

# ISTeC

The Information Science and Technology Center



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Colorado State University's  
Information Science and Technology Center (ISTeC)  
*presents two lectures by*

## Duncan Lorimer

Professor, Physics and Astronomy  
West Virginia University

### ISTeC Distinguished Lecture

In conjunction with the Statistics and Physics,  
Computer Science Department, and Electrical and Computer Engineering Department

***"Pulsars, Flickers and Cosmic Flashes: The Transient Radio Universe"***

Monday, May 4, 2015

Reception with refreshments: 10:30 am

Lecture: 11:00 am – 12:00 noon

Location: Morgan Event Hall



Statistics and Physics, Computer Science Department, and Electrical  
Engineering Department Special Seminar Sponsored by ISTE C

***"Fast Radio Bursts"***

Tuesday, May 5, 2015

Lecture: 4:00 pm – 5:00 pm

Location: Clark A103

Reception and refreshments in the hallway of Clark A103 at 3:30 pm

ISTeC (Information Science and Technology Center) is a university-wide organization for promoting, facilitating, and enhancing CSU's research, education, and outreach activities pertaining to the design and innovative application of computer, communication, and information systems. For more information please see [ISTeC.ColoState.EDU](http://ISTeC.ColoState.EDU).

## **Abstracts**

### ***Pulsars, Flickers and Cosmic Flashes: The Transient Radio Universe***

I will describe a brief history of discovery and some exciting recent developments in the world of pulsars and fast radio bursts. Pulsars, rapidly rotating highly magnetized neutron stars, were discovered in 1967 and continue to surprise and delight astronomers as powerful probes of fundamental physics and astrophysics. Fast radio bursts are millisecond-duration pulses of currently unknown origin that were discovered in 2007. Both pulsars and fast radio bursts have great promise at probing the universe on large scales and in fundamental ways. I will describe the science opportunities these phenomena present, and discuss the challenges and opportunities presented in their discovery.

### ***Fast Radio Bursts***

The transient radio sky was, until recently, relatively unexplored. Fast radio bursts (FRBs) are intense, brief flashes of highly dispersed radio waves that represent a new astrophysical phenomenon whose origin is currently unknown. I will review the properties of these objects and describe some of the most popular theories which range between giant solar flares to compact binary coalescences at cosmological distances. I will conclude with a look ahead to the exciting prospects that may be possible in the next five years.

### **Speaker Biography**

Duncan Lorimer is originally from the town of Darlington in the Northeast of England. He got his PhD in Radio Astronomy 1994 from the University of Manchester for his work on pulsar populations in our Galaxy. Following a lectureship at Manchester in 1994-5, he was a postdoctoral fellow at the Max-Planck Institute for Radio Astronomy in Bonn, Germany in 1995-8 and a staff scientist at the Arecibo Observatory in Puerto Rico in 1998-2001. He returned to the UK between 2001-2006 as a Royal Society Research Fellow at Manchester. Since 2006, he's been at WVU where he teaches and carries out research with his students in the Department of Physics and Astronomy. Honors received while at WVU include a Cottrell Scholarship (2009-2012), Outstanding Teaching Awards (2009, 2010) and Woodburn Professorship (2010-2012)

To arrange a meeting with the speaker, please contact Prof. Philip Turk, [pturk@rams.colostate.edu](mailto:pturk@rams.colostate.edu).