Stephen Wilson is researching the drivers of change in the atmosphere, including processes that generate greenhouse gases and solar radiation, which provides the energy for chemical change within the atmosphere.

Current research topics involving Stephen and his students include:

- Greenhouse gas emissions in urban environments
- The emission of nitrous oxide (an important greenhouse gas) from soils and sediments.
- The photochemical generation of OH in the clean atmosphere. (OH reacts with many chemicals, resulting in their removal from the atmosphere).
- The changes in particulates (aerosols) in the atmosphere.