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Dear Readers

Each year *Parabola* celebrates the winners of the annual UNSW School of Mathematics Competition and each year there are standout performances from many Sydney Schools including James Ruse Agricultural High School and Sydney Boys High. These schools feature again this year but so does Coonabarabran High School in central western NSW. We also specially mention the senior division prize winner Paul Cheung, from Sydney Technical High School, and the junior division prize winner, John Wormell, from Sydney Boys High School.

The UNSW School of Mathematics Competition has been running now for forty-five years. It doesn't run itself. It is finanically supported by the UNSW School of Mathematics and Statistics, but its principal support has always been the academic who has worked tirelessly to compile the problems (and solutions). Over the past several years that academic has been Michael Hirschhorn and his contribution has been truly invaluable.

I hope you enjoy the articles in this issue. The article by David Angell provides a nice introduction to complex numbers and shows how one of the properties that we are most familiar with in the case of real numbers (ordering one number greater or less than another) cannot be defined in a satisfactory way for complex numbers. The article by Gerry Sozio reviews several different formulae for approximating the value of a definite integral and shows how these formulae can be obtained in a systematic fashion. You might like to use the ideas that Gerry has presented to derive your own integration rule. Johns Steele's article on *Nuclear Power and the Hairy Doughnut* is not just an intriguing title: it is a fascinating presentation of an example in which pure mathematics ideas in topology and differential geometry may one day find applications that could transform our lives. Again we welcome Michael Deakin's contribution on the History of Mathematics. In this issue Micheal returns to the topic of Ptolemy's Theorem and explores different levels of proof using experimental validation and pseudo induction.

Finally I should mention the new problems. Our resident Problems Editor, Thanh Tran, has been inundated with other academic activities at this time so I have stepped in with a few problems to keep you going. Thanks to my colleagues who allowed me to step into their offices and steal ideas from whiteboards, overheads and scraps of paper. The final problem in this set is based on one of Ramanujan's beautiful formulas. As always, we like to hear from you.

B.I. Henry
Editor