

Wednesday, June 23
Reyerson 251, 7:00 pm

**REU 2004: SPECIAL GUEST LECTURE
“MATHEMATICS, MORALLY”**

EUGENIA CHENG

ABSTRACT. A source of tension between Philosophers of Mathematics and Mathematicians is the fact that each group feels ignored by the other; daily mathematical practice seems barely affected by the questions the Philosophers are considering. In this talk I will describe an issue that does have an impact on mathematical practice, and a philosophical stance on mathematics that is detectable in the work of practising mathematicians.

No doubt controversially, I will call this issue 'morality', but the term is not of my coining: there are mathematicians across the world who use the word 'morally' to great effect in private, and I propose that there should be a public theory of what they mean by this. The issue arises because proofs, despite being revered as the backbone of mathematical truth, often contribute very little to a mathematician's understanding. 'Moral' considerations, however, contribute a great deal. I will first describe what these 'moral' considerations might be, and why mathematicians have appropriated the word 'morality' for this notion. However, not all mathematicians are concerned with such notions, and I will give a characterisation of 'moralist' mathematics and 'moralist' mathematicians, and discuss the development of 'morality' in individuals and in mathematics as a whole. Finally, I will propose a theory for standardising or universalising a system of mathematical morality, and discuss how this might help in the development of good mathematics.