

WSU Dept. of Crop & Soil Sciences

2014 Campbell Lecture Series

A New Look at Northern Photosynthesis:

Monitoring Changing Productivity in Northern Terrestrial
Biomes with Optical Remote Sensing

Dr. John Gamon

Friday, April 11th

3:00 – 5:00 pm

VBR Science Forum

Rm 305

Refreshments to Follow



The satellite greenness index (NDVI) suggests a trend of increasing vegetation photosynthesis and productivity for northern terrestrial ecosystems. However, this interpretation is probably too simplistic because it does not consider the full range of surface features and atmospheric conditions that influence the satellite signal. In light of new observations, it is likely that altered hydrology and a receding cryosphere are contributing to NDVI trends that have previously been interpreted as a “greening” of the North, and that some northern regions are actually showing reduced primary productivity due to surface drying. Together, these methods argue for a more nuanced interpretation of satellite data incorporating independent ground validation. These findings also have large implications for ecosystem carbon balance and biospheric feedbacks to the climate and atmosphere.

Dr. Gamon is a faculty member at the University of Alberta, where he primarily studies the “breathing of the planet” – the exchanges of carbon and water vapour between the biosphere and the atmosphere. He co-founded SpecNet (Spectral Network), a network of collaborating sites and investigators using optical sampling methods (particularly spectral reflectance) to study ecological questions. He conducts fieldwork in a range of ecosystems from the Arctic to the Tropics.



World Class. Face to Face.

The Campbell Lecture was created to help further understanding of environmental soil science. It is named for Gaylon Campbell, who spent nearly 30 years as a professor of environmental biophysics and soil physics in the WSU's Crop & Soil Sciences department. He retired from WSU in 1998 to become vice president of engineering at Decagon Devices, a local manufacturer of biophysical research instrumentation. The lecture was created through gifts from Campbell Scientific, Inc., and Decagon Devices, Inc.