

CSIcon 2022 Sunday Papers

Session Chairs: Ray Hall & Natalia Pasternak

9:35-9:50

Talk 1: **Weird Stuff: Using the Supernatural to Teach Critical Thinking**

Eddy White, PhD, Associate Professor, University of Arizona

Since 2019, I have been teaching an undergraduate course at the University of Arizona called, *Weird Stuff: How to Think About the Supernatural, the Paranormal and the Mysterious*. Why are unusual beliefs part of the human experience for so many? Why do some people find such phenomena to be compelling, while others reject them outright? How do we decide which claims are credible? What distinguishes rational from irrational claims? This course is designed to help students answer such questions, to understand why people believe weird stuff, and through that process become more empathetic and independent thinkers and learners. This presentation provides an overview of the course and student feedback about it.

Bio: Eddy White has been a teacher for more than 25 years, including at the University of Arizona since 2011. With a background in Applied Linguistics and a specialization in classroom assessment, he currently develops and teaches courses for the Public and Applied Humanities Department.

9:55-10:10

Talk 2: **Fostering Critical and Scientific Thinking Through a Community of Inquiry**

Guilherme Brambatti Guzzo, Coordinator, Museum of Natural Sciences, University of Caxias do Sul

Abstract: Philosopher Matthew Lipman suggested that children and teenagers develop their critical thinking skills through immersion in “communities of inquiry”, that is, spaces where students have discussions about questions proposed by their teachers or by themselves. This presentation will describe the development of discussion groups based on Lipman’s community of inquiry at the Universidade de Caxias do Sul, in Brazil, and its impact on the students’ critical and scientific thinking skills.

Bio: Guilherme Guzzo is a biologist and an educator who holds a Master's Degree in Zoology and a PhD in Science Education. He is currently an assistant professor at the University of Caxias do Sul, in Brazil, where he is also the coordinator of the Museum of Natural Sciences.

10:15-10:30

Talk 3: Analytical Skepticism in the Classroom

Michela Marinelli, PhD., Associate Professor of Neuroscience, University of Texas at Austin

Abstract: How do we navigate scientific information, and how do we know what to believe? I teach an upper-level undergraduate course that educates about accurate interpretation of scientific data in a world full of imprecisions, irrationality, and lies. Classes are geared towards real-life experiences that students are likely to encounter while reading about or performing scientific research. I tap into notions of behavioral economics, probability and statistics, and experimental design, with a sprinkle of pharmacology and psychology, while showing that scientists are not immune to cognitive biases. I will share my curriculum, together with tricks and methods to inspire critical thinking in this difficult class.

Bio: Michela (Micky) Marinelli is an Associate Professor of Neuroscience (College of Natural Sciences) with affiliate appointments in the Department of Neurology and the Department of Psychiatry and Behavioral Sciences (Dell Medical School), and in the Division of Pharmacology and Toxicology (College of Pharmacy). Micky runs a research lab examining the neurobiological basis of drug addiction, with an emphasis on biological and environmental factors that enhance susceptibility to addiction. Micky's passion for teaching and research led her to create the course "Analytical Skepticism", which is the focus of this talk. This course received the "Texas 10" award in 2020, which is given to the 10 most inspiring professors at UT Austin. In addition to research and teaching, Micky is involved in service. For example, she served on the board of scientific counselors of the National Institute of Drug Abuse, is on the council for the Protection and Advocacy for Individuals with Mental Illness (PAIMI), and is one of the graduate advisors for students in the Neuroscience Graduate Program.

10:35-10:50

Talk 4: The Great Australian Psychic Prediction Project

Rob Palmer, Retired aerospace engineer, Guerrilla Skepticism on Wikipedia (GSoW) team member, *Skeptical Inquirer* online columnist.

Abstract: In 2021, *The Skeptic Zone* producer and CSI Fellow Richard Saunders completed his effort dubbed the Great Australian Psychic Prediction Project – an analysis of almost 4,000 published predictions made by over 200 people claiming paranormal powers in Australia. An international team of volunteers was formed in June 2020, and met weekly for well over a year, researching and scoring the outcome of every prediction in the database. Rob was a member of that team and will share, from an inside perspective, the details and results of this extensive investigation into the precision (or lack thereof) of the published predictions of prominent, public paranormal practitioners... from down under.

Bio: Rob Palmer is a mechanical engineer / software engineer with a long and diverse career in the aerospace industry. Before retiring in 2020, he worked (among other things) as a spacecraft designer, computer programmer, project engineer, and software systems engineer. In 2016, as a hobby Rob began working for the Guerrilla Skepticism on Wikipedia project editing the online encyclopedia to promote skepticism, and then in 2018 he was hired to write for *Skeptical Inquirer*. To date 60 of his articles have been published in his *Skeptical Inquirer* online column, "The Well-Known Skeptic," in the *SI* print magazine, and in other skeptical publications. Since 2018, Rob has also been a public speaker, covering a variety of topics for many skeptic and humanist groups, both in person and on-line, including for Dragon Con's Skeptic Track in 2021. This is Rob's third appearance on the CSIcon stage, having been a Sunday Papers speaker at the two previous conferences.

10:55-11:10

Talk 5: **Therapeutic Claims Related to Regenerative Medicine Among U.S. Naturopathic Doctors**

Melina Rodriguez, Masters in Public Health Candidate, UCLA

Abstract: Stem cell therapy has gained rapid momentum as a promising regenerative medicine treatment. However, despite ongoing advancements in stem cell research, most treatments have yet to be scientifically validated. In recent years, naturopathic doctors have started incorporating these treatments into their services, advertising them as "regenerative medicine." I will describe a content analysis of 215 clinic websites aimed to identify the frequency and characteristics of stem cell-related marketing claims made by naturopathic doctors by analyzing a sample of naturopathic clinics across the U.S. in licensed and pre-licensed jurisdictions.

Bio: Melina Rodriguez is a graduate student at the Fielding School of Public Health at UCLA. She received her undergraduate degree in public health from Cal State LA, where she became interested in understanding the effects of health misinformation and disinformation on health outcomes and public health.

11:15-11:30

Talk 6: Inoculating Minds Against the Infodemic by Creating Misinformation

Melanie Trecek-King, Creator of Thinking Is Power, Associate Professor of Biology, Massasoit Community College

Abstract: The spread of misinformation has gotten so out-of-control that experts are calling it an infodemic. Thankfully, science has found a tool in the fight against misinformation: inoculation theory. Similar to how a vaccine builds immunity to a pathogen by exposing our bodies to a weakened form of the pathogen, we can build immunity to misinformation by exposing our minds to a weakened form of misinformation. While there are different types of inoculation, this presentation will focus on active inoculation, in which students learn the strategies used to mislead by creating the misinformation themselves. Active inoculation exercises are a fun, engaging, and effective way to protect students from being fooled.

Bio: Melanie Trecek-King is the creator of Thinking Is Power, an online resource that provides critical thinking education to the public. She is currently an Associate Professor of Biology at Massasoit Community College, where she teaches a general-education science course designed to equip students with empowering critical thinking, information literacy, and science literacy skills. As speaker and consultant, Trecek-King shares her “teach skills, not facts” approach with other educators. Trecek-King is also the Education Director for CIRCE (Cognitive Immunology Research Collaborative), which aims to inoculate minds against misinformation.

11:35-12:00

Panel Discussion: Q & A with all Sunday Papers Presenters

Moderators: Natalia Pasternak & Ray Hall