

CFCAS News

Canadian Foundation for Climate and Atmospheric Sciences



CALL FOR PROPOSALS - Round 3

CFCAS is pleased to announce its next competition for research grants (<\$200K/year). Projects focusing on Arctic climate, the cryosphere, extreme weather or marine environmental prediction are particularly welcome. Submission deadline: February 15, 2002. See the CFCAS website for details (www.cfcas.org).

Message from the CFCAS Executive Director

Canadians are obsessed with climate: its excesses, its splendours, its impacts, its unpredictability. The exponential increase in greenhouse gas emissions over the last century has led to milder winters, but also to more frequent extreme weather events. The Canadian Foundation for Climate and Atmospheric Sciences is funding research led by university professors. This work will help us understand our changing climate and provide policymakers with the tools they need for sound decisions aimed at mitigating impacts and safeguarding the health and safety of Canadians. The work will also help Canada meet its commitments to the world community, to understand the natural environment better and to provide a basis for reducing greenhouse gas emissions. In the last 18 months, CFCAS has invested over \$25 million in research in key areas. The *CFCAS News* will keep you up to date on funded projects, new opportunities and other issues.

Dawn Conway, Executive Director

Mandate of the CFCAS

To foster scientific research on the climate system, climate change, extreme weather, air quality and marine environmental prediction. This research will strengthen Canada's scientific capacity, improve scientific understanding of processes and predictions, provide relevant science to policy makers, improve understanding of how these challenges affect human health and the natural environment, foster collaboration and interdisciplinary approaches and encourage participation and support of others, including the private sector. The CFCAS supports networks and projects that have a clear scientific focus and that contribute to CFCAS mandate and vision.

Montreal Launch of Research Initiatives on Extreme Weather

On December 6, 2001 several agencies will join forces to sponsor a public seminar on Extreme Weather, at McGill University, Montreal. The event will conclude with the official announcement of the Canadian Weather Research Program, by Environment Canada (Meteorological Service of Canada), the Laboratoire universitaire sur le temps extrême (LUTE), by the Network for computing and mathematical modeling (ncm2) and the McGill University Chair in Extreme Weather.

Gordon McBean, chair of the CFCAS Board of Trustees will announce two CFCAS-funded research networks on extreme weather, aimed at Enhanced short-term Forecasting of Extreme Weather, and Improved Quantitative Precipitation Forecasts.

Funded Projects and Research Programs

Project Grants

Since it was established in February 2000, CFCAS has committed over \$11 million to 41 projects. These projects have benefited from grants of up to \$200,000 a year. Fifteen projects were funded early in 2001; twenty-six more were approved by the Board of Trustees in September 2001. Funding covers the period 2001-2003. The projects are listed on the CFCAS website at www.cfcas.org

CFCAS has committed \$25.3 million to research and training in Canadian universities.

Network Grants

Ten major initiatives (>\$200,000 per year) will receive a total of \$14.3 million for research in the areas of climate, air quality and extreme weather. These focus the efforts of interdisciplinary teams from different universities and agencies, on specific research challenges. Examples follow:

Climate

Climate Variability: Its Causes and Predictability (CLIVAR)

Network Leader: Jacques Derome, Atmospheric and Oceanic Sciences, McGill University

Total: \$3 million (\$1.3 million from each CFCAS and NSERC, \$400,000 from MSC)

This project will produce state-of-the-art seasonal forecasting tools for use by the Canadian Meteorological Centre for operational forecasting. A new ocean model will be developed to clarify how the oceans and atmosphere influence each other, and new analytical tools will be developed to help separate natural variability from anthropogenic causes in global warming.

The Canadian Regional Climate Modelling Network (CRCM)

Network Leader: René Laprise, Département des sciences de la terre et de l'atmosphère, Université du Québec à Montréal (UQAM)

Total: \$1,361,970

A set of interrelated research projects in regional climate modelling (RCM) and analysis will lead to a better understanding of regional processes in the climate system. The projects contribute to Regional Climate Model validation efforts organized by the World Meteorological Organisation.

