



Memo: 001/2014

Londrina, January 03, 2014

The National Council of Technological and Scientific Development (CNPq) of Brazil has awarded nearly US\$ 188,000.00 to the Air Pollution and Atmospheric Processes Group (www.atmospher.org), of the Federal University of Technology - Paraná.

The three-year award is for the project "*Environmental concentration and human exposition to short-lived climatic pollutants*" with Admir Créso Targino, Professor of Applied Physics, as the lead principal investigator. The award will contribute to the costs of research equipment, materials and research supplies, travel to scientific meetings and stipends. The institutions collaborating on the effort include Dalhousie University [Canada], University of Canterbury [New Zealand], Federal University of Paraná and other national universities.

The project will monitor the concentration of short-lived atmospheric pollutants that affect both climate and human health, with focus on black carbon and ozone. Other air pollution indicators, such as particulate matter mass and particle number, will also be monitored and their spatial concentrations mapped out.

The project will utilize a novel approach in which bicycles will be adapted to house portable air pollution monitoring equipments. Five platforms will conduct measurements in Londrina –a 500-thousand inhabitant city in the state of Paraná, southern Brazil. The city, *albeit* mid-sized for Brazilians standards, is frequently subject to high levels of atmospheric pollutants due to local sources (traffic, industry and soil resuspension) and transboundary transport (wildfire smoke from the Amazon, *Cerrado* and other biomes). The experiments will be streamlined to specifically address questions pertaining to the concentration of pollutants at hotspots across the city and to assess the dose and exposure of the population to these pollutants.

This project is well aligned with other worldwide initiatives, such as the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants (CCAC), which support the synergy action to treat short-lived pollutants as a collective challenge, and to address global warming and air quality simultaneously. In addition to the large environmental impact, the multidisciplinary nature of this project can have significant

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broader impact on society, public health and urban engineering. It will integrate efforts and expertise of different groups which should offer actions for decision makers to reduce short-lived atmospheric pollutants. Additionally, the collaboration amongst the groups will facilitate transfer of knowledge across disciplines and human capital formation. The first intensive measurement campaign is expected to start in July 2014.

Contributing scientists:

Dr Admir Créso Targino: Assistant Professor (Full Tenure)
Federal University of Technology – Paraná (Brazil)
PhD: Atmospheric Sciences and Oceanography, Stockholm University, *Sweden*.

Dr Jorge Alberto Martins: Assistant Professor (Full Tenure)
Federal University of Technology – Paraná (Brazil)
PhD: Meteorology, University of São Paulo, *Brazil*.

Dr Leila D. Martins: Assistant Professor (Full Tenure)
Federal University of Technology – Paraná (Brazil)
PhD: Meteorology, University of São Paulo, *Brazil*.

Dr Luiz Felipe Silva: Assistant Professor (Full Tenure)
Federal University of Itajubá (Brazil).
PhD: Public Health, University of São Paulo, *Brazil*.

Dr Marcelo de Paula Corrêa: Assistant Professor (Full Tenure)
Federal University of Itajubá (Brazil).
PhD: Meteorology, University of São Paulo, *Brazil*.

Dr Mark Gibson: Assistant Professor
Dalhousie University, *Canada*.
PhD: Civil and Environmental Engineering, University of Strathclyde, *UK*.

Dr Maurício Moreira dos Santos: Assistant Professor (Full Tenure)
Federal University of Technology – Paraná (Brazil)
PhD: Geosciences and Environment, *Universidade Estadual Paulista Júlio de Mesquita Filho, Brazil*.

Dr Patricia Krecl: Assistant Professor (Full Tenure)
Federal University of Technology – Paraná (Brazil)
PhD: Applied Environmental Sciences, Stockholm University, *Sweden*.

Dr Ricardo Moreton Godoi: Assistant Professor (Full Tenure)
Federal University of Paraná (Brazil)
PhD: Physical Chemistry, *Universidade Estadual Paulista Júlio de Mesquita Filho, Brazil*.

Dr Woodrow Pattinson:
PhD: Environmental Science
University of Canterbury, *New Zealand*.

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The contributing institutions will provide the following equipments:

Federal University of Technology (Brazil)

PM₁₀ and PM_{2.5} samplers
7-wavelength aethalometer
Air temperature and air humidity dataloggers

Dr Admir Créso Targino

Meteorological station

Dr Jorge Alberto Martins

Condensation particle counter (CPC)

Dr Patricia Krecl

PM₁₀ and PM_{2.5} samplers

Dr Leila D. Martins

Federal University of Paraná (Brazil)

7-wavelength aethalometer
Gravimetric analyses
Ion chromatography

Dr Ricardo M. Godoi

Federal University of Itajubá (Brazil)

Portable nephelometer
Portable ozone analyzer
Photometer
UV radiometers

Dr Marcelo Corrêa

Dalhousie University (Canada)

Ogawa passive O₃ samplers
Ogawa passive NO₂/SO₂ samplers
Passive VOC species samplers
Fine and coarse particle counters

Dr Mark Gibson

University of Canterbury (New Zealand)

Portable condensation particle counters (CPC's)

Dr Woodrow Pattinson

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