Scientists develop remote sensor for studying atmospheric effects of wildfire and volcano eruptions

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Observers of wildfire and volcano eruptions have a new tool for studying their atmospheric effects, and they have two University of Alaska Fairbanks researchers to credit for it.

Scenarios Network for Alaska and Arctic Planning research faculty member Keith Cunningham and project partner Peter Webley of the UAF Geophysical Institute have received a patent for the tool, called Validating and Calibrating a Forecast Model.

The patented invention allows for critical information to be gathered on aerosols, such as smoke and ash. It is in large part the result of Cunningham's work with the federal Small Business Innovation Research program and the U.S. Air Force Research Laboratory.

"This UAF patent is about making near real-time decisions with a novel remote-sensing technique," explained Cunningham. "[A] 'stereo-look' at an aerosol or particle cloud allows the reconstruction of the cloud's height and structure."

Obtaining this information enables researchers to validate the accuracy of particle forecasting and calibrate subsequent forecasting models in as little as 15 minutes when the next geosynchronous satellite image is available.

During his time with SBIR, Cunningham and his colleagues pursued a patent for their validating and calibrating techniques, in order to protect their intellectual property and to advance the invention.

"The role of a patent is to protect the invention as it is commercialized," said Cunningham. "Without a solid business plan and the goal of protecting the patent from infringement, there is not a business opportunity."

Cunningham will continue to develop the invention with the Air Force lab.

More information: For more information on the business opportunity and UAF's first spin-off company, visit: www.vadapt.net/

Provided by University of Alaska Fairbanks