Modelling of Clouds and Climate Network (MOC2)

Network Leader: Philip Austin, Earth and Ocean Sciences/Geography, University of British Columbia

Total: \$403,000

This network will join a major international effort aimed at better understanding and forecasting the relationship between clouds and climate. The work will include aircraft, satellite and surface observations integrated into computer models. This will result in new representations of cloud processes in the Canadian Global Climate model.

Modelling of Global Chemistry for Climate

Principal Investigator: Theodore Shepherd, Professor of Physics, University of Toronto

Total: \$1,028,855

The project will develop a capability for modelling global chemical climate of the atmosphere, and a corresponding data assimilation capability. This will provide the MSC with data to enhance its climate system model, and provide the MSC and the Canadian Space Agency (CSA) with a data assimilation modelling system particularly suited to the middle atmosphere. These system models do not exist anywhere in the world and the work will open up significant new opportunities for Canadian research in climate science.

Development of a Canadian Global Coupled Carbon Climate Model (GC³M)

Network Leader: Nigel Roulet, Professor of Geography, McGill University

Total: \$1,017,625

The global carbon (C) cycle and climate are intimately related, but the causal mechanisms that result in this relationship have not been fully explained. The objectives of this Network are to develop and test an integrated C cycle model including terrestrial, oceanic and atmospheric components, for inclusion in the Canadian Centre for Climate Modelling and Analysis (CCCma) Coupled General Circulation Model (CGCM).

Canadian Surface Ocean Lower Atmosphere Study (SOLAS)

Network Leader: William L. Miller, Department of Oceanography, Dalhousie University

Total: \$3,237,833 from CFCAS, \$4,377,450 from NSERC, plus other contributions

The Surface Ocean Lower Atmosphere Study (SOLAS) is a major new international research initiative to improve our understanding of marine and atmospheric biogeochemical processes. This will reduce uncertainty associated with prediction of changes in ocean biogeochemistry resulting from global climate change.

Network Grants *(cont'd)*

Air Quality

Multiscale Air Quality Modelling

Network Leader: Jack McConnell, Professor, Earth and Atmospheric Science, York University

Total: \$2,173,000

This network will develop a state-of-the-art on-line atmospheric chemistry and aerosol model, capable of dealing with global, regional and urban air quality issues. The model will serve as a resource for the atmospheric science community, and will also assist the Meteorological Service of Canada and the provincial Ministries of the Environment in making policy decisions related to air quality.

Pacific 2001

Network Leader: Geoff Harris, Professor of Chemistry, York University

Total: \$677,502 over 2 years

Air pollution is a major health consideration for some sectors of the Canadian population and in many regions of the world. This network will contribute to a major federal government study and will lead to a better understanding of the role and behaviour of particulate matter in the atmosphere. Sound scientific results will support the development of public policy related to air quality and to health.

Extreme Weather

Enhanced Short Term Forecasting of Extreme Weather

Network Leader: Isztar Zawadzki, Professor, Atmospheric and Oceanic Sciences, McGill University

Total: \$1,406,200

The costs to society from weather-related disasters has increased detection and warning of impending local weather events. This network is a priority of the Canadian Weather Research Program and is focused on improving the accuracy of short-term forecasting (nowcasting).

Improving Quantitative Precipitation Forecasts of Extreme Weather

Network Leader: Peter Yau, Associate Professor, Atmospheric and Oceanic Sciences, McGill University

Total: \$1,687,990

One of the most important elements to forecast in extreme weather events is the amount and type of precipitation that will fall over a given area in a given time period (quantitative precipitation forecast) (QPF). This research will help answer the questions of when, where, how much and what type of precipitation to expect in extreme weather events.

What's New

- The first CFCAS Annual Report (2000-2001) was released in September 2001 and is posted on the Foundation's website. It highlights activities from the first year of operation and describes research supported by CFCAS, that will ultimately improve the lives of Canadians. The Report has been widely circulated to government ministers and departments, universities and private sector agencies.
- A PowerPoint Presentation on the Foundation is also available on the web at www.cfcas.org. It has been adapted from one given by the Chair of the Board of Trustees, Dr. Gordon McBean, at an Open Forum held during the Canadian Meteorological and Oceanographic Society's 35th Congress in Winnipeg, May 2001.

