



# BioLogue

Department of Biological Sciences  
Dr. David Goldstein, Chair

Volume I-06  
Winter Quarter, 2006

## SPECIAL POINTS OF INTEREST:

Dr. Stireman published in PNAS.

Dr. Van't Hof provides insight on avian migratory pathways and the avian flu virus

New Associate Director named for E.S. PhD Program

Dr. Carmichael named 4<sup>th</sup> recipient of WSU Annual International Education Award

Dr. Burton appointed to the USEPAs Science Advisory Board

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[www.ncseweb.org](http://www.ncseweb.org)

## Note from the Chair

No doubt you are aware that public debate about the teaching of evolution continues to rage. Even our President not long ago pronounced in favor of teaching "Intelligent Design" alongside Evolution in public schools. As Biology majors, you should be able to weigh in on this issue. Should we support teaching Intelligent Design as part of the science curriculum (i.e., as a legitimate alternative to biological evolution) in the public schools? (To remove the suspense, I'll give you my answer up front: NO!!!) In the space of this column I can only address this issue briefly; I will do so in terms of three questions.

First, what is science? Science is a way of understanding the world. It accepts that there is an objective reality out there, and it seeks to explain that reality in terms of natural laws – that is, laws that can be tested by evidence.



All scientific explanations are potentially provisional: contravening evidence calls for revision of explanations. However, some explanations are so regularly confirmed that we accept them as fact (the sun rises in the east because of the Earth's rotation). Scientific explanations are useful in that they can serve as the basis for predictions (and, sometimes, for inventions), which can then be tested by collecting further evidence. *(continued on page. 3)*

## Eugenie Scott Visits WSU

Dr. Eugenie Scott, Executive Director of the National Center for Science Education (NCSE) and a major voice in the national discussion about evolution, will be visiting us Friday, January 27<sup>th</sup>. Dr. Scott has been both a researcher and an activist in the creationism/evolution controversy for over twenty years. She has received numerous national recognitions for her NCSE activities and has offered many lectures and workshops to scientists, teachers, school boards and administrators, and to the general

public. Please join the Department in attending these thought-provoking presentations!

*"Problem Concepts in Evolution"*

*"Creationism, Intelligent Design, Evolution – What should we teach?"*

Seminar times and locations will be posted throughout the Biology building.



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Proc Natl Acad Sci

*“There is really no populated area of the world that will be immune”*



**Congratulations to the following Biology faculty and staff for their 2005 Employee Recognition Awards:**

Eileen Porter 30 years

Allen Burton 20 years

Elaine Davis 20 years

Mill Miller 10 years

Jacqui Neal 10 years

## Implications of Global Warming

Dr. John Stireman's first-authored article, "*Climatic unpredictability and parasitism on caterpillars: Implications of global warming*", has been published in the Proceedings of the National Academy of Sciences (PNAS). As the title suggests, the findings in the article may imply some previously unconsidered consequences of global climate change. PNAS is one of the country's most prestigious research publications.

Dr. Stireman co-authored this article with a number of prominent ecologists, including Dr. Daniel Janzen and Dr. Robert Ricklefs. The article was already picked up for comment in the New York Times:

(<http://www.nytimes.com/2005/11/15/science/15obox.html>).

Congratulations Dr. Stireman!

## Van't Hof Weighs in on Bird Flu

Dr. Tom Van't Hof, an expert in bird migration patterns, was recently interviewed for an article printed in Live Science related to the deadly avian flu virus. Dr. Van't Hof states that "by knowing the migratory patterns of birds and areas where species overlap while traveling between their breeding sites and winter grounds, one can predict precisely where problems will occur". Recently, birds reported to be infected with the avian flu virus have been from Russia and Eastern Europe. Based on Dr. Van't Hof's projections, these birds are now flying south through Turkey and soon Africa will be exposed. Next spring, these birds will

probably migrate to the Arctic to nest and mix with birds from North America. "There is really no populated area of the world that will be immune", Van't Hof said. There are many types of flu strains, but the one health officials are concerned about is called H5N1, or the avian flu virus. Currently, this virus has only spread from animal to human and is not easily transmitted among people. To read more on this article or the avian flu virus, visit:

[www.livescience.com/humanbiology](http://www.livescience.com/humanbiology)  
("Deadly Flu Will Reach U.S., says Bird Migration Expert")

[www.cdc.gov](http://www.cdc.gov)

## E.S. PhD Program Gets New Assoc Dir

As the Environmental Sciences Ph. D. program continues to grow, a new Associate Director has been appointed. **Dr. Don Cipollini**, an associate professor of Biological Sciences in his seventh year at Wright State, has agreed to serve in this position. His research focuses on the physiology and ecology of plant defenses to herbivores and pathogens and the chemical ecology of invasive plants.

