

Sixth Wave Files Patent Application for Rapid Detection of Emerging Viral Outbreaks such as COVID-19

- *Proposed Rapid Detection Test for viral outbreaks such as COVID-19 is based on previously developed Molecularly Imprinted Polymer platform.*
- *Testing platform has the objective of detecting the presence of viruses without relying on the existence of antibodies, which can take weeks to be present in the body.*
- *Testing platform could be rapidly adopted to test for both new viruses and mutations of previously discovered viruses.*
- *Potential for colorimetric response could provide indication as to the presence of virus within minutes.*
- *Team previously developed Explosive Detection Wipes, which produced colorimetric changes within 30 seconds upon contact with bomb making materials.*

Vancouver, British Columbia--(Newsfile Corp. - April 3, 2020) - **Sixth Wave Innovations Inc. (CSE: SIXW) (OTC Pink: ATURF) (FSE: AHUH) ("Sixth Wave" or the "Company")** is pleased to announce that it has filed Patent Application Number 63000977 - The Use of Molecularly Imprinted Polymers for the Rapid Detection of Emerging Viral Outbreaks, such as SARS-CoV-2 virus responsible for COVID-19, with the United States Patent and Trademark Office (the "**Accelerated Detection MIPs**" or "**AMIPs**").

COVID-19 & the Need for Rapid Diagnostics

Viral pandemics such as COVID-19 are a rapidly emerging threat to global security and economic stability. Unlike bacterial infections which have a wide range of developed antibiotic therapies, new viral infections have very few pre-existing treatments. The World Health Organization has correspondingly noted a public health emergency and an urgent need for rapid diagnostics, vaccines and therapeutics to detect, prevent and contain the COVID-19 virus. The success of these remediation efforts will depend largely upon early detection, proactive and preventive measures, attempting to contain the rate of viral growth until customized treatments can be developed and made available.

One of the primary factors leading to the outbreak of COVID-19 virus has been the relative lack of rapid diagnostic tools. The development of effective early stage diagnostics for COVID-19 has consumed valuable time in which lives are at stake, with significant issues remaining regarding access to testing several months after the virus was first identified. This breakdown and delay in testing capacity has resulted in a failed containment effort, conservatively estimated to have resulted in hundreds of thousands of otherwise avoidable infections. With improved preventive strategies, including early response and testing capabilities, the rapid rate of viral expansion and the shortfall of medical supplies now being experienced can be more effectively contained, managed and ameliorated.

Rapid Diagnostic Technologies

A promising area of preventive strategies is the use of Rapid Diagnostic Technologies ("**RDTs**"), tools designed to quickly and accurately diagnose the active virus. Many forms of RDT utilize Polymerase Chain Reaction ("**PCR**") methodologies, processes which can require highly trained laboratory staff and processing times ranging from hours to days, thereby offsetting their efficacy as rapid response diagnostic tools. Another promising RDT for the diagnosis of COVID-19 is Immunoassay Technology ("**IAT**"), a highly effective and easy to use diagnostic platform. However, IAT relies on the detection of antigens or antibodies which can take days or weeks to develop within the body, with the result that a person can be contagious and spreading the virus prior to detection.

Sixth Wave's patent application contemplates the development of a flexible platform for the rapid deployment of RDTs for new viral threats. This AMIPs technology could have all of the advantages of traditional PCR and IAT diagnostics, with the potential to be developed, deployed and scaled in a fraction of the time.

The Sixth Wave Solution

This proposed AMIPs device would generate an instant colorimetric response, or change in color, in order to indicate the presence of COVID-19 and other viruses. This visual confirmation capability is a feature of other prior Sixth Wave technologies, most notably the Company's explosives detection wipes and bacterial pathogen detection swabs.

The AMIPs technology proposes a flexible and scalable development platform, able to adapt to the demands of detecting constantly evolving viral strains beyond COVID-19. To accomplish this, Sixth Wave plans to build a database of MIPs, prepared using viral surrogates and/or inactive strains, and based on the general shape, size and morphology of generic classes of known viruses (the "**AMIPs Library**"). This database will comprise a reference inventory, ready for immediate deployment in the screening of new or emerging viral threats, and minimizing the response time required to issue new diagnostics.

The patent application draws significantly upon Sixth Wave's prior experience in Molecular Imprinted Polymers ("**MIPs**"). The selective binding capabilities of MIPs are well documented in literature and have even been referred to as "plastic antibodies". Sixth Wave has a proven record in the detection and binding of target analytes using MIP technology. The Company has successfully developed a similar MIPs-based rapid detection test for improvised explosives (the "**Explosive Detection Wipes**" or "**EDW**"). The EDW platform is highly effective and simple to use, providing fast colorimetric indication of 36 target analytes, all while using a single-use wipe. As with the virus detection platform, accuracy in explosives detection is paramount, with lives at

stake, and the technology has been noted for delivering zero false positives during field use.

"Now more than ever, the reality of an interconnected world means there is a desperate need to quickly identify and stem the tide of emerging pandemic outbreaks," said Dr. Jonathan Gluckman, President & CEO of Sixth Wave. "Rapid detection, the ability to instantly assess the threat of viral contact, and tools of early intervention are crucial to the containment of new viruses. We hope this technology will revolutionize how we get ahead of pandemics like COVID-19 and other future novel viruses, preventing their spread and mitigating the social and economic losses."

