



JASON PEARSON, PhD
Associate Professor
Department of Chemistry

◎ **EXPERTISE**

- Electronic Structure Theory
- Computational Chemistry
- Cheminformatics

◎ **RESEARCH AREAS**

- Electron-pair models in chemistry
- Quantum biochemistry (understanding inter- and intra-molecular interactions)
- Data stewardship and analytics in the chemical sciences

◎ **CAPABILITIES FOR INDUSTRY COLLABORATIONS**

- Computational elucidation of structure and mechanism for compounds and chemical processes
- High-throughput in silico screening of lead compounds
- Structure-activity relationships

While most people might imagine a chemistry lab to be filled with beakers, burners, and microscopes, Jason Pearson's lab looks more like a call centre. His research relies on computers to answer big questions about chemistry.

Computational modeling can provide a more cost-effective, safe, and accurate way to analyze chemical compounds, especially valuable in the pharmaceutical industry. Pearson and his team use computers to simulate chemical properties without the need for a lab equipped with state of the art equipment, safety concerns, or specially certified personnel. The other advantage is they can process large amounts of data with a level of accuracy no human could match.

One of the challenges Pearson observed is that the field of chemistry generates a staggering amount of data on a daily basis and data management is a challenge for most chemists. Until now there hasn't been an efficient clearinghouse where chemical information can be widely shared and easily searched. To meet that need Pearson and his colleagues at Memorial University of Newfoundland have developed the Retrieview Database Platform. Retrieview stores, indexes, and describes chemical structures digitally, providing a user-friendly platform where scientists can share and interact with chemical information.

Pearson's vision for Retrieview is for it to become the premier global resource, contributing to the development of commercial compounds like pharmaceuticals, and for academic and industry R&D.



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