

# APCTP SEMINAR

## Superconductivity: a Hundred Years to Reach Room Temperature

**Prof. Warren Pickett**

*University of California Davis*

**October 29th (Fri.) 10:00 (KST)**

Online via **ZOOM**

There is no macroscopic example of quantum behavior more evident, and more well known, than superconductivity. Its applications are very important -- magnetic resonance imaging, laboratory probes, large elementary particle accelerators -- but are confined to volumes where temperature can be sustained below liquid nitrogen temperature (77 kelvin). Room temperature superconductivity has been a hope (though a dim hope) for 50 years. RTS has now arrived, at least in chilly rooms, but as is common, there is a catch: this highly desired phase requires megabar pressures. This talk will begin with a sketchy history of the increase in the maximum superconducting critical temperature over some decades. Then the high-pressure metal hydrides will be discussed, with a straightforward and mostly simple description of how the achievement of HTS does not follow the long discussed path of very strong coupling. The conclusion will mention near-term research directions that may be useful in reducing the required pressure.

### ■ ZOOM Webinar

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