

**APPLICATION OF THERMODYNAMICS TO THE UNIFICATION OF NATURAL SCIENCE
AND THE HUMANITIES AND ITS IMPLICATIONS FOR GOVERNANCE AND ACTIVISM**

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ABSTRACT

This panel examines the application of thermodynamics to understanding the formation of civilization, as well as its implications for the governance of society and social activism.

Fred Spier presents two novel laws of thermodynamics, both of which deal with the capture of free energy by life. Together with a few other novel general principles, this helps to explain how the biosphere works, including its entire history. In this approach, all the existing knowledge about the biosphere is integrated into one single historical world view uniting the natural sciences and the humanities. In his presentation, those general principles will be outlined.

Parker Dubée examines the history and governance theories of Technocracy Inc. Technocracy began in 1919 in New York City as an organization known then as the Technical Alliance of North America, founded by Howard Scott and a team of men and women at Columbia University—including thermodynamicist Richard Tolman—and commissioned by the U.S. government to apply the work of Willard Gibbs to study the technical management and allocation of resources of the North American continent. In 1933, when it became clear in many manufacturing areas that technology was replacing manual labor, Technocracy Inc. was formed and co-led by Scott and geologist Dr. M. King Hubbert, where it grew to tens of thousands of members across the United States and Canada. Their aim has since been to examine how a nation's continuous increase in the use of extraneous energy affects its labor-force and monetary economy.

Andrew Wallace discusses the formation and progression of the European Network of European Technocrats to apply the work of the above Technical Alliance to Europe and has evolved into the Earth Organization of Sustainability (EOS). EOS has had affiliates across the globe and is still actively pursuing its design methodology for resource-based economic governance. It has applied some its design principles to the establishment of a community-oriented biodome in Umea, Sweden.

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