The AMIPs Advantage

The proposed AMIPs platform uses a branch of nanotechnology known as MIPs, a versatile materials science which can be engineered into many physical configurations, including adherence to a wipe, suspension in an assay, or affixed to a membrane for lateral flow testing. The proposed testing device can be envisioned as a cartridge-type system where the format, detection method and sampling/detection process is the same for all threats. The interchangeable component would be the molecular recognition chemistry which would be unique to each new threat.

This platform prospectively offers a number of advantages over existing methods of viral detection and containment. These include:

(i) Rapid Deployment - The AMIPs system will be designed for rapid response and to be the first diagnostic test available for a new viral outbreak. Based on the Company's prior experience in MIPs formulations, the development cycle of any new AMIPs product will prospectively be less than 30 days, from identification of a new viral threat to an AMIPs detection product in the hands of front line healthcare providers. The format of the rapidly deployable AMIPs is a multi-welled micropipette dish with Sixth Wave's unique viral MIPs coated on the bottom of the wells. This cartridge design would make it possible to screen against multiple classes of viruses with the flexibility to use several known off the shelf detection chemistries for the colorimetric response.

(ii) Compatible with Multiple Target Analytes - With the AMIPs system, Sixth Wave proposes to directly detect viral particles. Further, the AMIPs platform is planned to be compatible with detecting other components unique to a particular virus such as DNA, RNA, proteins, small molecules, and antibodies. This powerful and comprehensive platform would give scientists multiple pathways to detect a virus to give the best performance and diagnostic capabilities.

(iii) Fast, Accurate & Easy to Use - The second potential platform for the AMIPs technology would be lateral flow tests, similar to using a pregnancy test. The colorimetric response would allow for quick, qualitative analysis without mixing reagents, complex machines, or even power requirements for a fast, easy-to-use, and reliable response that requires little, if any, training. First responders, caregivers, and even the patients themselves, could potentially perform the test and receive results in minutes.

(iv) Durable, Affordable & Mass Producible - MIPs are based on a synthetic polymer, allowing for extended shelf life, minimal storage and handling requirements, and less sensitivity to temperature and light degradation relative to antibodies used in traditional IAT products. The MIPs formulations could be applied to several inexpensive consumables to provide low cost, mass production pathways for real-time qualitative or quantitative analysis, depending on device format.

(v) Flexible, Scalable & Adaptable - The AMIPs platform would allow for rapid reconfiguration, including the testing of any bodily fluid containing the virus, screening for multiple infections in just one test, and even testing surfaces to reduce the spread of contamination. The technology proposes to detect whole classes of viruses, allowing researchers to deploy the diagnostics without actually cultivating antigens or antibodies specific to a particular new virus strain. The AMIPs Library anticipates other viral threats and prepares for rapid and responsive development of new products based on this existing platform.

About the AMIPs Library

Adapted from other Sixth Wave commercial applications, AMIPs relies on MIP methodologies to identify and trap specific analytes. Formed with a 3D mold of the targeted analyte, MIPs can be applied to generate a variety of effective sensors, each with the ability to display a visual confirmation. For a viral threat such as COVID-19, recognition of the intact virus would be the most efficient process timewise using a MIP that recognizes and binds to the virus.

However, in anticipation of forthcoming new viral strains, clearly there will be no time to develop a novel MIP after a new outbreak has occurred. To avoid such delays and develop new diagnostic products on minimal turnaround, the Company plans to develop the AMIPs Library as a database of MIPs based on the general shape, size, and morphology of generic classes of viruses. In this way, future delays in diagnostics are avoided, with the potential for new generations of interchangeable AMIPs cartridges or wipes using the same physical format, detection method, and sampling process as prior generations.

The ultimate goal is a flexible platform that can be continuously altered to meet the demands of constantly evolving viral strains. The AMIPs inventory would be proactive, readily available for screening against plausible new threats. The most selective MIP for any emergent virus would be incorporated into a previously defined delivery platform. The chemical manufacturing process would be known, and direct scale-up to manufacture could be initiated immediately and applied to kits amenable to mass production.

About Sixth Wave

Sixth Wave is a development stage nanotechnology company with patented technologies that focus on extraction and detection

of target substances at the molecular level using highly specialized molecularly imprinted polymers (MIPs). The Company is in the process of commercializing its Affinity™ cannabinoid purification system, as well as, IXOS®, a line of extraction polymers for the gold mining industry.

Sixth Wave can design, develop and commercialize MIP solutions across a broad spectrum of industries. The company is focused on nanotechnology architectures that are highly relevant for detection and separation of viruses, biogenic amines and other pathogens, for which the Company has products at various stages of development.

For more information about Sixth Wave, please visit our web site at: www.sixthwave.com.

ON BEHALF OF THE BOARD OF DIRECTORS

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Cautionary Notes

This press release includes certain statements that may be deemed "forward-looking statements" including statements regarding the planned features, capacity and performance of the AMIPs technology. All statements in this release, other than statements of historical facts, that address future events or developments that the Company expects, are forward-looking statements. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance, and actual events or developments may differ materially from those in forward-looking statements. Such forward-looking statements necessarily involve known and unknown risks and uncertainties, which may cause the Company's actual performance and financial results in future periods to differ materially from any projections of future performance or results expressed or implied by such forward-looking statements. In particular, successful development and commercialization of the AMIPs technology are subject the risk that the AMIPs technology may not prove to be successful in detecting virus targets effectively or at all, uncertainty of medical product development, uncertainty of timing or availability of required regulatory approvals, lack of track record of developing products for medical applications and the need for additional capital to carry out product development activities. The value of any products ultimately developed could be negatively impacted if the patent is not granted.



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