methods to bear on fundamental questions about social insect evolution. He started by showing that, contrary to widespread belief, managed honeybee colonies have increased rather than decreased genetic diversity. Shortly afterward, he overturned the hypothesis that positive selection explained high rates of innate immune system evolution in bees and ants. Instead, he found clear evidence of a relaxation of negative selection. He then produced a landmark study that created the first map of natural selection in a social insect. Brock used this map to show that worker traits are the major loci of adaptive evolution in honeybees. He next completed an extensive comparative study of *Bombus* genomes to test the prediction that selection acts more strongly on workers because of the large proportion of colony phenotype that depends on worker traits. Surprisingly, he found that *Bombus* evolution is mainly evident in reproductive genes, suggesting major differences between the patterns of selection in honeybees and bumblebees. Finally, Brock has made significant advances in identifying genes that contribute to social traits, a central goal of sociogenomics. To do this, he developed new methods that combine genome-wide association mapping with measures of natural selection to achieve the resolution necessary to pinpoint single genes associated with specific social behaviors. In this way, he discovered mutations associated with social immunity and aggression in honeybees.

The first in his family to get a university degree, Brock has had a passion for insect biology all his life, and quickly turned that passion into productive research. He has a stellar publication record, and he has presented his work extensively, both through conference presentations and invited talks. More notably for a graduate student, he has organized or co-organized ten symposia or conferences. He has mentored multiple undergraduate researchers, and he participates extensively in K-12 and public outreach about beekeeping, pollination, and bee research. He is now continuing his work bridging genomes, social traits, and evolution at the University of Toronto under Benjamin Blencowe, funded by a prestigious NSERC Postdoctoral Fellowship. These research and scholarly achievements make Brock Harpur a highly deserving winner of this year's George C. Eickwort Student Research Award.

IUSSI-NAS Awards Committee

Terry McGlynn and Stephen Pratt (Co-Chairs)

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