The semester is starting out fast and furious. We had a great Department meeting on Tuesday. **Professor Gryko** agreed to take charge of the Departmental Seminars. Please remember that all Faculty and all students who receive travel support from JSU are expected to present at the Departmental Seminars. You can also present even if you are not traveling. It would be great to have some presentations on new courses and/or new instructional techniques. The rest of us are obligated to attend and support these seminars. **Dr. Herbert** will kick-off the seminars on Monday, January 23, speaking about the April tornadoes in Alabama. Be sure to attend! Yes, you can bring your lunch!

Please go through all the material in the newsletter this week. There are notices about travel grants, research grants, Preview Days, travel regulations, and more. If all this seems a bit overwhelming, I suggest you check out the jazz concert with Andy Nevala on Friday evening. It should be a great way to unwind.

-- Lou

**Department News**

**Tighter Enforcement of Travel Reimbursement Regulations**

Unfortunately, it seems as though JSU gets "dinged" every time they are audited. This is particularly true of reimbursements for travel. Therefore, the regulations get more and more onerous. © Tracy will now be asking for ALL receipts (including those meals less than $25 that previously “required” no receipt and they must be ITEMIZED). The University is not requesting this, just the department. Please do not get upset with Tracy about this. Her questions about your travel and requests for receipts and such will just help you get reimbursed quicker. If you do not follow all the rules, this creates more paper work for Tracy and can delay reimbursements for EVERYONE who attended the conference - not just your reimbursement. Please help out.

**University Self-Improvement Grants**

The University Travel and Self-improvement Grants program will accept proposals for Spring and Summer 2012. Proposal deadline is February 6, 2012. Please note that the Dean’s deadline is BEFORE the University deadline. The Dean's office will make the copies and deliver the requests to Dr. Delap. For more information go to [http://www.jsu.edu/academicaffairs/travel_grant.html](http://www.jsu.edu/academicaffairs/travel_grant.html).
Office Hour Cards and Syllabi Due to Tracy
Please make certain that you send soft copies of your Office Hour Cards and the syllabus from each course you are teaching to Tracy.

Call for Faculty Research Grants 2012-2013
Requests for the 2012-13 Faculty Research Grants are to be submitted through the department head and dean of your college to the Faculty Research Committee of the Faculty Senate, no later than March 23, 2012. Refer to Faculty Research Grants on the Academic Affairs website for guidelines and proposal submission form.

Spring Preview Days: 4 February and 14 April
On Saturday, February 4 and April 14 JSU will host Spring Preview Days to present our academic programs to visiting high school students and junior college students. The Browse Session, with departmental and organizational displays, will occur in the Stephenson Hall Gymnasium from 9:00 a.m. until 11:00 a.m. We are asking faculty/staff, and student representatives to have someone present at the tables/displays this entire period. Dr. Joe Morgan is organizing this. Please let Joe know if you can help out.

Potential Theft Warning from Roger Sauterer
At about 5 PM Wed, while I was in the office working on the PC, someone, presumably a student, had the audacity to sneak into the office and grab a couple textbooks (both used in current courses), then try to sneak out! When I noticed, I yelled and went out of the office...he dropped the books and ran out of the building...The guy is white, about 5’ 9’’, medium to slightly stocky build, blond hair about my length, no beard or moustache...and pretty good at running!

Photo Updates
Please see Tracy if you want a new photograph of you used on the Department webpage and the poster on the bulletin board. We will be printing a poster as soon as we get pictures of all the adjunct instructors.

Department Seminars

ALL Seminars are on Mondays at 12:30 PM in Room 202 Martin Hall
Everyone is ENCOURAGED to attend. Students are more than welcome. If you want to present, please contact Dr. Jan Gryko.

23 January: A Climatological Perspective on the 2011 Alabama Tornado Outbreak
Presented by Dr. Jonathan Herbert, Associate Professor of Geography

30 January: Silicon and Germanium Clathrates
Presented by Dr. Jan Gryko, Professor of
Chemistry

6 February: The re-introduction of the Green Pitcher Plant back into natural habitat at JSU’s Little River Canyon Center
Presented by Dr. Kelly Gregg, Professor of Geography and Geology

Student News

Spring 2012 College Of Arts and Sciences Symposium
The symposium will be February 15 & 16, 2012. All students are encouraged to participate. If you have presented a poster of your work at other meetings, consider an oral presentation at the symposium. The deadline for the submission of abstracts is January 31st 2012. To submit your abstract, use the following link: [http://www.jsu.edu/cgibin/apps/symposium](http://www.jsu.edu/cgibin/apps/symposium)

Student Travel Grants
We have funding from Sam Kinsaul to support student travel to present research work at conferences. Applications are due by 29 February 2012. See Lou or Tracy if you need an application. Requests up to $500 can be made.

University News

New Music Faculty Member, Jazz Pianist Andy Nevala to Perform Piano Concert
Andy Nevala, new faculty member of the David L. Walters Department of Music at JSU, will perform his debut concert for the region on January 13 at 7:30 p.m. in the Mason Hall Performing Arts Center. It is free to the public. Winner of numerous awards for performing, arranging and composing from Downbeat Magazine, Dr. Nevala is a highly regarded jazz pianist who has performed throughout the United States and Europe. Dr. Nevala is a frequent clinician for jazz festivals and has recorded over 20 CDs released in the U.S., Japan and South America.

