

## Science News

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### Society is rejecting facts; medical researchers can help

*Date:* October 16, 2019

*Source:* Florida Atlantic University

*Summary:* Anecdotes, fake news and social media have created a skeptical and misinformed public who is rejecting the facts. A commentary says that medical researchers must help the public understand the rigorous process of science and help them to discern an anecdote from peer-reviewed scientific results. The best way to do this? By continuing to ensure integrity, rigor, reproducibility and replication of their science and to earn the public's trust by being morally responsible and completely free of any influences.

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One study says coffee is good for you, while another study says that it's not. They're both right, within context. This dichotomy together with an environment of distrust spurred by anecdotes, fake news, and to a large extent, social media, has created a skeptical and misinformed public. As a result, researchers from Florida Atlantic University's Schmidt College of Medicine and collaborators say society is rejecting the facts. Now more than ever, medical researchers must help the public understand the rigorous process of science, which has been around for thousands of years. In return, the public has to pay attention, realize that one size doesn't fit all, and understand that the answers are not just black or white. Lives are depending on it.

In an article published in the *American Journal of Medicine*, the researchers highlight opportunities for academic institutions to achieve and maintain research integrity, which encompasses accountability for all scientific and financial issues, including human subjects' and animal protections, investigator accountability, grant submission, design, conduct, analyses, and interpretation of findings, oversight of colleagues and students, environmental health and safety, among others. Research integrity focuses on the many positive attributes that should be sought and maintained by academic institutions as well as their faculty, staff, and trainees. This includes transparency, rigor, and reproducibility.

The best way for medical researchers to meet this challenge is by continuing to ensure integrity, rigor, reproducibility and replication of their science and to earn the public's trust by being morally responsible and completely free of any influences. Medical researchers have a passion for truth and discovery, therefore, integrity and trust are essential attributes.

"The reason that the public has lost trust and confidence in science is multifaceted and complicated," said Janet Robishaw, Ph.D., senior author, senior associate dean for research, and chair of the Department of Biomedical Science in FAU's Schmidt College of Medicine, and a member of the FAU Brain Institute (I-BRAIN), one of the University's four research pillars. "One of the main reasons is anecdotal stories, which can be very powerful, and are being given too much weight. There's so much news coming out from so many sources including social media. That's why it's imperative for the public to discern an anecdote from scientific results in a peer-reviewed journal. This is how the premise that vaccinations cause autism evolved along with fabricated results that pushed the anti-vaccination movement."

Robishaw and corresponding author Charles H. Hennekens, M.D., Dr.PH, first Sir Richard Doll Professor and senior academic advisor in FAU's Schmidt College of Medicine, stress that research integrity starts with investigators who share the guiding principles of honesty, openness, and accountability and who provide scientific and ethical mentorship to their trainees. As researchers compete for increasingly limited resources and face growing challenges with evolving technologies, broad consensus is required across the research enterprise, including funding agencies, medical journals as well as all academic institutions, to address these increasingly major clinical, ethical and legal challenges.

"Our common goal should be to return public trust in our research enterprise, which has done so much good for so many," said Robishaw. "The more we can do as scientists to promote our guiding principles of rigor, transparency, honesty and reproducibility and to provide the best evidence possible and get people to understand them, the greater the likelihood that they will listen to the message and follow it."

Among the opportunities the authors provide for enhancing research integrity include identifying the best benchmarking practices, establishing a research compliance infrastructure and implementing a quality assurance plan. These priorities should include assessing the research climate, developing policies and responsibilities for ethics investigations, and providing a process for resolution of formal disputes. In addition, establishing lists of independent experts to conduct periodic reviews of institutional procedures could be helpful. Reinforcing existing regulatory policies that include emails regarding grant routing and regulatory policies, and providing both formal and informal training to faculty, staff, and trainees are other suggestions the authors provide.

"We should not allow research misconduct committed by a very small minority of researchers to detract from the growing focus on efforts to improve the overall quality of the research process carried out by the vast majority," said Hennekens. "I continue to believe that the overwhelming majority of researchers strive for and achieve scientific excellence and research integrity."

In conclusion, the authors, which include David L. DeMets, Ph.D., professor emeritus, University of Wisconsin School of Medicine and Public Health; Sarah K. Wood, M.D., senior associate dean for medical education, and Phillip Boiselle, M.D., dean, both in FAU's Schmidt College of Medicine, emphasize that research integrity requires synchronicity and collaboration between as well as within all academic institutions.

"If we fail to maintain research integrity we will lose public trust and it will lead to avoidable consequences of substantial penalties, financial and otherwise, adverse publicity and reputational damage," said Robishaw. "Scientists must strive to self-regulate and earn public trust to advance health."

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### Story Source:

Materials provided by **Florida Atlantic University**. Original written by Gisele Galoustian. *Note: Content may be edited for style and length.*

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#### Journal Reference:

1. Article in Press: Accepted Manuscript Janet D. Robishaw, David L. DeMets, Sarah K. Wood, Phillip M. Boiselle and Charles H. Hennekens. **Establishing and Maintaining Research Integrity at Academic Institutions: Challenges and Opportunities**. *American Journal of Medicine*, 2019
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Florida Atlantic University. "Society is rejecting facts; medical researchers can help." ScienceDaily. ScienceDaily, 16 October 2019. <[www.sciencedaily.com/releases/2019/10/191016094917.htm](http://www.sciencedaily.com/releases/2019/10/191016094917.htm)>.

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