

Scientia ex Machina

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Hopefully this September finds our members, colleagues, and in fact the world healthier and safer following a successful Annual Scientific Meeting in Denver. Unfortunately, as of this writing the trend for the delta variant and other “variants of concern” appears to be heading upward.

News Flash!!! The annual call for papers for the next Annual Scientific Meeting in Reno is now out. We all have until November 1 to get submissions in. With the plethora of events, issues, and concerns currently abounding that relate to aerospace medicine and human performance, there should be no shortage of ideas and initiatives for papers, panels, and posters. As usual, the vast majority of submissions will bump right up against the deadline, and my past submissions have certainly conformed to that. But the AsMA staff and the Scientific Program Committee need your help by submitting early if at all possible.

THEME FOR 2021-2022

The future of aerospace medicine is an ever-recurrent issue for AsMA, and I think it is appropriate to focus again on this topic for the upcoming year. With that in mind, I want to address in more detail the theme for this year, “Scientia ex Machina” or “Knowledge from the Machine.” As we all know, countless movies, books, and stories have addressed the specter of a dystopic future due to the rise of autonomous computer/machine devices. In the last decade, the real world has seen an explosion of information technology (IT) and artificial intelligence (AI) in ways that were unanticipated back in 2012 that affects how we develop and share information. And there is no indication this will abate during the next decade. To wit, how often can we say we get through a meal without uttering “Let’s Google it,” or just shouting out to some other personal digital assistant. In fact, with just a few clicks I was able to find a “short list of the top 22” assistants including Google Assistant, Nina, Viv, Hey Athena, Cortana, Mycroft, Braina, Siri, Alexa, SILVIA, Amazon Echo, Bixby, Lucida, Cubic, etc. Did I fact check the list? No. I don’t have that kind of time and had to “assume” the writer of the article was being accurate. We already know that enterprising students use the internet to plagiarize other material that is hard for instructors to check. Ghostwriting? My son-in-law did a project in his graduate class by developing a “bot” that would write a 1-2 page paper on any topic by scouring the internet for relevant phrases and compiling the top candidates into a “product.” He admits that on first glance the report appears credible, but any careful reader will

almost immediately conclude that it doesn’t really make sense.

I think it is also relevant to point out that the search engine I used to see how many personal digital assistants there are probably went well beyond using AI to find the information, but also probably used stored knowledge of my online habits, interests, and inquiries to vet the information provided to me. There are probably dozens of truly relevant articles beyond the top few that I saw. And we all know the frustration of trying to find specific information and being digitally served something not even remotely close. But the machines are getting smarter. Call me old-fashioned, but I kind of like having to look through dozens of articles on a PubMed search to find the ones that are relevant. I suspect that PubMed will also get to know my search habits and the articles I select to make my searches faster. By the way, Amazon Assistant popped up to tell me where I could find smart phones with the top digital assistants at the best 30-day average pricing.

In short, we are becoming dependent on “knowledge from the machine”! As consumers of digital information, we’ll have to become much more sophisticated in our understanding of how the original data was gathered, processed, and vetted to produce “knowledge” useful for us mere humans to create “wisdom.” However, the “machine” also applies to smart devices including air and space craft. Witness the recent exploits of “billionaires in space” utilizing automated spacecraft. No matter about the argument about who actually made it to “space.” It’s the automation, stupid. So, our question is how this will affect AsMA’s mission to “apply and advance scientific knowledge to promote and enhance health, safety, and performance of those involved in aerospace and related activities?” We cannot predict where we will be in 2032. But we can start asking questions about the impact of technology on the role of humans in aviation and space, the field of aerospace medicine, the meaning of human performance, and how this will alter the aerospace medicine community, practice, and research.

On a disappointing note, the FAA project to develop an intelligent digital assistant for the Office of Aerospace Medicine to be named “Jim” has been scrapped due to budget concerns. Pity that. See you next month.

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