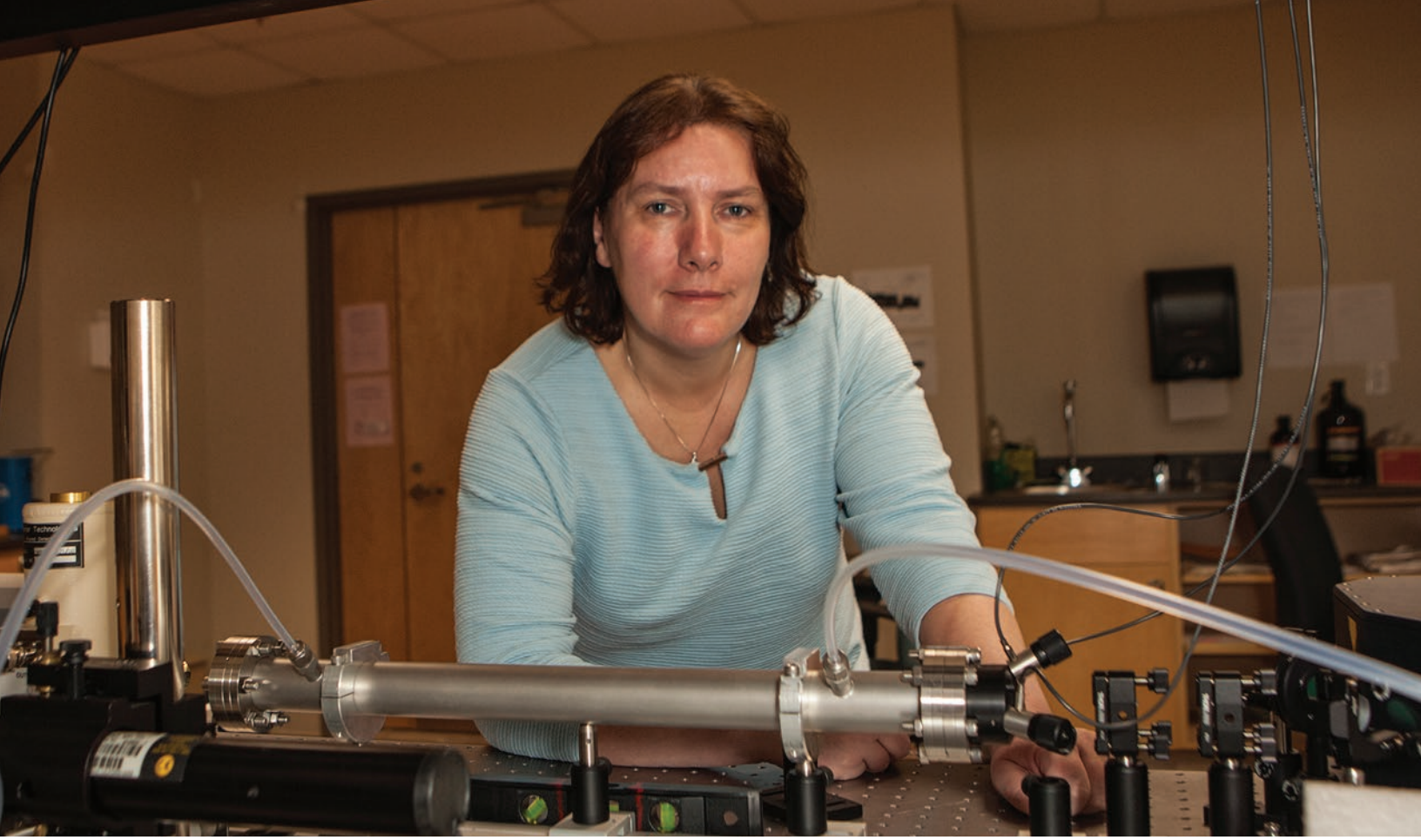

STFX EXPERIMENTAL PHYSICIST IS MAKING AN IMPORTANT CONTRIBUTION TO INTERNATIONAL EFFORTS TO UNDERSTAND MOLECULES OF ATMOSPHERIC INTEREST AND THE ROLE THEY PLAY IN CLIMATE CHANGE

Dr. Karine Le Bris's state-of-the-art facility, the Laser Spectroscopy Laboratory, has been built to undertake her research program, dedicated to the study of trace molecules by laser spectroscopy. The laboratory was mostly funded by the Canadian Foundation for Innovation (CFI) – Leader Opportunity Funds (now renamed John R. Evans Leaders Fund), the Nova Scotia Research and Innovation Trust (NSRIT) matching funds, and a NSERC Discovery Grant. In total, she has received over $422,000 in funding to establish this laboratory. "Climate change and its consequences are one of the most important issues humanity will have to face in the coming decades. Reliable modeling of climate change can only come from an accurate knowledge of the composition of the atmosphere," she explains. "Over the last 20 years, an unprecedented number of satellite, balloon and ground-based measurement programs have been developed to sound the atmosphere using optical spectroscopy. "However, the current missions face two main issues: the lack of sensitive portable instruments for in-situ spectral acquisitions and the imperfect knowledge we have regarding the spectroscopic signature of molecules present in the atmosphere." Dr. Le Bris says the main goals of her research are to develop portable spectroscopic tools for in-situ detection of atmospheric trace gases, and to fingerprint larger molecules of atmospheric importance so they can be detected and their impacts on climate taken into account. Dr. Le Bris' team is currently composed of an experienced postdoctoral fellow, **Dr. Mourad Roudjane,** who is working on the creation of a new mid-infrared laser trace gas sensor, and a second-year physics student, **Matthew Martell,** who is the recipient of a 2016 NSERC USRA. The research team's current targets are larger molecules containing chlorine and fluorine which have high global warming potential. The second aspect of the program is to create a new trace gas sensor to detect these molecules in the atmosphere, to measure their impacts on the environment. They have also plan to expand this technique to the medical field. "Right now we're working to verify the sensibility of the technique," she says. "We really want to create a device that is useful in the community."