News

Blyth Institute Mobile Microscopy Lab Makes Appearances

The Blyth Institute's mobile microscopy laboratory has been touring homeschooling conventions in the Oklahoma area. The goal of the lab is to provide students (and their parents) the ability to have a hands-on look at life at the tiniest levels, and to have experience with some of the tools that make modern discovery possible.

During the lab sessions, Blyth Institute volunteers show students how to take samples, make simple stains, and view their samples under the microscope. The sessions are usually employ fairly standard types of samples, such as onion skin, pond water, and vegetable ferments. Various samples of flowers and other objects are made available for viewing under the stereo microscope.

There is a limit to the amount of actual lab work that can be down in a crowd, but getting students used to the methods and thought processes behind it can start them thinking about what goes in to the scientific discoveries they will learn during their education.

AM-Nat Business and Technology Conference Information

Originally, The Blyth Institute had planned to do another *Alternatives to Methodological Naturalism* conference focused on business and technology theory and applications. However, this idea is sufficiently new and different that we have had trouble sourcing talks for such a conference. We are still planning to do something along these lines, but instead of our normal conference format, we are currently planning on doing a series of introductory seminars to spark further interest in the topic.

MindMatters: Using Technology Instead of Worshipping It

The technology blog MindMatters (`https://mindmatters.ai`) recently appeared on the scene. It is the news and popular content wing of the Walter Bradley Center for Natural and Artificial Intelligence. The blog's authors include several members of The Blyth Institute. The topics are wide-ranging, but the focus is on artificial intelligence and its role within society. It deals with the good and the bad of technology, proper use and misuse, and the personal, moral, and spiritual impacts that technology can have.

Blyth Institute Press Books Now Available Online

In addition to hosting the online version of this journal, `https://journals.blythinstitute.org/` will also hold the digital editions of Blyth Institute Press books, including *Engineering and the Ultimate* and *Naturalism and Its Alternatives in Scientific Methodologies*. The Blyth Institute also recently registered with the DOI network, so all papers and chapters will receive a DOI. For those unaware, a DOI makes referencing and linking scholarly material easier.

New Model of Species Relationships Proposed

In the latest issue of *Bio-Complexity*, Winston Ewert proposed a new model of species relationship—the dependency graph. His paper, "The Dependency Graph of Life," shows that the relationships among species based on their gene families better represents a dependency graph than a tree. Ewert shows that, in absence of the proper model, dependency graphs look like trees when compared to random distributions (which is what they are normally compared against in the literature). This is why the tree hypothesis has such vigorous support—when compared against a ran-

dom null model, the data looks like a tree. However, when compared against a dependency graph, the data looks exceptionally more like a dependency graph than a tree.

While this is definitely an exciting development, this research is still in its early stages, and many questions are unanswered. Further work will show what model of species relationships best fits the data.

Latest Business Trends Combine AI and Human Creativity

Early work in AI had the long-term goal of replacing human creativity with machine intelligence. However, over the years, it is becoming increasingly evident that the best AI models actually include human input at various stages. For instance, in Eric Holloway's "Imagination Sampling" paper (in *Naturalism and Its Alternatives in Scientific Methodologies*, 2016), he suggested that AI could be augmented by including humans in exploring the hypothesis space. A new European software company takes this idea to the extreme. Engineer.ai, for instance, is a new startup that uses an AI to help build new software projects, and incorporates human talent on an as-needed basis.

Some companies, such as iFLYTEK, have been caught using humans *instead of* AIs, at least in demos. To some extent, this isn't even really a problem, as the user would not care whether the work is done by a computer or by a human. However, for investors, it is important to know if the core technology is computing, which is relatively cheap to source, or humans, who tend to be more expensive. In any case, for difficult jobs, we are finding more and more that humans and computers each have important but distinct roles.

Health Risks of Mutation Accumulation

Recently, John Sanford gave a talk at the NIH on the question of whether or not mutation accumulation poses a health risk to humans. Sanford's population genetics simulator, Mendel's Accountant, has shown repeatedly the problem of getting rid of slightly deleterious mutations through natural selection. Below a certain threshold, deleterious mutations are essentially invisible to natural selection, and therefore, according to standard population genetic models, they accumulate in populations which eventually experience mutational meltdowns. In his NIH talk, Sanford discusses the medical implications of this result. The talk is available at `https://www.youtube.com/watch?v=eqIjnol9uh8` .

Blyth Institute Director Releases New Calculus Book

Blyth Institute director Jonathan Bartlett released his new calculus book titled *Calculus from the Ground Up*, as well as a full solution manual. This book was developed while teaching calculus to homeschool co-op classes. Being frustrated with calculus books that seemed to miss the actual beauty and wonder of calculus, Bartlett decided to embark on a quest to write his own that would capture the aesthetics as well as the content of calculus. As an example, in the section on representing functions as series, the book uses this as a springboard to a general discussion of how to solve impossible problems.

New Types of Journals Starting to Take Hold

While the Internet brought many new methods of publication (online, Open Access, etc.), other innovations in academic publishing have gone relatively unnoticed. While the traditional journals remain the mainstay of published academic content, some other types of journals are starting to arise.

Quillette (`https://quillette.com/`) is a social issues journal founded in 2015 dedicated to a more free exchange of ideas not bound by typical norms. It includes topics ranging from why you should drop out of school to the way that trans activism negatively affects the political speech of women.

Next is the upcoming *Journal of Controversial Ideas*. This journal is based on the fact that many researchers have been attacked and their academic freedom threatened due to the controversial nature of their research. This journal aims to provide an outlet for communicating valid but unpopular findings, where the researchers can use aliases to protect their privacy.

On the science side is the journal *Inference: International Review of Science* (`https://inference-review.com/`). The goal of this journal is be to science what art criticism is to art. Essentially, the idea is that science needs critics as much as it does cheerleaders. Since the Internet

is awash in sites declaring just how much they love science (and every ridiculous paper and press release put out by science organizations), they are providing (among other things) a critical review of what is being published.

Finally, this journal is providing a way to solidify the front-end of science. Journals used to provide more space for conjectural and early-stage ideas. *Communications of The Blyth Institute* aims to prime the pump of research while still maintaining a solid review process.

It remains to be seen whether these publications will succeed in their aim, if others will succeed in their place, or if, perhaps, some of the publications are altogether misguided. In any case, as traditional journals have closed themselves off from certain areas of inquiry and analysis, new and specialized journals are rising to fill the vacuum left behind.