

INTERVIEW

WITH DR. KATIE MOISSE

AN INSIDE LOOK ON SCIENCE COMMUNICATION

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ABSTRACT

Science communication is an emerging field that consists of a multitude of different career options, such as journalism, storytelling, and multimedia production. At its core, the field of science communication represents the bridge between scientists and the general public. Experts in this profession are concerned with how the complexities of scientific research can be presented to all audiences in ways that are engaging, comprehensible, and relevant. Today, innovative scientists continue to push the boundaries of knowledge and they are supported by science communicators who help to raise awareness and advocate for the research. Despite the fundamental role that these experts play, many people are unaware of the field of science communication and the vast array of career opportunities that it offers. The purpose of this interview is to shed light on science communication and to explore the associated skills, careers, and growth opportunities.



Dr. Katie Moisse, Ph.D., M.Sc., M.Sc.

Dr. Katie Moisse, an Assistant Professor in the School of Interdisciplinary Science at McMaster University, is an expert in the field of science communication. Since her appointment in January 2018, she has taught various undergraduate courses pertaining to science communication, including Global Health and Human Disease, as well as Science and Storytelling. Additionally, Dr. Moisse has four years of experience as a Digital Health Editor for ABC News, in which she covered various health stories, such as the Ebola Outbreak in 2014 and the aftermath of Hurricane Sandy in 2012. The following interview provides an insight to Dr. Moisse's experiences and an inside-look on science communication.

► How were you introduced to the field of science communication and what motivated you to pursue a career in this field?

My interest in science communication developed gradually, over time; I knew that I enjoyed learning about a broad range of scientific topics and communicating with researchers in a diverse array of fields. I was also intrigued by the unique roles that science communicators play, in that they are able to interpret the public's viewpoint on various scientific paradigms and discoveries.

Initially, I was completing my Ph.D. in Pathology, specifically focusing on Amyotrophic Lateral Sclerosis (ALS) at Western University. Following my experiences with collecting and analyzing data in research-based settings, I realized my affinity for the storytelling aspect of science by considering how data can be presented in order to create interesting narratives. In addition, I enjoyed presenting my findings to different audiences in unique settings, such as conferences or meetings. I learned more about science communication from various individuals in the field, including colleagues at Columbia University, and a friend who worked at the Toronto Star. They played a significant role in introducing me to the career opportunities in this field. Eventually, I made the decision to enroll in a Master's program in journalism at Columbia University. During this time, I also applied myself in various settings where I was able to expand my repertoire of skills that would help me become a stronger communicator. This included volunteering for the ALS society, where I wrote research summaries for their website, as well as completing an internship at Scientific American (a science magazine), where I pitched ideas for stories and produced website content that was provided by partners and bloggers. After graduating from journalism school, I acquired my first job as a Digital Health Editor for ABC News.

► **What was the most challenging aspect of your journey in the field of science communication?**

I think that the most challenging aspect was the degree of uncertainty and unknowingness that was associated with making a career change to science communication. For me, the idea of having to commit to a different program in a different city and not knowing what the benefits would be for my career was overwhelming. In hindsight, I believe that it was important to embrace these uncertainties by applying myself during the right moments and expanding my network of connections. Consequently, I was able to make the most out of these unknown factors and transform them into amazing opportunities. For instance, years ago, I never would have imagined that I would become a university professor for the program of Life Sciences. This speaks to the diversity of careers that this field offers and the idea that these transferable skills and qualifications lead to various different paths, if one keeps an open mind.

► **Despite the efforts of various courses, initiatives, and projects, many students remain uninformed about the opportunities in this field as viable career options. What exactly does a career in the field of science communication entail? Can you mention specific roles and/or projects that are typically carried out by experts in this profession?**

One career opportunity for science communicators is

journalism, with which I had personal experience. This involves being able to write a report and provide objective perspectives from the field of science for different audiences, whether it is the general public, policymakers, or other scientists. Depending on the type of publication that is being created, the audience may vary in their level of scientific knowledge. Thus, the journalist must be flexible in how they create their narratives. While researchers use the scientific method to gather evidence, journalists use a similar process to collect information. This includes asking relevant questions, interviewing different people, and obtaining different perspectives that all contribute to the content of the manuscript.

Alternatively, science communicators can represent a certain institution, such as a hospital or university. In this case, there is a certain connection to the material being communicated because science communicators collaborate with the primary researchers or doctors to report scientific findings to different audiences on their behalf.

Another career route is advocacy, with which I also had experience with when I volunteered at the ALS Society. In the context of ALS advocacy, I focused mainly on introducing patients to different research projects and treatment options, framing and communicating research in meaningful ways, and connecting ALS patients with each other.

Education and outreach is another option, which involves sharing knowledge with a community, such as an elementary school, or a geographic region. Finally, there is the choice of policy revision and policy making. This involves translating scientific information specifically, from the public health sector, as well as lobbying for policy changes based on the most recent evidence that is available. For instance, pertaining to the issue of climate change, environmental scientists may suggest changes in waste management policies based on the research that they have conducted.

