



THE LABORATORY OF TREE-RING RESEARCH

presents a talk by

Deanne Drake

(University of Witwatersrand, South Africa)

*Do the tree rings of African Terminalia sericera record
a chemical signal from coal-fueled power plants?*

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Room: Bannister 110

South Africa relies on a primarily coal-based power supply. The national power provider, Eskom, currently operates approximately 20 plants, and is now constructing the largest coal-fueled power plant in the southern hemisphere (5800 Megawatts) to meet growing demand. The new plant, Medupi, will be located near coal fields in the Waterberg region and will burn high-sulfur coal. Although there are several large coal-based plants in the Waterberg area that have operated for the last 30 years, very little environmental monitoring related to emissions was ever conducted, and retrospective analyses are of particular value for understanding impacts of these power stations. Historic river water quality records show a step increase in cation concentrations and pH in the late 1980s, when a 4900 Megawatt plant began operating in the Waterberg area. I am attempting to develop tree-ring chemistry records from *Terminalia sericera* (silver cluster leaf) to compare soil chemistry upwind and downwind of an existing plant to determine whether changes in soil chemistry can also be linked to plant emissions, acid deposition, and resulting changes in soil cation availability. The Waterberg area contains numerous protected natural areas and a UNESCO Biosphere Reserve. I will include some photos of interesting African plants and animals that may be affected by power operations.