Five undergraduate students from Queen's School of Computing Perk Lab will be going to Florida next winter to present the results of their research in Biomedical Computing. Mark Schumacher, Kyle Sunderland, Maggie Hess, Vinyas Harish, and Matt Lougheed have had their papers accepted for presentation at the SPIE Medical Imaging Conference to be held in Orlando, February 21-26, 2015.

The SPIE Medical Imaging Conference is one of the largest international conferences on medical imaging. The prestige of this conference is further demonstrated by the fact that each fully refereed 10-page accepted paper is published in the conference proceedings, and indexed on PubMed for the medical research community. “I am immensely proud of our undergraduates” said Dr. Gabor Fichtinger, Director of the Perk Lab.

Mark Schumacher
3rd year undergraduate
“Patient-specific surface mould applicators for high-dose-rate brachytherapy”
by M. Schumacher, A. Lasso, I. Cumming, A. Rankin, C. Falkson, I. J. Schreiner, C. Joshi, G. Fichtinger

Kyle Sunderland
3rd year undergraduate
“Reconstruction of surfaces from planar contours through contour interpolation”
by K. Sunderland, B. Woo, C. Pinter, and G. Fichtinger

Maggie Hess
2nd year undergraduate
“Quantification of intraventricular blood clot in MR-guided focused ultrasound surgery”
by M. Hess, T. Looi, A. Lasso, G. Fichtinger, J. Drake

Vinyas Harish
1st year undergraduate
“Intraoperative visualization and assessment of electromagnetic tracking error”
by V. Harish, T. Ungi, A. Lasso, A. Macdonald, S. Nanji, G. Fichtinger

Matt Lougheed
4th year undergraduate
“Evaluation metrics for bone segmentation in ultrasound”
by M. Lougheed, G. Fichtinger, T. Ungi
Ryan Kavanagh has been involved in Queen’s School of Computing since high school. He worked as a summer intern at the School for 2 months between grade 11 and 12 where he reverse-engineered and rewrote a legacy utility called “turnin” that allows students to hand in digital assignments to their professor. The software is available as part of Debian-based Linux installations and is used at Queen’s as well as other institutions around the world.

He continued his internship the following summer where he worked on a number of other projects. He wrote a web-based equipment manager for staff to track loaned equipment (e.g., projectors, laptops, etc.). He also updated a website for technical reports and prepared a Linux distribution for Computing undergraduates so they could replicate the experience of their lab machines on their personal computers.

Ryan began his undergraduate program in the School that fall, where he gravitated to computer science and math courses. He played a role in developing the new Computing and Mathematics specialization with the School.

Throughout his time at Queen’s, Ryan has had the opportunity to work at a variety of institutions, including several research labs in the School of Computing. He spent a summer researching software dependency graphs and release management in free software ecosystems at Queen’s with Ahmed Hassan, followed by a summer at McGill University studying mathematics. That fall, Ryan spent time working for Microsoft Research Cambridge in the UK. When he returned, he worked with Karen Rudie and Juergen Dingel investigating discrete event systems.

“That research assistantship helped me discover that I really enjoy communicating technical material,” says Ryan. “I wrote several expository papers for my supervisors, and I found real pleasure in taking a complex idea and breaking it down into easy to understand pieces.”

That summer, Ryan took an internship at MIT. The summer after that, he went to École Normale Supérieure de Lyon in France, where he studied “bisimulations” (a notion of program equivalence).

Ryan is currently studying math in Moscow, Russia on a “CMS-NSERC Math in Moscow” scholarship. We wish him the best of luck and safe travels!

I’ve always found faculty at Queen’s very helpful and welcoming, with most having a more or less open-door policy.

Ryan Kavanagh
4th year undergraduate

In Moscow, studying:
- Intro to Homological and Commutative Algebra
- Topology
- Algebraic Number Theory
- Russian

Has worked at:
- McGill
- Microsoft Research Cambridge (UK)
- ENS Lyon (France)
- MIT

Queen’s has a very strong program. The breadth of courses offered is much greater than at many other institutions, as is the depth and pace of individual courses.