He has taught Biology courses from the non-major to Ph.D. levels, and has involved a diverse array of students in research in his laboratory. Dr. Cipollini has graduated five M.S. students in Biological Sciences, and currently advises two M.S. students and one Ph.D. student in Environmental Sciences.

Congratulations and good luck!

(Continued from page 1...)

It is worth noting that science certainly cannot answer all questions. Some are outside of its realm; science can predict consequences of global warming, but it cannot say whether ANWR is more valuable as a natural preserve or as a source of oil. Other questions may simply be too complex or unfeasible for science to address; we may never know how life actually originated on Earth, though several scientifically plausible scenarios have been proposed.

### **“Science is a way of understanding the world”**

Second, what is meant by Biological Evolution? Evolution is a complex field of scientific study. It is based on the premise, supported by evidence ranging from the fossil record to the development of antibiotic resistant bacteria, that life has changed, and continues to change, over time. Within the scientific community, that premise is accepted as fact, as well established as any fact in science. What scientists continue to debate are the mechanisms of evolution. How important to evolution are natural selection, symbiosis, and genetic drift? Are the mechanisms responsible for “microevolution” (changes within species like antibiotic resistance) the same as those responsible for “macroevolution” (the emergence of new species or life forms)? How fast does evolution proceed? Evolutionary biologists seek to answer those questions using the methods of science: pose questions; seek evidence; test hypotheses; sometimes say “I don’t know.”

Third, what is meant by Intelligent Design (ID)? ID is an alternative explanation for the evolution of life forms or traits. In brief, ID states that some biological characteristics are so complex that it is simply implausible that they could have arisen by the chance-based mechanisms of natural selection. Instead, proponents of ID propose that complex living traits imply the existence of a designer that (who) conceived and implemented those traits. In the famous metaphor of William Paley 200 years ago, the design of a watch immediately suggests a watchmaker.

There are several reasons why this set of ideas does not meet the standards of science. First,

proponents of ID cannot specify (they don’t know) who or what the designer might be. (Note that various religious groups identify this designer as their deity; but that would clearly be religion and not admissible in the public school science curriculum!) Moreover, if that designer is supernatural, then this immediately puts it outside the realm of science, which is based on natural laws. Second, there is no way to identify which traits require invoking a designer and which are understandable via accepted scientific principles. And third, ID provides neither predictions nor tests.

So should ID be taught in schools? In my view, the societal issues involved (why the US grapples with this issue at the same time that it advances in science and technology; why this is an issue in the US but not in Europe; why so many are threatened by the ideas of evolution) are fascinating and well worth discussing in a social studies or psychology class (as is religion more generally). However, ID is not good science, and so it should not be taught in science class. There is plenty of bad science that we could discuss if we had time, from the flat Earth model to the role of planetary alignments in governing daily affairs. We simply don’t have time. Science class should be used to teach how scientists think and understand the world. And scientists do not view ID as a viable alternative to Evolution. Our students (your siblings and kids!) need the best science instruction available if they are to deal effectively with the complex world in front of them. ID is, simply, bad science.

### **Evolutionary biologists seek to answer questions using the methods of science: pose questions; seek evidence; test hypotheses; sometimes say “I don’t know”**

Have any questions or comments? Feel free to send them to me by email (please include your name). And if you wish to learn more about Evolutionary Biology, that class is back on our list of offerings this Winter quarter; I encourage you to enroll!

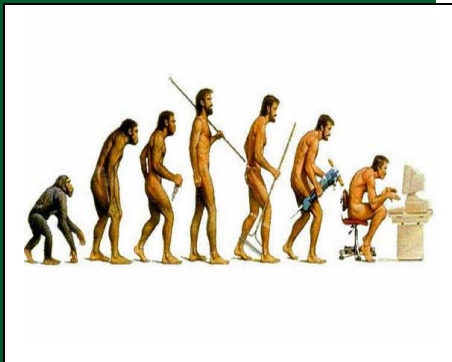


[david.goldstein@wright.edu](mailto:david.goldstein@wright.edu)

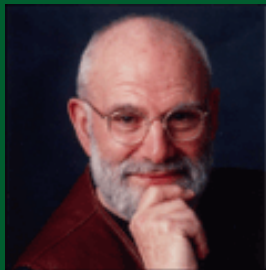
## Quote for the Quarter:

