

Planetary geology far from boring: UNB professor

Whitehead excited to examine Earth's craters

by Nathan White

Last week, *The Brunswickan* reported on the Planetary Space and Science Centre and its contributions to Mars research, a hot topic in the news lately thanks to the safe deployment of NASA's Spirit rover.

Research associate Dr. James Whitehead has spent the past 12 years working at the Centre, and while some of his research has focused on the red planet - including a recent study with Jim Garvin, NASA's Chief Scientist for Mars Missions - he points out how important it is to learn about what has happened to shape the blue one we live on.

"There's a lot for us to understand just here on Earth," said Whitehead. "You have to understand it here on Earth first before we can start employing what we've learned here [on other planets.]"

Whitehead, who crossed the ocean to do graduate work at UNB after getting his bachelor degree from the University of Wales, specializes in studying impact craters, the gaping holes that speeding meteorites make when they hurtle into a planet's surface.

Whitehead compares the action to a water droplet falling into a sink and being frozen a split second after impact, which leaves a "central peak" in the middle of the crater.

"It's such an intense pressure that



Volcanic eruptions are one of Earth's many natural phenomenons.

the rock starts to behave as a fluid and actually rebounds," he said.

While the average person might think geologists spend their life indoors staring at rocks all day, Whitehead insists that his branch of the science is far from boring.

"It's fun," said Whitehead, whose passion for planetary geology takes him all over the world.

"It's a really dynamic part of geology. Most geology is involved with relatively slow processes at moderate to high pressures and moderate to high temperatures. These are really, really fast processes at really, really high temperatures that are over in a matter of seconds but can still have huge consequences on the planet and on the biosphere."

One of Whitehead's most recent

studies took place in northern Siberia, where, in partnership with Geological Survey of Canada's Dr. Richard Grieve and UNB colleague Dr. John Spray, he examined the Popigai impact structure, one of the five largest craters on Earth at 100 kilometres in diameter. Despite its size, geological evidence shows that the impact had no effect on the biology of the time.

"It's not really the size of the impact that makes a difference... it's what it's impacting," said Whitehead. Some rocks may send up huge clouds of damaging dust when struck by a meteorite, while on others, such as granite, even a very large impact may have little to no effect on the atmosphere.

The study of impacts is important

not only for what it can tell us about our past, but also to help us prepare for what may happen in the future. Recent movies Armageddon and Deep Impact dealt with the planet being struck by a devastating meteor, and while Whitehead says they are a bit sensational ("Armageddon is really bad") the possibility is far from Hollywood fantasy.

Whitehead said that about 1000 asteroids on Earth-crossing orbits are over a kilometre in diameter, "... and those are just the ones we know about." Depending on where one were to impact, the conceivable consequences could include carcinogen-laced global wildfires, toxic fumes, and huge dust clouds, or, in the case of a Pacific Ocean impact, an unprecedented tsunami reaching from Japan to California to Australia.

"We've seen large bodies that could have done a lot of damage fly by the earth, and we've only seen them as they're leaving," said Whitehead, who explained the alarming blind spot caused by the sun's radiation, which obscures a significant portion of space from view.

Whitehead, who also teaches geology at UNB, clearly enjoys the work he has done so far and, with plenty left to discover, he has no intention of changing professions any time soon.

"It's really fascinating... and there's a lot to be done as well... we don't really understand such a lot about the impacting process and how different minerals respond to being impacted."

NEWS SHORTS

compiled by Graham Cox

American soldier death toll has now surpassed 500 as a huge blast hits the occupations headquarters in downtown Baghdad killing around 20 and injuring between 100 and 200 people. Reports from the site tell of a truck bomb with nearly 500 kilograms of explosive material detonating just outside the gates.

Protests in France have erupted over the ban on blatant religious symbols in public schools including the Hijab which is a head scarf worn by some Islamic sects. The protests involved thousands of women and were organized by the Muslim Party of France which has ties to Hezbollah. The protesters claim it is a rights issue, the French government claims it is about growing religious fundamentalism.

Ayatollah al-Sistani, the senior Shia cleric in Iraq, wields substantial power with an estimated 60 per cent of the near 25 million Iraqis. He has issued a fatwa that states all Iraqis should have the right to vote. Demonstrations by the Shia community have amassed close to 100,000 in a single protest. These sentiments are in direct opposition to US statements that there is not enough time to introduce a democratic process before a government is installed. This has led the US to plead with the UN for support for the process. Annan has said he agrees with the US that there may not be enough time before the self-imposed deadline. The UN left Iraq in August after a blast killing many members of its staff and will not return unless it is guaranteed more say over processes in Iraq.

