

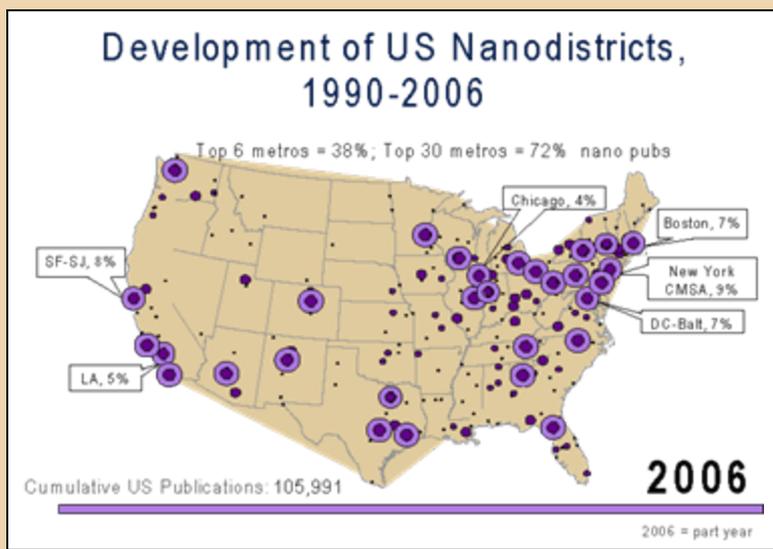
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CNS-ASU's research and innovation systems analyses characterize the scope and dynamics of the nanoscience and engineering (NSE) enterprise, public and private, to understand its dynamics, direction, velocity, developing synergies and linkages. Through extensive queries of bibliographic and patent databases, global, national and regional "nano-districts" have been identified that are the focus of publishing and patent activities.

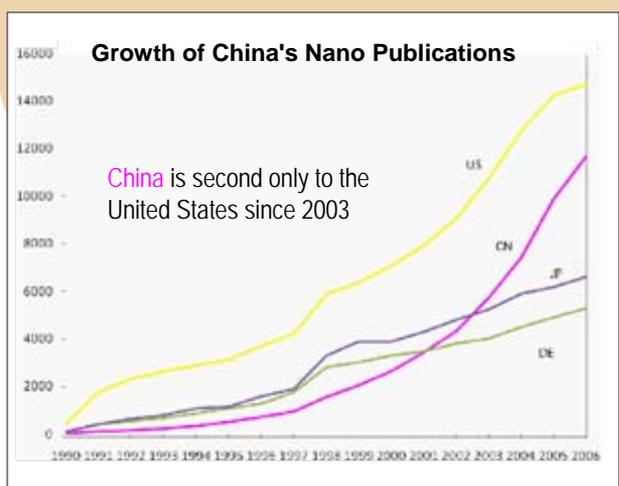
**Is Nanotechnology a GPT?**

The CNS-ASU research and innovation group is examining whether nanotechnology has the characteristics of a general purpose technology (GPT). Such technologies are widely disseminated across many sectors and can have broad economic and social effects. Early results suggest that NSE appears to be following a pattern of intellectual property more similar to general purpose technologies such as information technology, rather than to more focused technologies like pharmaceuticals.

# Regional Clusters of Nanoscale Science & Engineering Activity in the United States



CNS-ASU research shows that metropolitan areas currently strong in nano publishing and patenting are largely similar to those metropolitan areas strong in previous emerging technologies. This lends support to an argument for path dependency in the development of nanodistricts. However, some newly emerging nanodistricts centered on large government and corporate laboratories, and new human capital concentrations, are evident.



CNS-ASU researchers studied NSE in China through bibliometric and patent analyses as well as fieldwork. They found that the quality of Chinese NSE publications is lagging but increasing, and the quantity of its patents still lags significantly. Commercialization in China is focused in lower-end applications of nano-materials, and pathways to applications are driven by university research, with weak corporate R&D investment.