

# D. P. ROY MEMORIAL LECTURE 2019

Prof. Durga Prasad Roy (1941-2017) was a pioneer in the field of particle physics in India, especially in the physics of high-energy colliding beam machines. He worked at TIFR for more than four decades. This is the second in a series of Memorial Lectures made possible by the generosity of Mrs. Manika Roy and the family of the late Prof. Roy.

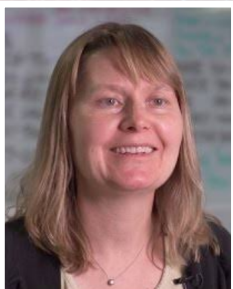


## HOW TO SEE A STAR EXPLODE FROM UNDERGROUND

**PROF. KATE SCHOLBERG**  
**DUKE UNIVERSITY, USA**

**FRIDAY | 29 NOV 2019 | 5:00 PM**  
**HOMI BHABHA AUDITORIUM, TIFR MUMBAI**

When a massive star reaches the end of its life, it collapses and then explodes as a supernova, which can shine as brightly as an entire galaxy for a brief time. Right before the explosion, the collapsed star emits a brilliant (but almost invisible) flash of neutrinos. I will describe how we can catch some of these neutrinos in vast underground detectors. The neutrinos we observe will give us an early warning of the impending supernova, and will allow us to see what's happening inside the exploding star and possibly witness the birth of a black hole.



Kate Scholberg is the Arts and Sciences Professor of Physics and Bass Fellow at Duke University. She has worked on a multitude of neutrino experiments, including MACRO, Super-Kamiokande, and T2K. She is a member of the Deep Underground Neutrino Experiment (DUNE) collaboration, and the spokesperson of the COHERENT collaboration. She is a recipient of the DOE Outstanding Junior Investigator and NSF CAREER awards, and was elected as an APS Fellow in 2013. She coordinates the SuperNova Early Warning System (SNEWS), an international network of supernova neutrino detectors.

**All are welcome. Non-TIFR members are requested to carry a valid photo-ID card.**



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