



Photo > Wayne Maddison, UBC

New spiders new possibilities

A UBC researcher's discovery of dozens of new species of jumping spiders is offering exciting new opportunities to inform fields as diverse as medicine and robotics.

Wayne Maddison, a professor of zoology and botany, collected more than 500 individual spiders in the Kaijende Uplands, one of Papua New Guinea's largest undeveloped areas. Preliminary studies show as many as 130 species, including 30 to 50 novel species, may have been found on the trip.

"Spider venom has evolved for millions of years to affect the neurological systems of the spider's insect prey, and each species of spider gives us another opportunity to find medically useful chemicals," says Maddison. "Jumping spiders, with their remarkably miniaturized yet acute eyes, could help us understand how to push the limits of vision, among other things."

UBC to get greener

The federal and provincial governments are investing nearly \$68 million to boost research infrastructure and sustainability at UBC.

The Biological Sciences West and South buildings at UBC's Vancouver campus will receive \$65 million to renovate research facilities and classrooms originally built more than 50 years ago, while incorporating the latest sustainable features. The Geoexchange System at UBC Okanagan, which uses groundwater from under the campus to heat and cool buildings, will receive \$2.9 million to make the campus emissions-free by 2010.

The BioSciences Renew Project is expected to be completed by spring 2011.

temperature changes affect 1,066 commercially important fish and shellfish species from around the world, including cod, herring, sharks, groupers and prawns.

"We found that on average, the animals may shift their distribution towards the poles by 40 km per decade," says William Cheung, who led the project as a post-doctoral fellow at UBC's Fisheries Centre. "Fishers in the tropics may take the brunt of these changes, since many are from developing countries and are ill-equipped to deal with the loss in catch. Nordic countries like Norway, on the other hand, may see a gain in potential catch."

Offsetting B.C.'s carbon footprint

A UBC spinoff company has been selected to be the first provider of carbon offsets to the Pacific Carbon Trust (PCT), an organization that will provide offsets to the Government of B.C. and its crown corporations.

Offsetters Clean Technology Inc., a company founded out of the Centre for Sustainability and Social Innovation at UBC, will provide PCT with high-quality emissions

Marine management

A team of researchers from UBC's Sea Around Us Project and Princeton University is using computer models to simulate changes in ocean temperature and current patterns caused by various climate change scenarios. The research aims to discover how

awards

offsets, or a form of trade funding projects that reduce greenhouse gas emissions, in an effort to address climate change in B.C. The Government of B.C. and its crown corporations have all pledged to be carbon-neutral by 2010.

"This is the first of many purchases to fund innovation and stimulate the development of a viable emissions offset industry in B.C." said Minister Hansen. "In its first agreement, the PCT has purchased the ability to offset 330,000 tonnes of greenhouse gas (GHG) emissions over five years – equivalent to taking 85,800 cars off the road for one year."

Partners in sustainability

After decades of guiding sustainability programs at the national and international level, former B.C. premier Mike Harcourt is partnering with UBC to help people make a difference in their communities and businesses. As associate director of the new UBC Continuing Studies Centre for Sustainability, Harcourt will contribute to educational programs for practitioners in the public and private sectors that stress practical knowledge in tackling climate change and sustainability issues.



Photo > Lorne Whitehead, UBC

Let there be light

A UBC invention that brings natural sunlight into multi-floor office buildings will receive up to \$2.1 million in funding from Sustainable Development Technology Canada (SDTC). The patented Solar Canopy Illumination System collects sunlight on the exterior façade of conventional buildings through a specially designed array of mirrors. Customizable "light guides" then bring the sunlight

into the building, supplemented by dimmable light fixtures.

"This is the first such system to be practical for widespread adoption in standard office buildings," says Lorne Whitehead, UBC physics professor and inventor of the technology. "The system will not only bring natural light into workplaces but could reduce greenhouse gas emissions from lighting in commercial buildings by 10 to 25 per cent."



Photo > Kathy Ann Miller, UBC

From sea to land

A team of researchers including scientists at UBC has discovered a chemical substance in marine algae that may alter plant evolution timelines. Lignin, a glue-like substance that helps fortify cell walls and is vital to structural support in land plants, was previously thought to be unique to terrestrial plants who sprout upward, supported by their own woody tissues. Until the discovery, lignin was long considered land plants' distinguishing characteristic from aquatic plants that rely on water for support.

"All land plants evolved from aquatic green algae, and scientists have long believed that lignin evolved after plants took to land as a mechanical adaptation for stabilizing upright growth and transporting water from the root," says lead author Patrick Martone, an assistant professor in the UBC Department of Botany. "Because red and green algae likely diverged more than a billion years ago, the discovery of lignin in red algae suggests that the basic machinery for producing lignin may have existed long before algae moved to land."

Fellow, Royal Society of London

George Sawatzky, Department of Physics & Astronomy

Officers, Order of Canada

Victor Ling, Department of Pathology & Laboratory Medicine

Timothy Oke, Department of Geography

David Sweet, Faculty of Dentistry

Members, Order of Canada

Max Cynader, Faculty of Medicine, Brain Research Centre and Vancouver Coastal Health Research Institute (VCHRI)

Ross Petty, Department of Pediatrics (Pediatric Rheumatology) and VCHRI

Harold Adams Innis Prize

Tina Loo, Department of History

Professor Loo received the Harold Adams Innis Prize for her outstanding book *States of Nature: Protecting Canadian Wildlife in the Twentieth Century*. The prize is awarded by the Canadian Federation for the Humanities and Social Sciences to the best English-language book in the social sciences.

Killam Prize, Humanities

Sherrill Grace, Department of English

Professor Grace has worked tirelessly to transcend the intellectual boundaries of research and scholarship in culture and the arts through cross-disciplinary collaboration. The Canada Council for the Arts Killam Prizes are intended to honour distinguished Canadian scholars actively engaged in research in Canada.