Arctic Ice Sheet Melting 30 Years Ahead of Scientists’ Predictions in 2007. What does this mean?

By: Kimberly Kline, LEAPS Fellow

A surprise for glaciologists (scientists who study large ice sheets) in 2007: the Antarctic Ice Sheet is melting 30% faster than the IPCC (Intergovernmental Panel on Climate Change) had predicted. The IPCC is a collaboration of top climate scientists from around the world that compile data to make predictions about climate change’s effects. Members of the panel consist of the best and brightest in the world when it comes to understanding how the Earth works. The panel was rewarded this year, winning the Nobel Peace Prize for their efforts to understand climate change.

Original predictions by the panel put the Arctic free of summer time ice by 2050, but recent data shows that this could happen by 2020. Large ice sheets are very important in terms of global warming because of their high albedo, which refers to their ability to reflect light and heat. They work like a white t-shirt in the summertime. If it is really hot outside, you’d rather be wearing white to keep yourself cool and not brown or dark green like the color of bare earth and vegetation.

While many people are striving to reduce their greenhouse emissions and move global economies toward a more sustainable future, not enough is being done to curb climate change. But what does large-scale climate change mean for the future of humanity? Ice sheets melting in the Arctic can cause sea level to rise in Santa Barbara which could cause changes in weather patterns, local vegetation, animals, bugs, and diseases and on and on… In general, more erratic weather patterns and warmer temperatures spell doom for a lot of large mammals, but this is an ideal situation for microbes to quickly evolve. While the consequences of global warming seem dim, general awareness about scientific issues is increasing. The challenges that climate change presents for scientists are creating an exciting atmosphere for innovation. Advances are being made daily, and there are many reasons for everyone to feel hopeful. Recent advances in LED lighting at UCSB are producing lighting that is much brighter and vastly more energy efficient than current lighting options. In addition, with gas prices rising and the popularity of wind turbines increasing, wind energy is getting close to the price of fossil fuels for providing large-scale electricity. And you can now buy solar panels as thin as stickers that you can put on the airplane window and charge your cell phone while you fly. Global warming is just another exciting obstacle for science.

Lunch with a Scientist

By: Reggie Archer, LEAPS Fellow

This is a fantastic opportunity to get real insight into the life of a scientist outside the classroom! Lunch with a scientist is our newest addition to the LEAPS program. Every month, 6 students from the LEAPS classrooms will be invited to enjoy lunch with a couple of fellows. Students get to share their thoughts over a delightful meal from one of the surrounding restaurants in the area. The first lunch was held on Wednesday January 30, 2008 and the first six students were selected based on their good grades and academic achievement! Congratulations to Zaira Sosa, Avery Pashal, & Zack Ruffas from Ms. Klass’s class and Abram Andrade, Taryn Myfolds, & Cassie Kerr from Mr. Garza’s LEAPS classes. Each month a new group of students will be invited to participate; so STUDENTS, if you have good conduct, good grades, good citizenship, good attitude, good improvement as well as interest in learning and helpfulness, then YOU TOO can be invited to enjoy Lunch with a Scientist! Key word: GOOD! Ask one of the fellows for ways to improve your chances of being selected. Good luck!
**ICE CREAM RECIPE**

**Ingredients:**
- 1 cup of milk
- 2 tbs of sugar
- 1 tsp of vanilla extract
- 2 lbs of ice
- 1/4 cup of rock salt
- 1 gallon freezer bag
- 1 ziplock sandwich bag

Try this substitutions milk and vanilla extract with strawberry or chocolate milk for a different flavor of ice cream!

**About LEAPS**

**Let's Explore Applied Physical Science (LEAPS)** engages UCSB graduate and undergraduate Fellows as instructors and mentors for inquiry-based science in Grade 8 classrooms. By establishing collaboration between Fellows, science teachers, and UCSB scientists in school classrooms, the LEAPS project implements hands-on, minds-on learning experiences in physical science.

LEAPS partners with the Endowment for Youth Committee in Santa Barbara to coordinate after school clubs at junior high sites. The Fellows also help younger students to prepare for Family Science Nights that foster community interest to science education and opportunities.

**Fellows**
- Reggie Archer
- Lindsay Gary
- Anthony Karmis
- Lina Kim
- Kimberly Kline
- Thomas Kuo
- Amir Rahimi

**Teachers**
- Marilyn Garza
- Julie Kluss

**UCSB Participants**
- Beth Gwinn
- Fiona Goodchild
- Wendy Ibsen
- Samantha Freeman

Visit the LEAPS website: [www.leaps.ucsb.edu](http://www.leaps.ucsb.edu)
Send questions or comments to msgarza@msgarza.com

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**Fellow of the Month: Ms. Kim**

Ms. Kim is a Mechanical Engineering graduate student at UCSB studying turbulence and chaos in fluid dynamics. Her research involves trying to understand turbulence, a fascinating and long standing problem in classical physics that remains unsolved to this day. One of the things she enjoys doing the most is traveling to new places because she loves discovering new cultures and making new friends all over the world. On her free time, she enjoys spending quality time with my family and friends. She is also a roller coaster enthusiast, so much so that she's traveled to Ohio's Cedar Point park to ride one of the tallest coasters in the world, Millennium Force, a "giga-coaster" termed for its extreme height.

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**Ribbit: What Causes Global Warming?**

- Not taking care of the environment. **Laine Neil**
- The government, it is corrupting our nation. **Luis Monroy**
- Pollution from oil tankers. **Andrea Guerrero**
- Pollution from the cheapie cars. **Robert Hernandez**
- The pollution from people on Earth in an internal way. **Sophia Spann**

See Let's Explore for the scientific answer

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