



SPRING 2011



From the Executive Director

Adaptation and mitigation. These two words define much of the PICS mission: how best to adjust to human-caused climate change while working strenuously to slow it down. PICS' past annual forums have largely focused on the latter—specifically, BC's Carbon Tax (an effective mitigation tool), and FutureGrid, which examined BC's future sustainable electricity options.

However at this year's PICS annual forum, adaptation will take centre stage. Complex questions will be addressed: How should we adapt to rising sea levels along the BC coast and changing flood probabilities in interior watersheds? How secure are future food supplies? How best can we ensure that sufficient water will be available to meet future domestic and agricultural demand in regions like the Okanagan, where annual precipitation is projected to fall as global warming continues? What sized culverts should city engineers install to handle runoff in the face of future extreme rainfall events? What tree species should we be planting now—for harvest later this century—to replace the 14 million hectares of interior lodgepole pine stands recently ravaged by the pine bark beetle? How should policies be designed to encourage resilient agriculture? Such questions are daunting and many, and in every case resolving them will require application of the PICS approach—interdisciplinary collaboration that spans the science to social science and policy gamut.

It is a timely topic. Adaptation is increasingly on the minds of Canadians as regional extreme or unusual weather events sharpen concerns about longer-term climate change. This concern became increasingly apparent during my six-month lecture tour earlier this year, sponsored by the Canadian Meteorological and Oceanographic Society (CMOS), which will wrap up in the fall. It was a privilege to deliver lectures about PICS and climate change to audiences in most major cities in Canada. And whether the venue was Fredericton or Winnipeg, Lethbridge or Ottawa, or any other of the 18 stops, questions consistently arose about 'last week's' or 'last month's' or 'last fall's' record regional warm or cold temperatures, or deluge or flood, or the local water shortage.

Although discrete weather events should not be related to long-term climate evolution, they are nevertheless driving an emerging awareness, coast-to-coast, that the climate goalposts with which many of us grew up are shifting. That dawning recognition is fostering a new willingness to support action—in every city the audience responded instantly when asked what two things this country needs if we are to make progress in dealing with the climate-change challenge. The unanimous answers: a) a price on carbon emissions; and b) national leadership on the climate file akin to that shown by the government of British Columbia in the past four years. Both speak to mitigation, and politics in this country being what it is, it may still be some time before we see national progress on either point. But at the community to regional scales, progress is happening. Imposing a price on carbon emissions is not something that a community can do, but taking steps to adapt to the impacts of climate change is. How we do that most effectively will be the central point of discussion when community planners, practitioners and adaptation experts gather at the Resilient Communities Forum on June 14 and 15. If you'd like to join us there, registration is now open at www.pics.uvic.ca.

More on the PICS annual forum...

The need to adapt and prepare our communities and businesses for climate change is the focus of this year's annual forum hosted by the Pacific Institute for Climate Solutions (PICS) in Vancouver June 14-15.

The "Resilient Communities: Preparing for the Climate Challenge" forum will bring together scientists, planners and decision-makers to learn about the latest climate change



PICS forum chair Ben Kangasniemi.

projections for BC and to exchange information about best adaptation practices and available resources. Speakers from BC, Canada, the UK and Australia will provide insights on adapting to climate change at the community level and for food producers.

Forum chair Ben Kangasniemi says while reducing greenhouse gas (GHG) emissions to slow the rate of climate change must remain a top priority for world governments, we must prepare for the unavoidable changes ahead.

"Global warming is not just about rising temperatures," he says. "It is also about declining mountain snowpacks that lead to reduced river flows in the summer affecting power generation, fisheries and community water supplies. It is about increased water vapour in the atmosphere which is expected to lead to more intense precipitation events, and it is about rising sea levels. Although there is uncertainty about how these changes will unfold we now know enough to manage the risks and ensure that our communities are as resilient as possible."

Part of the forum includes a free public session that explores how climate change may affect food security, being held from 7 pm on Tuesday, June 14 at the Goldcorp Centre for the Arts, 149 West Hastings Street. Everyone is welcome. To register for the whole forum, or to find out more details, visit www.pics.uvic.ca

PICS hosts world-leading climate physicist

Vancouver and Victoria audiences had the exciting opportunity to hear about the latest in physical science discoveries from the world's leading authority for assessing climate change, with the June visit by Dr. Thomas Stocker from the UN's Intergovernmental Panel on Climate Change (IPCC). Stocker holds one of the most prestigious assignments in the scientific world as co-chair of Working Group I, which provides the physical science basis of the IPCC's work. He also heads the division of climate and environmental physics at the University of Bern, which is at the cutting edge of climate and climate impact research.

