Interactive simulations are increasingly used in science classrooms to enhance students’ understanding of scientific concepts. Research into the effectiveness of computer-based technologies such as scientific visualisations, however, often shows no significant increase in learning gains. The results of this work may be patchy because the focus has been on the computer-based ‘tool’ rather than on the combination of educational technologies and appropriate pedagogies. This Special Issue of *Education Sciences* is devoted to collecting cutting-edge research demonstrating the affordances of interactive simulations, linked with explicit attention to pedagogy, for learning.

I am delighted to invite you to submit a paper for the Special Issue, and to pass on the call to colleagues in the field who can make a significant original contribution to knowledge. If the Special Issue exceeds 10 papers it will be published in book form, and this is something I will work hard to achieve.

Assoc. Prof. David Geelan

*Guest Editor*