► **Since your appointment as an Assistant Professor in 2018, you have had a huge influence on the advocacy and undergraduate curriculum of science communication at McMaster University. What specific skills are emphasized within this discipline that differentiates it from others in the field of science?**

I think that the single aspect of science communication that differentiates it from other fields is the emphasis and focus on the audience. Other disciplines of science are more focused on the *content* of their research and building up their respective body of knowledge. Conversely, science communication is concerned with knowledge translation and the presentation of the information to audiences in ways that are relevant and accessible. As such, effective science com-

municators must be able to make clear points and statements, ask good questions, build relationships and connections with people, and showcase creativity and flexibility in how they communicate with different audiences. The overall goal is to get people excited about the work conducted by researchers and to invite audiences to join these conversations about science. In this sense, science communication can be thought of as a set of skills in itself.

► **Public perceptions of scientific discourse can often be negative due to gaps in knowledge and the feeling that science is ‘inaccessible’ or ‘unimportant’. What techniques and/or philosophies do science communicators use to effectively present the research conducted by the scientific community, in ways that capture the interest of the general public?**

In order to capture the interest of the public, one must first decide what they want their audience to know and learn about. From there, one identifies the different ways of communicating this content effectively. Today, the audience’s attention spans are shorter than ever, and when it comes to science articles or journalism, people often look for specific pieces of information. As a science communicator, one has to be able to deliver this captivating and important information in a timely manner, while also maintaining the integrity and accuracy of the work.

For more seasoned and long-term audiences who have been following a specific story, the challenge changes. Namely, the communicator asks: how can one ensure that the audience *stays* interested? How can these narratives be framed in a creative manner and continue to ‘hook’ the readers? Another fundamental aspect of effective communication is explicitly stating the significance of scientific projects in order to intrigue the reader. Even if a topic is not inherently interesting, there is always a way to relate the content to the audience. For example, people tend to have a natural interest in their own health, so these stories are easier to communicate. Conversely, many people may not find space exploration to be an interesting topic, so an effective communicator would be able to find a way to present this content in a relatable fashion. This may be done in different ways, such as covering interesting characters involved in the projects, emphasizing the plot of a story, or even explaining why these projects are an effective use of taxpayers’ money.

“Science communication is concerned with knowledge translation”

► **Today, the transfer of information has become widespread and is now easily accessible through technological advancements, such as social media platforms. How have these developments in mass communication affected—both positively and negatively, the field of science communication? Accordingly, where do you see this field progressing over the next 10 years?**

Without a doubt, social media has changed *how* people acquire and share scientific information. In the past, the transmission of scientific knowledge used to follow a ‘chain of command’—the only science available to the public was through subscriptions to journals. Furthermore, only selected studies gained a lot of initial interest and support, and would obtain media coverage. Overall, the transfer of this information was much more curated and restricted in the past.

Through the internet and social media, people now have instant access to online journals, news articles, and scientific content. Today, there is a move toward transparency and open access. Scientists now publish pre-prints of their research, in order for the public to see their work before it enters the review process of a journal. In addition, scientists may be active on social media platforms to promote and advocate for their work. However, a drawback to this open access of information is that individuals are at risk of drawing conclusions from information that is not necessarily verified or reviewed, thus, it might not be accurate.

Though the idea of widespread mass communication has negative effects, there are also some positive aspects, if applied properly and responsibly. For instance, the increased depth and diversity of research has allowed individuals to shift their interests and explore science to a greater degree. In addition, the internet and social media have created a sense of unity by connecting different audiences through forums and online groups. This permitted them to rally support for a particular research subject and raise awareness for different causes. Moving forward, the processes of information sharing will likely become even more prominent and the effects more pronounced. It is a powerful tool that can have very significant consequences if exploited. However, responsibility lies with both communicators and audiences in exercising discipline when sharing scientific information.

► **With increasing awareness for the field of science communication, it is likely that many more students will begin to express an interest in professions related to science journalism, media coverage of global health issues, and public health. Based on your experiences, what advice would you give to students who intend on pursuing a career in the field of science communication?**

My advice to these students is to be confident and app-

ly oneself whenever possible. Looking back on my own experiences, I would like to think that I often created my own opportunities. This might include reaching out to different organizations such as journals or newspapers, volunteering in science communication settings, and developing a portfolio of work that showcases one's skills. One can refine their skills in this field by attending writing workshops, career information sessions, extracurricular clubs, or discussions and talks hosted by public health representatives or journalists. These opportunities should be seized because they provide a chance to not only develop one's skill set, but also to meet other people in the field.

Finally, one should read as much as possible! There are many effective science communicators in the field and following the work of these individuals is often the best— and in my opinion, the most enjoyable means of becoming a better writer and communicator. It is best to make an effort to stay informed about the latest developments in scientific research and to keep up with the conversations!

CONCLUSION

Science communication is a field that covers a plethora of different professions and creates unique opportunities for individuals that are proficient in storytelling, networking, and expressing creativity. A lack of knowledge and awareness of this particular field has led many individuals—particularly students, to remain uninformed and consequently, never consider science communication as a viable career option. From journalism to teaching, individuals like Dr. Katie Moisse exemplify the diverse array of careers that are obtainable through science communication. With the rise in advocacy and support for this field in recent years, science communication will continue to expand within the McMaster University community and beyond.