Stocker gave a very well attended public lecture in downtown Vancouver on June 7 and also appeared on BC and Alberta television, radio and print networks. His talk, 'Climate Change: Why do we know that we know', outlined the physical science basis of climate change. Using a combination of global observations, climate process understanding and climate models, Stocker explained how scientists detect and attribute past, as well as project future, climate change in a manner that was accessible to both a general and specialist audience. Due to high demand, the lecture will shortly be available for viewing on the PICS website.



UN climate physicist
Dr. Thomas Stocker.

PICS research update

This spring has seen the announcement of \$1.8 million in funding for new PICS climate-change related research, as well as the release of new research findings in the PICS white paper series.

A total of 27 new research projects that aim to find solutions to the environmental, social and economic challenges of climate change are now underway. True to the Institute's collaborative nature, the vast majority of the project teams involve inter-university researchers as well as experts from within government, the private sector, and other research bodies. Project durations range from eight months to 2.5 years and come under one of the PICS research themes: the low carbon emissions economy, sustainable communities, social mobilization, and resilient ecosystems.

Research topics include:

- determining the next best steps for BC's Carbon Tax;
- using solar energy to turn the greenhouse gas (GHG) carbon dioxide (CO₂) into a clean energy fuel;
- investigating opportunities to reduce GHG emissions and create green jobs through zero waste policies;
- designing a framework for dealing with the employment impacts of the shift to a low-carbon economy;
- determining if BC's luxury tax steered motorists towards cheaper, smaller and more fuel-efficient vehicles;
- investigating whether energy from ocean waves can be a viable electricity source in BC;
- creating a new computer tool to help local governments 'test drive' their energy and emissions planning;
- analyzing social media's effectiveness at mobilizing youth to reduce energy consumption; and
- development of tools and better management systems to safeguard BC's forests and fisheries.

The new research announcement comes on the heels of the release of the white paper, *Lessons from British Columbia's "carbon neutral government" mandate*, co-authored by Kim Lau and Hadi Dowlatabadi from the University of British Columbia (UBC). The paper outlines options and recommendations for the province's ongoing development of its pioneering carbon neutral public sector—the first of its kind in North America. For details, visit www.pics.uvic.ca under News Archives and Publications.

Forests, carbon and climate change

As part of BC's Year of Science initiative, PICS and the University of Northern British Columbia (UNBC) hosted three workshops in Prince George, Terrace and Quesnel this spring to highlight the basic processes of a living forest and its important relationship to climate change. Issues discussed included bioenergy, forest sustainability, carbon sequestration and carbon offsets from forestry. For more information, see <http://www.unbc.ca/pics/>.

PICS Climate Change 101 – coming to a screen near you...



This summer brings an exciting first in climate science education with the launch of PICS's online short courses for BC's civil servants and British Columbians. Throwing the old-fashioned textbook approach out the window, Climate Change 101 uses a combination of animation, interviews and click-thru's to engage people on the basic concepts of climate science and how they relate to climate change. With its special emphasis on the BC context for climate change adaptation and mitigation, the courses are truly a local product. But given the global scope of the science, the courses will also be relevant and interesting for an international audience.

Climate Change 101 has four modules, each with several lessons. Module 1, entitled Climate Science, goes live this July. Its goals are:

- to provide an understanding of the scientific basis for changes in Earth's climate, both natural and human-induced;
- to investigate some of the common misconceptions that people may have about global warming;
- to provide an overview of climate change adaptation and mitigation actions being taken or considered in BC and elsewhere;
- to encourage participants to evaluate ways to reduce their carbon footprint at home and at work.

PICS Executive Director Dr. Tom Pedersen and Dr. Francis Zwiers, Director of the Pacific Climate Impacts Consortium (PCIC) provided the overall direction and content for Module 1, with the collaborative support of Environment Canada and the BC Ministry of Environment.

Module 2 (Regional Impacts) and Module 3 (Adaptation) are currently in production and will be released next spring, with Module 4 (Mitigation) being rolled out later next year.

Visiting speakers tour BC campuses

PICS welcomed a number of new guest speakers in March and April, who collectively visited all four partner universities to discuss a range of key climate change issues such as the relationship between sustainability and human rights (Julian Agyeman, Tufts University), human psychology and behaviour change (Sabine Pahl, University of Plymouth), and the underhanded PR tactics of the anti-science campaign (computer scientist John Mashey).

