

PRINT- Developing an app to alert health care pros to misinformation on social media

University of Illinois sociology professor Kevin Leicht, PhD, recalls a time during the COVID-19 pandemic when during a conversation, someone insisted only six people had died from the highly-infectious and rapidly-circulating virus. It was clear disinformation was driving people to doubt the potential deadly nature of the virus.

But even before the pandemic, researchers at the University of Illinois in Urbana-Champaign (UIUC) had begun work on researching the spread of medical misinformation. Leicht, who is also science team lead at the Chicago-based [Discovery Partners Institute](#) (DPI), is co-leading work funded by DPI and a more than \$100,000 [Jump ARCHES](#) newly-awarded grant to develop a software application for health care professionals to receive real-time alerts about misinformation on social media. The project builds on [misinformation research](#) and past National Science Foundation and Jump ARCHES-funded efforts to identify the spread of misinformation about COVID-19 and other debunked medical research.

Leicht says he and fellow researchers investigated what was available to identify and prevent the spread of bad information on social media. Colleagues were a bit surprised there wasn't a more robust and commercially-available software platform. But, Leicht says he often reminds his team that research and development is usually more difficult than anyone anticipates.

"If this were easy, somebody would have done it already," he says, laughing. "We were both surprised nobody tried to have done it. And then when we got into it. 'Wow, it's really difficult.'"

Leicht points out that social media platforms don't want to be in the content-identification and moderation business because it is so complex, and as in the case of Twitter, is also seen as quelling free speech.

Right now, health care providers are limited in their ability to answer patients' questions or to counter misinformation by searching fact-checking websites such as [snopes.com](#) or [factcheck.org](#). Leicht and his colleagues are using natural language processing, machine learning, data mining, specific information filters and retrieval methods that expand and automate the effort to identify inaccurate health information trending on social media.

"What our project actually does is take not only the pre-existing fact-checked data and query it all in one place, it brings it forward in a user-friendly fashion. But then it's also trying to come up with a way of adding to this data in a way that's faster than having a human fact checker just scan the web all the time, looking for what the new piece of misinformation is."

Leicht says computer science and data expertise will be leveraged with what social scientists know about how cultural and political fragmentation impact the spread of misinformation and how effective communication can become an antidote.

Co-lead investigator Mary Stapel, MD, is Community Care lead physician for OSF HealthCare Saint Francis Medical Center and assistant program director for the combined Internal Medicine-Pediatrics Residency at the University of Illinois College of Medicine Peoria (UICOMP). Dr. Stapel says an innovative software application could make a significant difference, especially if alerts are easily available within software programs clinicians use every day.

Many community health nurses and digitally-enabled health care workers would also find the real-time misinformation alerts helpful. Those individuals work to build trust, particularly with those who have suffered past trauma or unequal treatment in their experience with the health care system. Dr. Stapel says community-based organizations also engage in "trust transfers," when they invite health care professionals to educate their clients and work collaboratively to identify the source of misinformation and publicly counter it.

The alerts could allow organizations to stop bad information from going viral.

"If we can even get ahead of that – know what information is circulating and start feeding out more accurate information ahead of time through our community partners; that really could be a game changer when we're thinking about things like pandemics and infectious disease," says Dr. Stapel.

During the height of the COVID-19 pandemic, Dr. Stapel says she learned that the problem of medical misinformation impacts everyone, regardless of their education level or other socio-economic factors.

"There was an interesting turn during the pandemic, where after education – large-scale campaigns and initiatives were put out around vaccination; there actually was sort of a flip to where communities of color, lower socio-economic communities were more vaccinated than upper class, more predominantly white communities so I really think it is across the spectrum."

Leicht says misinformation challenges many computer science and information mining techniques due to the way it changes quickly and spreads between languages and countries. It also requires human interpretation of the content identified and categorized through artificial intelligence.

"Having humans curate that a little bit ... you have content experts that look at that and say, 'Is this dangerous or is it not? Is this trending, is it not?' And then figuring out a way to deliver that to the final customer in a way that requires as little inner interface by them as we can possibly get away with."

Leicht thinks it'll take two years to get the software application completed. Researchers believe there is demand for what they're creating. Already they have an industrial, non-profit software development partner, [Meedan Labs](#), which creates open-source tools for creating and sharing context on digital media through verification, annotation, archival and translation services. The Discovery Partners Institute will also be involved in making the product commercially available not only for health care providers, but eventually for patients via electronic medical portals such as OSF MyChart.