

**James Madison University's
Provost's Award for Excellence in Research and Scholarship**

2013 AWARD RECIPIENT

Professor of Integrated Science and Technology

Dr. Louise Temple



Russell Green ('13) and Carly Starke ('14), both biotechnology majors, confer with Dr. Temple on a novel bacterial virus genome in the computer lab.

Short Bio:

Dr. Temple is a professor in the Integrated Science & Technology Department where she teaches microbiology and molecular genetics to undergraduates. Her research has focused on disease causation by a bacterial pathogen of birds, *Bordetella avium*, to understand the virulence factors and construct a vaccine against this disease. She and her students have engineered the organism to be non-virulent and to deliver proteins from other poultry pathogens, thus constituting a multi-valent vaccine. She also guides younger students to discover and analyze viruses of bacteria, which have potential as natural antibiotics for infectious diseases and as reagents for food safety. This work has both scientific and educational import; Dr. Temple modeled this in a short course in India in 2011 and continues to collaborate with those students on the viruses they discovered. All of her research involves active participation by undergraduates. She has explored various ways to offer undergraduate research experiences to more students by guiding small groups of students in a single research project. Most recently, this involved a collaboration with Dr. Gordon Archer, VCU, with the goal of determining whether viruses in the environment carry genes for methicillin resistance.

Dr. Temple is also interested in broad accessibility of all groups to scientific careers. To this end, she regularly teaches a cross-disciplinary course called "Gender Issues in Science" in which students are exposed to a critique of science as a human enterprise from many perspectives.