

# What to Believe: Critical Thinking and the Scientific Method

Paradise Campus- Tuesdays 1:45-3:30PM and Las Ventanas- Wednesdays- 10AM-noon

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Scientific Skepticism gets a reboot for the era of “fake news.” We will look at how we think and analyze information to reach conclusions about what is true or real. We will explore techniques used by those who wish to influence us to buy their products or ideas. The goal is to gain confidence evaluating information and coming to your own conclusions. Each week we will look at a new topic. For example: What is Fake News? Are GMOs harmful Frankenfood? Are ghosts real? How do psychics make their predictions? Do vaccines cause autism? Are crop circles created by aliens or pranksters? What about probiotics, ear candles, homeopathy or overpopulation? We will do demonstrations whenever possible and look at the evidence. There will be a strong emphasis on psychological processes and the scientific method. We will also look at how logical fallacies can lead us astray, and what we can do to choose what to believe and what not to believe in a rational way. Of course, the final decision about what is real or true will always be left for each individual to decide for him/herself.

**Class 1-** The scientific method in action. Logical errors to avoid. Perception and attention. Looking at problem solving and thinking outside the box. What is true and how do you decide what to believe and what to discard? There are people today who actually believe the earth is flat. Really?

**Class 2-** What is a lie? Can you tell the truth from a lie? Is there a difference between mistaken understanding and deliberate falsehood? What is fake news and what is real news? How can you tell the difference?

**Class 3-** How memory works, and the inaccuracy of eyewitness testimony. What are the consequences of our distorted memory and perception? What about choice? Is there such a thing as too much choice? The psychology of advertising including political advertising.

**Class 4-** Ghosts, out of body experiences, sleep and dreams, legendary creatures; psychics, fortune tellers, ghosts and faith healers. Are they real? A deception? A misunderstanding?

**Class 5-**The theory of evolution as an explanation of some of human psychology. Why many may believe in intelligent design, religious creation, and faith healing. How far can it go? UFOs? Alien abductions and visitations? Who makes the crop circles?

**Class 6-** Should you believe in Ouija Boards, divination and dowsing, astrology, cognitive dissonance theory, and conspiracy theories? The psychology of belief without evidence.

**Class 7 and 8-** Alternative medicine- homeopathy, anti-vaccination movement, ear candles, acupuncture, and science based medicine. What medical advice should you follow? And why? Is there a danger in following alternative treatments?

**Class 9-** Super foods, environmental issues, eating insects, genetically modified food, food fads and diets. With all the changing advice, how can you know what is really healthy?

**Class 10-** What does it take to be lucky? To be happy? How what we believe about the world may be out of date (Gapminder) Final class game on the whole semester—with prizes!

## **Bio for Gail Knapp, Ph.D., J.D. PRP—**

Gail retired after teaching psychology for 38 years in a Michigan community college. During that time she was vice president of the faculty association for 7 years which made her chair of the college's academic decision making body. She was also the author of two psychology textbook Instructor Manuals, and the advisor and Michigan state coordinator for the Phi Theta Kappa honor society for twelve years. While her family still includes one dog and three cats, she no longer breeds and shows Brussels Griffons and Great Pyrenees dogs and has retired as a dog show judge after many years in the ring.

She moved to Las Vegas to escape the snow and ice, and because she had fallen in love with the city during a regular summer visit for an annual conference about the topics we will be covering in this class. She still attends this conference every fall. The conference was about the use of science and evidence to study the truth of claims. It is that interest that sparked the creation of the Perception v. Reality Course for OLLI that was renamed "Scientific Skepticism" and has been part of the OLLI courses for the past eight years. This course includes as much actual testing of claims as it is reasonable to do in our OLLI classroom. Where it isn't possible to actually test the claims ourselves, written and video evidence will be used.

Her belief in active learning comes from her academic work including earning degrees in psychology: a B.A. from Stony Brook and M.A. from Hofstra Universities in New York and a Ph.D. from Michigan State University. In all of her OLLI classes, she prepares a PowerPoint each week that includes links to references that provide more information on the topic for that class. These PowerPoints are emailed to all members of the class each week, so that class members can pursue more information about the topic if they wish to do so on their own.

She passed the examinations to become a professionally registered parliamentarian eighteen years ago, and occasionally serves clients by helping them with procedure at their meetings or with their bylaws. Currently she is the past president of the Nevada State Association of Parliamentarians, and a member of two local parliamentary organizations. She is also the vice-chair of the National Association of Parliamentarians Commission on Credentialing that is rewriting the testing for individuals to become registered and professionally registered parliamentarians. Each year she teaches a summer session on basic parliamentary procedure for OLLI.

Gail demonstrated her love of lifelong learning by studying for a law degree on the weekends, and passing the Michigan Bar at age 62. She has been married to Lynn for 40 years and has an adult daughter and one granddaughter living in Michigan. She has taught the Scientific Skepticism class, Topics in Psychology and the Parliamentary Procedure courses for OLLI during the past 8 years; has served as a mentor; and has served as chair of the curriculum committee for one year after being a member for several years. She is now on the OLLI Steering Council where she serves as the secretary.