

Are You an Interdisciplinary?

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Just home in Oslo after the AsMA Annual Scientific Meeting in Denver, and there are many impressions that give “fuel for thought”: the amount of voluntary work that goes in to make such a conference happen, with over 1800 participants; the friendships, the openness, the knowledge shared; and the many impressive colleagues, young and old, who had travelled within, over, or between continents to meet, discuss, and learn. The fact that my travel over the Atlantic safely at 36,000 feet was made possible because of the understanding of human physiology, the physics of the atmosphere, the human factor engineering, the psychology of collaborative crewmembers, and the oxygen-haemoglobin dissociation curve... this is all history unfolding. And now human long-duration spaceflight, with microgravity, radiation, and the psychology of isolation and confinement (to mention a few), is on our plates *in addition*.

It is a lot to take in. And not always easy to formulate when you for the first time tell someone you are in aerospace medicine. “... Really? Is there such a thing? What do you actually do?” I’m sure you’ve heard that a few times.

Aerospace medicine is often misunderstood as a narrow field. I suppose we can forgive someone for misunderstanding, since the word “medicine” to most people implies the management of a medical condition by a person in a white (or green) garment. Yes, we do, but also so much more.

From the AsMA website: *“Aerospace Medicine concerns the determination and maintenance of the health, safety and performance of persons involved in air and travel.*

Aerospace Medicine, as a broad field of endeavor, offers dynamic challenges and opportunities for physicians, nurses, physiologists, bioenvironmental engineers, industrial hygienists, environmental health practitioners, human factors specialists, psychologists, physician assistants, and other professionals.”

This definition is rather good, I think, although I am sure many of you would be able to think of even more different competencies involved in our field.

When people from different disciplines work together on complex tasks, it is often called “multidisciplinary”. *Multidisciplinary* and *interdisciplinary* are two terms which are often confused. They are not the same.

Multidisciplinary work involves professionals, knowledge, or skills from different fields of study or areas of expertise working

on a common goal. Here, each expert contributes distinct perspectives, but within the boundaries of their own discipline.

Interdisciplinary activity takes it further, integrating methods and concepts from different areas to converge on a fused, common approach. It relies on sharing knowledge and may be necessary to address new types of complex or global challenges which are beyond the scope of traditional disciplines.

Some scholars have introduced more specific concepts of interdisciplinarity which cross wider, sectorial barriers and are deeply collaborative and integrative: *convergence research* is a term used to solve specific, “wicked” problems where intellectually diverse researchers develop a shared language and methodology focused on a target output, while *radical interdisciplinarity* challenges established academic silos and explores new, fundamental ways of understanding the world around us through sometimes uncomfortable merging of fields, like data science with philosophy or sociology. The latter concept was introduced to me from a good colleague, a professor at the University of Oslo, and it struck a tone.

The term itself—*“aerospace medicine”*—strikes a rather interdisciplinary chord and the diverse competences involved in our field are impressive. It is the core of what we have achieved and, even more so, central to meeting the future challenges we face within military and civilian aviation and, especially, human spaceflight. The understanding of this crucial basis for the work we do does not come naturally, but needs to be nourished, as most of us have been “brought up” within one field of expertise. As a medical doctor, I can confirm that a strong professional culture sometimes can stand in the way of true interdisciplinarity.

We stand on the shoulders of great researchers and practitioners, and we have achieved amazing things. Would this have been possible without interdisciplinary efforts? I think not.

This is why I think *interdisciplinarity* might be a worthy theme for next year’s AsMA-UHMS Annual Scientific Meeting.



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