

## HEILAND LECTURE SERIES

# “Inexpensive Geophysical Instruments for Groundwater Exploration in Developing Nations”

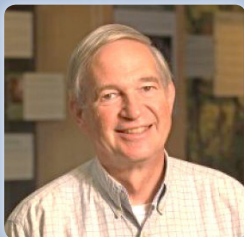
**DR. JAMES A. CLARK**

*PROFESSOR OF GEOLOGY, DEPARTMENT OF GEOLOGY AND ENVIRONMENTAL SCIENCE, WHEATON COLLEGE, WHEATON, IL*

**Wednesday, April 11, 2018**

**4:00 p.m. - Coolbaugh 209**

Inexpensive geophysical instruments can help meet an urgent need for cost-effective siting of water wells in developing nations. I have developed simple resistivity and seismic refraction instruments that are useful in shallow (< 30 m) hydrogeology studies. In addition my free software can be used to interpret data recorded by the instruments and predict depth to subsurface aquifers. Induced polarization, seismoelectric and surface wave methods are currently under development. Although excellent commercial instruments and software exist, their considerable costs prohibit extensive use where they are most needed. My entire suite of geophysical instruments, including a laptop computer for analysis and reports, can be assembled for less than US\$800. I have trained indigenous well drillers and aid workers to use these instruments in support of their efforts to provide water to rural regions of sub-Saharan Africa that lack safe water. My hope is that my talk will encourage many other geophysicists in these humanitarian efforts by designing inexpensive instruments, developing free software and training of nationals.



### **James Clark, Ph.D.**

Jim has worked in the alpine, the high arctic, the deserts and jungles of Africa and in Latin America. He has researched: global postglacial and modern sea-level changes; glacial isostasy and earth viscosity; changing postglacial levels of the Great Lakes; theory of massive hydraulic fracturing; and invention of inexpensive geophysical instruments. Ph.D. – University of Colorado 1977 (CIRES/INSTAAR); Postdoc – Cornell University (1977-1979); Research Associate– Sandia National Lab - DOE (1979-1982); Geology Professor – Calvin College (1982-2000) and Wheaton College (2000-present).