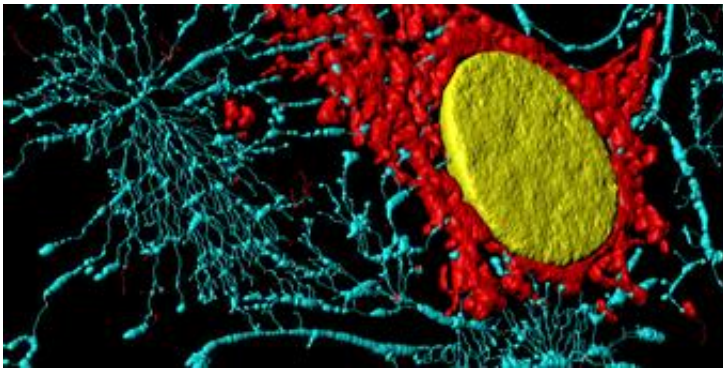


Working group seeks better cell type classification

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Traditionally, cells have been categorized based on location within an organism, structure, function, or even developmental history. But recent advances suggest there might be better and more uniform approaches to cell classification and understanding of cell types.

"Ultimately what determines the function of each cell or each cell type are the genes that are turned on in that cell," says SFI External Professor Manfred Laubichler, President's Professor of Theoretical Biology and History of Biology at Arizona State University and director of the ASU-SFI Center for Biosocial Complex Systems.

A better theory of gene regulation within cells is needed if we are to understand how [cell types](#) have evolved and how they might change in

the future, he says: "The emergence of a new cell type represents an evolutionary innovation," he says. "This makes it all the more important to clearly redefine what a cell type is."

As they have made progress in their individual fields and addressed similar questions, experts in [cell biology](#), evolutionary [biology](#), and systems biology have developed different concepts and terminology in their work. Unifying these definitions and approaches could lead to a more robust theory of [cell evolution](#), Laubichler says.

He and colleagues Günter Wagner (Yale University) and Detlev Arendt (European Molecular Biological Laboratory) are organizing this week's working group at SFI, which brings together experts in these fields for the purpose of developing a more unified understanding of cell type evolution. Laubichler anticipates this meeting will produce a synthesis paper that will clarify existing questions and identify the most pressing next questions.

Provided by Santa Fe Institute

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