



The **Center for Detectors** presents:

---

## **HgCdTe Array technology development at the University of Hawaii for astronomical observations**

**Dr. Donald Hall**  
**Professor, University of Hawaii**

Thursday, May 19, 2011, 4:00 – 5:00 pm, Building 76, Room 1275

Cookies & Coffee at 3:30 pm

Presentation will be broadcast at: <https://connect.rit.edu/cfd>



### **Abstract**

The talk will focus on recent developments in two investigations for which the speaker is Principal Investigator; both aim to advance HgCdTe array technology for the most challenging astronomical observations in the 1 to 5  $\mu\text{m}$  region of the infrared. An NSF-funded program to develop the 16 Mpixel H4RG-15 array in partnership with Teledyne Imaging Sensors is about to begin cryogenic evaluation of the first hybrid arrays. A NASA-funded program to optimize linear mode HgCdTe APDs for photon counting applications, in partnership with Raytheon Vision Systems, has reduced dark count rates in small arrays originally developed for LADAR applications. These programs are likely to advance infrared astronomy both from the ground, and in space, but have a far broader range of potential applications.

### **About the Speaker**

Donald N. B. Hall received his B.Sc. in Physics from the University of Sydney and Ph.D. in Astronomy from Harvard University. Dr. Hall was a member of the scientific staff of Kitt Peak National Observatory, where he developed advanced infrared spectroscopic instrumentation and detectors for the McMath Solar Telescope and the Mayall 4-meter telescope. In 1977, he was awarded the Newton Lacy Pierce Price of the American Astronomical Society. In 1982, Dr. Hall moved to Baltimore as Deputy Director of NASA's Space Telescope Science Institute. In 1984, Dr. Hall took up the Directorship of the Institute for Astronomy at the University of Hawaii, developing the Mauna Kea Observatory as the best site known for optical, infrared, and sub-millimeter astronomy. Since returning to his research career, Dr. Hall has concentrated on development of very large array detectors for infrared astronomy from both the ground and in space. He pioneered the use of MBE HgCdTe for astronomy, especially for the Hubble Space Telescope and the James Webb Space Telescope, for which he received a NASA Congressional Space Act award. Dr. Hall was recently awarded the American Astronomical Society's 2010 Weber Award for Astronomical Instrumentation "for the design, invention or significant improvement of instrumentation leading to advances in astronomy".