***The Canada
Customs and
Revenue Agency
(CCRA) recently
granted the
CFCAS status
as a registered
charity, effective
April 2001.***

Evaluation and Reporting

- The CFCAS Secretariat is working with the Centre for Public Management on the preparation of an Evaluation Framework for the Foundation. This will assist it in assessing and reporting its effectiveness in achieving the Foundation's objectives.
- The CFCAS Secretariat has completed its assessment of Annual Progress Reports from the first group of grantees. These describe progress towards research objectives and how grant funds have been spent. Given that only a few months had elapsed since the awards were released, most described start-up activities; a few reported initial results.
- In October, 2001, the Commissioner of the Environment and Sustainable Development of the Office of the Auditor General (OAG) tabled its Annual Report in the House of Commons. CFCAS is named as one of four foundations established to address the challenges of climate change as well as issues such as air and water quality. A total of \$285 million had been allocated by the Federal Government to the various funds and foundations: CFCAS received \$60 million. (See www.oag-bvg.gc.ca/environment).



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Common CV

CFCAS is participating in a multi-agency initiative to develop a computer-based curriculum vitae for submissions to granting agencies. The form will adapt to the needs of different agencies and be 'fillable' on-line. The study, coordinated by the Canadian Institutes of Health Research (CIHR), is expected to lead to a pilot project over the winter, with full implementation in the fall of 2002.

OURANOS

The Quebec government has recently established OURANOS, a consortium of 7 partners under the coordination of the *Ministère de la Sécurité publique*. OURANOS encourages and promotes work in ten theme areas, including climate variability and modelling, extreme weather, air quality, land and water processes and impacts and adaptations. It is oriented to sound public policy.

Appointments

Dr. Edward Lozowski, Professor of Earth and Atmospheric Sciences at the University of Alberta, has been appointed Chair of the CFCAS Grants Review Committee, for 2001-2002. He succeeds Dr. Peter Taylor. The membership of the Grants Review Committee is on the CFCAS website.

Climate Funding

- The Foundation for Sustainable Development Technology in Canada (FSDTC) has announced funding opportunities for the development and demonstration of sustainable development technologies addressing climate change and clean air. Visit the FSDTC website at <http://www.fsdtc.ca>
- To encourage training in marine, freshwater, fisheries and aquaculture science, the Department of Fisheries and Oceans (DFO) has developed an Academic Science Subvention Program. Deadline for applications is December 1, 2001. Contact Dr. Sherry Niven, Bedford Institute of Oceanography, DFO, nivens@mar.dfo-mpo.gc.ca. Tel: 902-426-3246, Fax: 902-426-6695
- The Canadian International Development Agency (CIDA) supports initiatives that combat the causes and effects of climate change in Southern Europe and Central Asia while promoting sustainable development. For information on the South Europe and Central Asia Climate Change Support Fund, visit CIDA's website at <http://www.acdi-cida.gc.ca/europe-e.htm>

Climate News

- On October 23, 2001 the European Commission (EC) adopted a major package of initiatives to combat climate change. It comprises a proposal for the EC to ratify the Kyoto Protocol; a draft Directive on greenhouse gas emission trading within the EU; and a Communication setting out further measures for reducing greenhouse gas emissions. The EU is committed to ratification of the Kyoto Protocol and meeting its 8% emission target. It has a series of 10 actions to further reduce greenhouse gas emissions (see the European Commission website http://europa.eu.int/comm/index_en.htm)
- The Global Climate Observing System Secretariat, jointly with the WMO and the Organization of American States, has announced a regional workshop: Observing Climate from Weather Extremes to Coral Reefs. It will take place in San Jose, Costa Rica, March 19–21, 2002. The purpose is to build partnerships with international and regional partner organizations including the Inter-American Institute for Global Change Research, the Caribbean Meteorological Organization, the *Comite Regional de Recursos Hidraulicos*, the Caribbean Institute for Meteorology and Hydrology, as well as other bodies.