How Interdisciplinary is Nanotechnology?,
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A key notion about nanotechnology is that it is "convergent," i.e., that it brings together different sciences and technologies into a single field. This convergence has been expected to lead to an increase in *interdisciplinarity* in research at the nanoscale. Indeed, these days the commitment to interdisciplinary research is evident in science policy, education programs and training approaches.

CNS-ASU undertook to answer the question: what is the extent and nature of disciplinary diversity in nanoscale research? In a study forthcoming in the *Journal of Nano-particle Research**, a science overlay mappi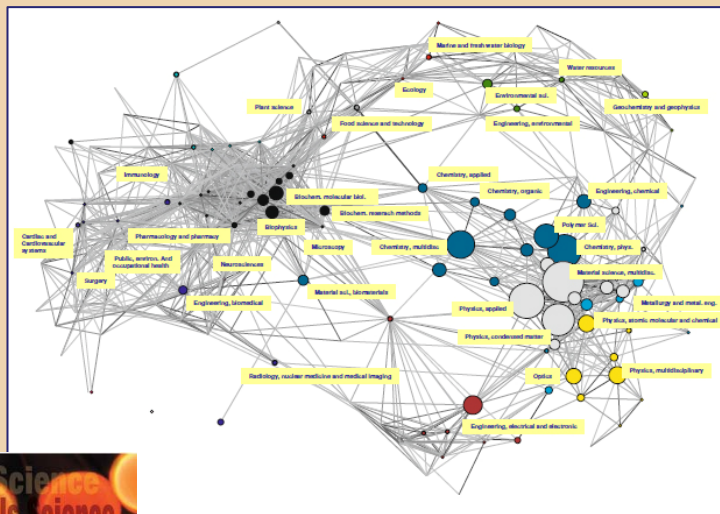ng process is used to visualize the position of nanotechnology research publications across scientific disciplines identified by using the Web of Science Subject Categories. The study also uses integration scores as another means to gauge interdisciplinarity.
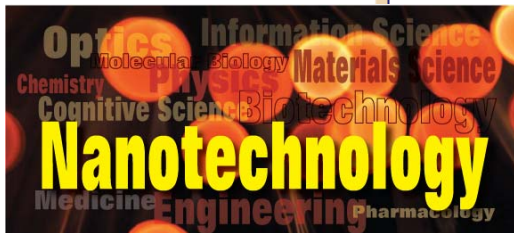
"Map of Science" technique
showing nano research areas active in 2005

The results suggest that nano exhibits a high degree of disciplinary diversity. Nano publications center on materials science, chemistry and physics. However, nano also significantly involves many other fields, including biomedical sciences, computer sciences, mathematics, environmental sciences, and engineering, among others. Most importantly, the study shows that nano publications cite, and therefore draw knowledge from, multiple disciplines. The preponderance of references in nano-related articles are to research outside the macro-discipline in which the article is published.

Thus, nanotechnology is, at this point in time, a multi-disciplinary collection of fields. Although we do not know whether the component nano research fields are essentially converging, they do draw upon and integrate knowledge from a wide range of diverse fields. These findings suggest that attention should be given to facilitating the diffusion and absorption of knowledge across disparate areas. Authors and editors must assure that findings are presented to be as accessible as possible to researchers from other disciplines. Furthermore, we encourage exposure to, if not training in, "infometrics" tools and methods to better locate relevant research using leading databases.

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