Dr. Robert Felgar to speak at Faculty Scholar Lecture
English Department Head, Dr. Robert Felgar, will give an inspiring lecture to faculty and students sponsored by Sigma Tau Delta, International English Honor Society. The lecture will take place on January 24 at 3:15 p.m. in Stone Center Room 232.

Top Ten List

Top Ten Science Stories of 2011 from Michio Kaku

10. Fukushima Nuclear Disaster: 2011 was dominated by the horrendous news that there were three simultaneous meltdowns at the nuclear power plant in Fukushima, Japan, in March, sparked by a gigantic 9.0 earthquake and a monstrous tsunami. The uranium core of Unit 1 completely liquefied (the first time this has ever happened). In December, the utility, TEPCO, announced that it finally stabilized the reactor after 9 months of agonizing work, and temperatures inside were below boiling. Now comes the hard part -- cleaning up the tragedy. It took 14 years to clean up Three Mile Island. It’s been 25 years since the Chernobyl
accident, and that reactor is still not stable (the core continues to produce intense heat). Meanwhile, Germany and Switzerland both announced that they are permanently phasing out all nuclear power plants, in light of Fukushima. This is putting pressure on President Obama, who is still pro-nuclear.

9. **Wacky Weather:** 2011 was haunted by the specter of "100-year storms," i.e. 100-year flooding, 100-year heat spells, 100-year droughts, 100-year forest fires, etc.. Property damage was in the billions and the human agony was often unbearable. No one can explain the weather, but several people invoke "global warming." While that link is possible, it is definitely not already established.

8. **Higgs Boson Found?** Physicists at CERN near Geneva, Switzerland, announced that they are finally closing in on the elusive Higgs particle. The Large Hadron Collider, or LHC, a colossal $10 billion machine 17 miles in circumference, can hurl protons at 14 trillion electron volts to re-create conditions near the Big Bang itself, where particles of the Standard Model of particles can be found. The Higgs is the last, missing piece of the Standard Model.

7. **Giant Black Holes Found:** Black holes, once considered science fiction, now appear all around the universe. Astronomers recently identified the biggest black holes of all time, one weighing in at over 20 billion suns in mass. Our own Milky Way galaxy has a black hole with about 3 million times the mass of the sun.

6. **Twins of the Earth Found:** The Holy Grail of planetary astronomy is to find a twin of the Earth in outer space. Astronomers in 2011 announced a new candidate. So far over 500 extrasolar planets have been identified orbiting distant stars, but only a few seem to be in the so-called habitable zones surrounding those stars, and the one announced this month, called Kepler-22b for now, is the first to be confirmed.

5. **Alien DNA on Earth?** All DNA on earth is basically the same, except that the genes are arranged differently for different plants and animals. So it was shock when scientists announced that Mono Lake in California had DNA which had never been seen before, with arsenic as one of its building blocks.

4. **Last Hurrah for Space Shuttle:** President Obama has altered the mission of NASA. He canceled the return to the moon proposed by President Bush, canceled the space shuttle, canceled the Constellation project to replace the shuttle, and put off any manned mission to Mars. NASA’s manned space program was a victim of the Great Recession. So it was with teary eyes that people watched the last shuttle launch in July. U.S. astronauts will be hitchhiking rides to the International Space Station with the Russians for the next several years. People are keeping their fingers crossed, hoping that private enterprise will eventually pick up the slack.

3. **Mars Mission:** The "Godzilla" of space probes blasted off in November, headed for Mars. The Mars Science Laboratory, a rover nicknamed Curiosity, is five times bigger than any of the previous Mars rovers. Its mission is to find evidence that liquid water once existed on Mars and then to find evidence of microbial life that might have spawned on Mars billions of
years ago. So far, scientists have found no conclusive evidence of life on Mars. But since Mars once had great oceans (one of them about the size of the U.S.) there is still hope that some form of life may have germinated on Mars.

2. **Tape Recording a Memory**: In the movies "The Matrix" and "Total Recall," memories can be inserted directly into the brain. So instantly you can become a karate master or a helicopter pilot. This is all science fiction, but science is catching up. Scientists at USC and Wake Forest University made a major step in this direction. Memories in rats and humans are first processed in the hippocampus of the brain. These scientists recorded signals in the hippocampus as the rats learned a task. Then they gave the rats chemicals that made the rats forget the task. Finally, the re-injected the taped messages back into the hippocampus, and the rats remembered the original task.

1. **Dark Energy**: The Nobel Prize in Physics in 2011 went to three astronomers who have discovered that the expansion of the universe is accelerating, rather than slowing down, and that a mysterious "dark energy" may be responsible. Only a few decades ago, it was widely believed that the universe was mainly made of atoms. Now, we realize that 73 percent of the matter/energy comes from dark energy (the invisible energy of the vacuum), 23 percent from dark matter (invisible matter that surrounds the Milky Way Galaxy), 4 percent from stars, and just a paltry 0.03 percent from higher elements which comprise our body and the planets.


**Contact Details**

If you have items of news or interest that you would like included in the Department of Physical and Earth Sciences newsletter, then contact Tracy Casey before noon on Thursdays at: **tscasey@jsu.edu** or phone (256) 782-5232.