Another speaker visiting UBC only was Sonja Klinsky, a PICS post-doctoral fellow who is doing part of her research at Cambridge University in the UK. With the title "When are the Americans coming...", Klinsky talked about her Western Climate Initiative (WCI) cap and trade system research, addressing two key questions: will the WCI develop into a working trading system and, if so, will linkage with the European Union Emission Trading System be possible? More information on all four speakers and recordings of the Klinsky, Pahl and Mashey presentations are available on the PICS website at www.pics.uvic.ca/events.php

"KIDS Exploring Energy"

Science in Action at Simon Fraser University (SFU) and PICS will start an outreach program for children related to energy conversion, consumption and conservation this coming fall. Children from grades 4 to 7 will have a hands-on opportunity to explore different ways to generate "green" energy using wind, sun and water as a power source.



The energy conversion station at SFU's Science in Action program.

The program will look at topics such as generating electricity from renewable sources, finding out how much energy is required to light different kinds of bulbs while pedaling a bike, and learning about the effects of green house gases on the climate. Some of the program's experimental stations have already been "kid-tested" during the "Green Carnival" event



Demonstrating the greenhouse effect.

at Vancouver's University Highlands Elementary School on May 14, and a pilot workshop at SFU on June 2, where homeschooled children had an opportunity to test the different stations with the help of SFU students. For more information about the program and how to register, schools and other groups can contact Nastenka Calle, PICS SFU Site Coordinator at n_calle@sfu.ca.

PICS supports SFU climate initiative

As part of the Friesen Conference "Growing Old in a changing climate: Exploring the Interface Between Population Aging and Global Warming" organized by the SFU Gerontology Research Centre, PICS sponsored a free public lecture on "Climate Change and Health: Acting to Reduce Risks and Vulnerabilities" by Dr. Carlos Corvalan, Senior Advisor on Risk Assessment and Global Environmental Change from the Pan American Health Organization (PAHO/WHO). Corvalan explained how climate

change will put increasing strains on our healthcare systems and outlined what the international public health sector is doing - and needs to do - to address the problem. For more details, or to watch the archived lecture, visit www.sfu.ca/climatechange.

PICS UBC-SFU lecture series wraps up until fall

April's lecture on Climate Change and its Impacts by UBC's Dr. Phil Austin, Earth and Ocean Sciences, and SFU's Dr. Charmaine Dean, Statistics and Actuarial Sciences, wrapped up a successful first year for the inaugural PICS UBC-SFU lecture series, which has seen a dozen professors from both universities come together at free public venues to share their climate change research results and knowledge with each other and the broader community. Exploring the impact of climate change on fire and rain, Austin and Dean's presentations outlined a trend towards 560 ppm of CO₂ in our atmosphere, the anticipated increased intensity and extension of Canada's fire seasons, and the challenge of sequestering all that extra CO₂.

Earlier in the spring, Dr. Michael Brauer, UBC and PICS program committee member Dr. Tim Takaro, SFU focused their talks on Public Health and Climate Change. For more details of upcoming lectures and to view recordings of past lectures, visit www.pics.uvic.ca/events.php.

A new home for PICS and PCIC

On June 6, PICS and its sister organization, the Pacific Climate Impacts Consortium (PCIC), moved their offices to a joint, new location at University House 1 on the northeast fringe of the campus above Cadboro Bay. The building, originally constructed in 1969 as a residence for former UVic president Bruce Partridge, has been renovated using partially recycled building materials wherever possible.

A suite of energy-efficient features has been retrofitted, including:

- a heat pump and solar roof panels;
- thermal low-E windows and solar shading to the east, west and south windows;
- water-efficient plumbing fixtures;
- vacancy sensors for interior and daylight sensors for exterior lighting;
- multi-level heating and ventilation controls for offices and meeting rooms;
- and sustainable LED lighting fixtures.

In addition, a video-conferencing facility for meetings and presentations will be installed onsite to reduce the carbon footprint associated with air or ground travel, and the parking area is pre-wired for future installation of electric-vehicle charging stations.



University House 1, the new home of PICS and PCIC, is located at the top of Sinclair Hill.

PICS live on Facebook and Twitter

PICS goes social! In an effort to broaden our innovative knowledge network, PICS has taken on the social media world with our new Facebook and Twitter accounts. Through sharing our latest news and promoting events hosted or supported by PICS in this way, we aim to engage a wider community of individuals and groups interested in joining the conversation and promoting action towards climate change solutions. Tweeters and fans can connect with us online:

- on Twitter at <http://twitter.com/PICSCanada>
- on Facebook: search "Pacific Institute for Climate Solutions"

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