*Science has proof  
without any certainty.  
Creationists have  
certainty without any  
proof.*

---Ashley Montague



<http://lifewithalacrity.blogs.com/photos>



Dr. Oliver Sacks

# Carmichael Receives International Education Award

**Dr. Wayne Carmichael** has been named as the 4<sup>th</sup> recipient of Wright State's Annual International Education Award. Dr. Carmichael has been a strong promoter of opportunities in international education through his work with the UCIE, and he has

hosted students and researchers from around the world in his laboratory. Dr. Carmichael received his award on November 10<sup>th</sup> at The President's International Education Reception.

Congratulations Dr. Carmichael!

# Burton Gets Appointed - twice!

**Dr. G. Allen Burton** has recently been appointed to the USEPA's Science Advisory Board. This small group is the EPA's highest level of peer review and reviews all science that affects national policy. Bravo!!

In addition, the College of Science & Mathematics has recently appointed Dr. Burton as interim Chair for the Department of Geological Sciences.

Good luck Dr. Burton!

# Seminars, Seminars, Seminars...

Wright State hosts a variety of seminars each quarter for students, faculty and staff to attend. The seminars are sometimes hosted at the University level, while others are invited by the Colleges or Departments.

The Department of Biological Sciences will be hosting a series of faculty candidates winter quarter, for positions in Exercise Biology and in Environmental Biology/Ecology. All students are invited to attend!!

In addition, on March 9<sup>th</sup>, the University Honors Program will be hosting a keynote speaker, Oliver Sacks. As a physician and a writer, Oliver Sacks is concerned above all with the links between body and mind, and the ways in which the whole person adapts to different neurological conditions. We encourage all biology students to attend. For more information, please visit:

<http://www.wright.edu/academics/honors/institute/keynote>

# Congratulations Fall 2005 Graduates!!

Ryan Adams  
Elizabeth Boggs  
Lisa Peron  
Sophia Shah

Cynthia Addison  
Jordan Harris  
Sarah Ramsey  
Jessica Stanley

Asad Ansari  
Cara Jacomet  
Jessica Reid

Lucas Beagle  
Rachel McCorkle  
Leslie Reinhard



The BioLogue is a quarterly student newsletter that contains important dates and information for students in the Department of Biological Sciences. It is available online at:

**Need Advising? Contact:**

Degrees in Biological Sciences:

Jacqui Neal, 104 BH 775-2859  
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Degrees in Environmental Health

Hunt Brown, 064 BL 775-2201  
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Degrees in Clinical Laboratory Sciences

Bev Schieltz, 259 BH 775-2712  
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<http://www.wright.edu/biology>

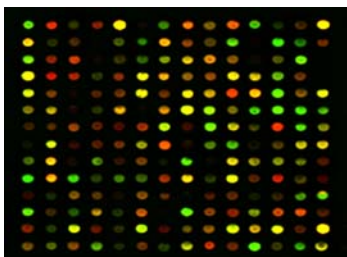
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Send comments or questions to

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## Thinking about Grad School?

**Attention Seniors:** If you are thinking about applying to graduate school, now is the time to apply. Wright State's Masters program in Biology is now accepting applications. For full consideration for financial support, it's best to apply by early February. If you have questions, contact Dr. Jim Runkle ([james.runkle@wright.edu](mailto:james.runkle@wright.edu)) or Dr. Don Cipollini ([don.cipollini@wright.edu](mailto:don.cipollini@wright.edu)).



## Winter Quarter Calendar

Jan. 2	University Closed
Jan. 3	Winter quarter begins
Jan. 9	Last day to register
Jan. 16	University Closed; MLK day
Jan. 23	Last day to drop a class
Feb. 20	Last day to receive a "W"
Mar. 1	Last day to apply for June, 2006 graduation
Mar. 13	Last day of winter qtr classes
Mar. 14-18	Final Exams

### FUTURE DATES:

Mar. 27 Spring Quarter begins

### ADDITIONAL COURSES OFFERED

#### SPRING QUARTER:

BIO 315: Invertebrate Biology  
BIO 401: Advanced Cell Biology  
BIO 415: Intro to Toxicology

#### SPRING QUARTER SEMINARS:

BIO 492: (02): Dr. Hull  
(03): Dr. Amon  
(04): Dr. Krane  
(05): Dr. Smith

BIO 800: (01): Dr. Miller  
(02): Dr. Cipollini  
(03): Dr. Stireman