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Envisioning the future of neuropharmacology: Applying arts & sciences

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Pharmacology, which marks its 19th century origins with the work of synthetic organic chemist Friedrich Wohler, promises a rich future in the evolution of drug discovery, development and medical applications that impact human health and wellness. Understanding the physiological activity and therapeutic effects of chemical compounds on human systems remains a concerted collaborative effort of pharmacologists considering the combined empirical studies by neuropsychologists, neuropharmacologists, toxicologists, microbiologists, clinicians, and many other specialists whose work informs drug design and therapy. This article explores some best practices in the Arts that foster creative inquiry, discovery and innovation, which may help advance knowledge of how drugs interact with the body (pharmacodynamics) and vice versa (pharmacokinetics): from drugs known to affect the actions of enzymes and cell-receptors to biochemical changes in cell/neurons that reveal the body's response to various medicinal packages. Indeed, there's a fine art to Pharmaceutical Sciences that can catalyze vital innovations leading to new treatments and means of preventing common illnesses and uncommon diseases. What new theories, tools, techniques and approaches can be used to this end? What new or basic questions need to be raised in Pharmacology that challenges the whole field to continually innovate? The author focuses on Neuropharmacology, which provides practical insights into the unsolved mysteries of how drugs influence the human brain and body it governs: From genes to proteins to networks of neural tissue to affective and cognitive processes to intentional actions and behaviors.

Biography

Todd Lael Siler is an internationally recognized Visual Artist, Author and Innovation Consultant. He has received his PhD in Interdisciplinary Studies in Psychology and Art from the Massachusetts Institute of Technology in 1986, becoming the first visual artist to receive this degree at M.I.T. He began advocating integrating the arts and sciences in the mid-1970s and founded The ArtScience Program, which pioneered arts-based learning methods and tools for generating innovations. The World Cultural Council awarded him the 2011 Leonardo daVinci World Award of Arts, recognizing his practice of applying the ArtScience process to envision solutions to global challenges.

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