



Research Proposal Secures \$75,000 Queen's Wicked Ideas Funding

By Queen's Psychology
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Congratulations to Queen's Psychology's **Dr. Jason Gallivan** and **Dr. Anita Tusche** and their research team members on their success in the recent Queen's *Wicked Ideas* competition. The Wicked Ideas Competition is a Vice-Principal Research initiative to fund and support research collaboration and excellence.

According to the [Queen's VPR Wicked Ideas website](#), "Wicked Problems are issues so complex and dependent on so many factors that it is hard to grasp what exactly the problem is, or how to tackle it. Wicked Ideas are needed to solve these problems, and demand the input of multiple disciplines with relevant practical expertise. This competition will fund Wicked Ideas that respond to local, national and global challenges by supporting the formation of research teams that offer the expertise and perspectives needed to tackle these challenges."

The Psychology researchers' project entitled, *Charting the neurobiology of social distancing: Exploring the causal effects of social isolation on the brain and the impact of staying digitally connected 'online'*, was selected for funding in the amount of \$75,000. Gallivan and Tusche made the decision to submit their proposal to *Wicked Ideas* hoping to obtain pilot funding for their initial project, in turn positioning them to apply for many other funding opportunities.

"Humans are innately social creatures. Consequently, social isolation has a devastating impact on our health and longevity. Prior studies show that the effects of social isolation

are far-reaching, widely impacting on immune, hormonal, and gut microbiome function, as well as higher-order brain systems”, explains Dr. Gallivan, on speaking to the potential impact of ‘social distancing’ measures on vulnerable populations. “Though recent work has begun to demonstrate links between these various systems (e.g., how stress hormones can impact immune function), studies of social isolation have tended to examine these systems independently from one another, resulting in an incomplete picture of how isolation might change our neurobiology.”

“Further complicating this picture”, says Dr. Tusche, “is that the digital revolution over the last two decades has fundamentally changed the nature of human social connectedness. Social networks formed ‘online’ can now enrich – or even replace – ‘offline’ social interactions in the real-world. Digital apps like Zoom, for example, have changed the ways in which friends and family communicate, doctors treat patients (Telemedicine), teachers educate children (Online Distance Learning), and how co-workers collaborate. In the new era of ‘social distancing’, the value of this digital technology would seem indisputable. *Yet, does this digital connectedness actually protect us against the adverse effects of social isolation?* This is an important question that our research team hopes to answer with this Wicked Ideas funding.”

In their project, the researchers will combine measures of behaviour, hormone and immune function, gut microbiome diversity and whole-brain neuroimaging data to examine the impact of social deprivation at multiple biological levels and directly test the extent to which online social connectedness (face-to-face video chat) actually confers neuroprotective benefits for its users.

“This work could have the potential to transform our understanding of the short- and longer-term consequences of social deprivation”, Dr. Gallivan adds. “And it may have implications for the use of digital technology applications such as remote education, and social policy such as those concerning vulnerable populations with limited access to digital resources.

Dr. Gallivan says much of the initial \$75,000 will go towards a brain-imaging portion of their study.

“This study is completely different from anything Anita or I have done, which makes it exciting for the both of us”, Dr. Gallivan concludes. “This is the very first step, and we are planning for a long line of different studies in this area”.