

Figure 1: There are at least two models in which different disciplines can work together. In the first, the disciplines come together, work on a project or use a common tool, and then they return to their respective disciplines. In the second, the disciplines come together to be part of a common project.

In the modern days of megaprojects and grand challenges, there are at least two ways different disciplines may be brought together, and often times, to create another discipline — a so-called interdisciplinary or transdisciplinary area. In the first way, experts from different disciplines come together to solve a problem and then they return to their

respective disciplines. This is common in an academic setting. For example, a high-performance computer institute at a university, in which departmental faculty members are encouraged to work with research scientists at the institute to solve a common problem using high-performance computers (the tool). At the end of the day, departmental faculty

members return to their respective departments, from which they are seeking tenure or in which they already have tenure.

In the second way, experts from different disciplines are brought together to widen the perspectives of solving a grand challenge problem.

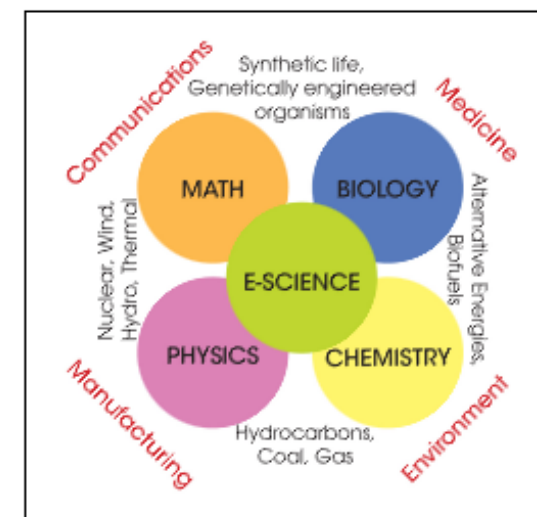


Figure 2: Energy science (E-science) is an interdisciplinary and transdisciplinary discipline. Shown above is an example of how the interfaces of basic sciences form E-science, and some of its applications.