

Mathematics Department Colloquium

Organizer: Vaughan Jones

Thursday, 4:10–5:00pm, 60 Evans

March 22 **Christian Skau**, Norwegian University of Science and Technology, Trondheim

ABEL(1802-1829) AND HIS MATHEMATICAL DISCOVERIES

On this very day, March 22, the winner of the Abel Prize in mathematics for 2007 will be announced in Oslo, Norway. The prize money is 6 million Norwegian Crowns (about one million US dollars), and the previous recipients have been Jean Pierre Serre (2003), Sir Michael Atiyah and Isadore Singer (2004), Peter Lax (2005) and Lennart Carleson (2006).

In his acceptance speech in Oslo in May, 2004, Atiyah said: "I first read the biography of Niels Henrik Abel 50 years ago. Last month I read it again and was better able to appreciate how Abel was really the first modern mathematician. His whole approach, with its generality, its insight and its elegance set the tone for the next two centuries. His early death was a terrible loss—imagine if Mozart had died at a similar age. It has been said that, had Abel lived longer, he would have been the natural successor to the great Gauss: a statement with which I fully concur except for the qualification that Abel was a much nicer man, modest, friendly and likeable..... I am proud to have a prize that bears his name."

We will give a survey of Abel's major discoveries, and how these had a decisive influence on the development of mathematics in the 19th century and beyond. Kronecker and Weierstrass, speaking from their vantage point at the end of the 19th century, gave the following assessment on Abel's influence (according to Mittag-Leffler): "The whole enormous edifice of modern mathematics rests on the shoulder of this Scandinavian giant."