



## From the Editors

This marks our second issue of *Communications of the Blyth Institute* (CBI). As usual, this issue of CBI includes papers on a diverse array of topics, including machine learning, consciousness, philosophy of science, and mathematics.

### Issue Focus

The focus of this issue is philosophy of science. To that end, we have included papers on:

- The shifts required for science in thinking about consciousness (Rakover),
- How to quantifying generalizations (Bartlett and Holway),
- Uncovering hidden usage of theology in science (Hunter and Dilley and Tafacory),
- Null hypothesis construction (Hunter),
- Science education (Dilley and Tafacory), and
- The nature of truth (Koch).

Every endeavor of knowledge involves both epistemology (how do we know that something is true?) and ontology (what is the structure of truth?). These philosophical questions frame the outlines of how science works. While some believe that the ontology and epistemology of science are set in stone, in truth it is a continuously-changing enterprise—hopefully for the better.

Philosophy of science is used both internally (for scientists to analyze and adjust their own thinking) and externally (for non-scientists to judge the quality and applicability of the outputs of science). Those who discount the value of philosophy to science simply show their ignorance of the subject. The basic rules of inference come from philosophy. The identity of indiscernibles, the principle of sufficient reason, and the law of non-contradiction are indispensable to scientific reasoning, but they originate in metaphysics. Many of the advances of science, such as null hypothesis testing, are actually philosophical advances about the nature of epistemology. So, while many in the popular

press wonder how useful philosophy is to science, the actual practice of science is bathed in philosophy.

We are thankful to all of our contributors for maintaining high standards of academic excellence.

### Criticism Welcome

However, the progress of any model requires criticism as well. If you have a comment or criticism of a paper published in CBI, we encourage you to submit a letter (or even a full rebuttal paper) for publication. More than anything, CBI exists to facilitate communication among researchers in a variety of fields, and that includes well-founded criticism.

Cross-field analysis and criticism is also encouraged. Different disciplines bring different mindsets, and applying knowledge and perspectives from a diversity of fields helps to sharpen and refine ideas more effectively.

### Future Issue Focus

The actual focus of each of our issues is dependent on the submissions we receive and pass peer review. However, we are hoping to put together an issue focusing on machine learning and artificial intelligence in the near future. If you work in that area, we hope you consider us for publication.

—The CBI Editors