



Fueling Innovation: The Role of Federal Investment in Structural Chemistry and Materials Science

Public-Private Partnerships:

Federal agencies collaborate with private industry to commercialize innovations through programs like SBIR and STTR, which encourage private companies to bring new technologies to market, boosting investment and advancing the field.

Funding for Research:

Agencies like NSF, DOE, and NIH provide significant funding for research in structural chemistry and materials science, supporting academic and industry researchers on cutting-edge projects, from new materials to molecular interactions.

Government Investment:

Federal investment promotes collaboration among universities, research institutes, and private industry, funding multidisciplinary projects that drive innovation across structural chemistry, materials science and physics. This collaboration is key to turning fundamental discoveries into practical applications.

Infrastructure Development:

Federal funding supports the development and maintenance of research facilities like synchrotron light sources and electron microscopes, providing researchers with the tools needed to study materials at the atomic and molecular level and drive breakthroughs in material properties.

Innovation Ecosystem Support:

Federal investments support innovation ecosystems, including hubs, tech transfer offices, and startup accelerators, helping turn academic discoveries into real-world products like new drugs and advanced materials.

Training and Workforce Development:

Federal funding supports training programs and fellowships in structural chemistry and materials science, ensuring a steady pipeline of skilled professionals for future innovations.

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Real-World Case Study of Federal Investment in Structural Science and its Positive Global Impact: **Advanced Photon Source helps Pfizer create COVID-19 antiviral treatment**



Cutting-Edge Research Infrastructure

APS, funded by the federal government, uses X-ray radiation to analyze materials at the atomic level, enabling critical research like studying the virus structure.



Accelerating Innovation

Federal funding allows faster research, helping Pfizer quickly develop antiviral compounds by analyzing SARS-CoV-2's structure.



Public-Private Collaboration

APS's partnership with Pfizer demonstrates how federal resources facilitate collaboration between public research institutions and private industry.



National Security and Public Health

Federal investment in structural science strengthens national preparedness by aiding rapid development of solutions for health crises like COVID-19.



Economic Impact

Federal funding in research helps maintain U.S. leadership in biotech, boosting public health and economic growth.