

# Physics & Astronomy Colloquium

## Presents



## Ian Coddington

NIST Communications Technology Laboratory

Thursday, March 3, 2022  
12:10 pm, Webster Room 11

## “Dual-Frequency Combs For Greenhouse Gas Sensing: Successes, Challenges and Tech Transfer”

The optical frequency comb is rapidly maturing from a laboratory curiosity to a critically enabling technology in areas ranging from dual-comb spectroscopy of atmospheric gasses, to precision time dissemination, to the search for earth sized exoplanets. This talk will focus on the theory and background of this exciting laser system as well as the development of dual-comb spectroscopy. In particular, I'll focus on the application of dual-comb spectroscopy for greenhouse gas measurement, with the ultimate goal of calibrating and improving satellite carbon column measurements and understanding global carbon budgets. As with any technology journey the ultimate goal is to shepherd the technology across the “Valley of Death” that separates most research from commercialized technology. This talk will also discuss what this journey looks like as a government representative, some of the less intuitive lessons learned in this journey and the potential for societal impact.

*Host: Dr. Peter Engels*

*ZOOM Information: Meeting ID: 910 2578 6983 • Passcode: physastro*