Formal discussions on Canadian involvement in the current US administration's Missile Defence System will start soon. The goal of the system is to track and shoot down ICBMs from hostile countries from ground-based sites before they reach the US. Opponents to the plan point to extraordinary costs, failed tests, and the negative effects on arms control in the world.

Ex-Heritage Minister Sheila Copps has announced that she is not sure the Liberal party is still the place for her. The comments come after claims that Paul Martin is sidelining her, the hostile challenge for her riding by new Transport Minister Tony Valeri, and wooing from the NDP.

The World Social Forum is being held this week in Mumbai, India. An estimated 100,000 people from more than 130 countries have turned up for a week of debates, talks, and activities geared toward examining alternatives to the present form of capitalism in running global affairs. The focuses are on how neo-liberal policy is affecting the masses, the balance of global power, and the global problems arising from poverty.

Canadian farmer Percy Schmeiser is in the Supreme Court of Canada challenging Monsanto to their claims that he violated patent laws for having "Roundup Ready" canola growing in his fields. Monsanto has a lifeform patent on this variety of genetically engineered canola. Schmeiser states the corn contaminated his fields without his knowledge and worries there is little he or other farmers can do to stop contamination.

Martin and Bush met at the Summit of the Americas during breakfast. Initial reports suggested significant progress on issues around Canadian companies bidding on Iraqi contracts, deportation without notification of Canadians such as Maher Arar, and better general relations between the two countries. However, critics pointed out that the rules governing Iraqi rebuilding contracts were changed to also include Germany and France and would have come about without the meeting. The notification agreement was labeled "window dressing" by Arar's lawyer.

Where does the UNB technology fee go?

An estimated \$350,000 is collected annually from UNB students

by Sarah Nofzell

The University of New Brunswick instituted a \$50 technology fee in 2002 to ensure that UNB students would have access to the latest computer systems and resources. The fee is charged to all full-time students (\$25 per term) and part-time students (\$5 per course). But where does the money go?

The money from the technology fee is being used around campus to

upgrade computer labs and web kiosks, install data projectors in classrooms, and replace computer mice, tables, and chairs in many facilities. Funds collected in Fredericton are used on the Fredericton campus, and likewise for the fees collected in Saint John.

Scott Goleniec, a Computer Science student in his final year at UNB, says the technology fee means "everything I'd need for my courses, computer-wise of course, will be provided for me."

He said he wouldn't mind seeing more of the money going towards maintenance of the existing systems, citing "logging onto a computer that just crashes" as a frequent cause for concern around campus.

A committee is in place to decide how to use the funds generated from the technology fee. It consists of faculty, staff representatives, and two students.

When it comes to deciding what should be done with the estimated \$350,000 of student money collected each year, Goleniec said more people should have input into the decision. "As the fee is supposed to be for the students, [having] representatives from all over campus would make sense, if not from each faculty."

Students at UNB paid an additional \$433 in fees for services not included in tuition, such as the \$10 Brunswickan fee, \$15 CHSR fee, and the \$50 technology fee. Anyone who would like more



Sarah Nofzell/The Brunswickan
\$50 can go a long way.

information or wants to make suggestions for the use of their \$50 next year should visit the IT webpage, located at: www.unb.ca/its/students/techfee/, and use the comment form provided at the bottom of the page.

Dr. Richard E. Lee
Optometrist
406A Regent St. 458-1580
(2 buildings past Harvey's Hamburgers)
New Patients Welcome

Sunday Feb 1st
Social Club
5 Coors Light - \$8.75 all night

The **Capital**
LIVE THIS WEEKEND
In-Flight Safety
With Jill Barber
Wednesdays
FEEL THE BEAT
LIVE HIP-HOP DJ & Freestyle
Come on out
Open Mike/Open Tables
Great Performances Each Week
349 King St, Piper's Lane, 459-3558, capital@nbnet.nb.ca

Hot Toddy
Joel LeBlanc, Thom Swift, Tom Easley
THE CELLAR
EST. 1994
Pub & Grill
Live Friday Jan 23 & Saturday Jan 24
hottoddytrio.com