

ONLINE COURSE



LIFE IN THE ABYSS

James O'Leary

Session I

Monday, 9:30 a.m. (begins September 11)

Fee: \$70

We live on an ocean planet, and below the waves is an alien world where 99% of Earth's life exists. This course examines life in the largest, but least studied, place on the planet—oceans. Explore the deepest, darkest place on Earth, the ocean abyss, where life thrives under pressures beyond what humans can endure. Meet some of the planet's most wondrous creatures—glow-in-the-dark jellyfish, giant squid, the amazing octopus, and enormous whales, hunted for centuries with millions slaughtered. We now recognize octopuses and whales as sentient creatures and have come to understand their life cycles and natural behaviors. Two miles and more down, steaming hot water seeps from the ocean floor where extraordinary life forms swarm nearby, flourishing in a dark scorching environment where sunlight never reaches. Come explore the most extreme life on Earth.

Jim O'Leary served as chief space and Earth science specialist for Baltimore's Maryland Science Center, developing planetarium programs, IMAX films, science exhibits and educator workshops, and appeared many times as a science expert on TV and radio. He oversaw renovation of MSC's rooftop Observatory observatory and its 1927-era telescope and received the Excellence in Outreach Award from NASA and, for 12 years, hosted "Skywatch" on WYPR.



HONEYBEES AND THEIR HIVES

Jody Johnson

Sessions I & II

Thursday, 9:30 a.m. (begins September 14)

Fee: \$140 (\$70 for each session)

In this course, students will learn the complex world of the honeybee along with the care and maintenance of honeybee hives. To understand the honeybees and their hives, we will discuss the evolution of pollination, the symbiosis between plants and animals, and the radiation of the honeybee subspecies throughout the world. The caste system, communication system, and cooperative social behavior also informs as to how this species succeeds as a cavity dweller. Outside pressures, such as habitat loss, invasive species, nutritional requirements, and pesticides, can compromise health or even destroy the hive if not mitigated. This keystone species is an environmental telltale for ecosystem soundness but learning how to read the signs of health within a hive takes astute observations and perseverance.

Jody Johnson, Ph.D., is a honeybee research scientist and educator in environmental science, physical science, and chemistry. Outside of courses, she has given 70+ presentations in 10 U.S. states. She immerses herself in community outreach by promoting pollinators in farming communities, conservation projects, and welcoming bee-interested people to visit her hives. Recent work has involved conserving elephants in Tanzania using honeybees to deter deadly human-elephant conflict.



ARTIFICIAL INTELLIGENCE—OVERVIEW, APPLICATIONS, AND ETHICAL DILEMMAS

Guillermo Warley



THE ROLE OF EPIGENETICS IN THE FUTURE OF HEALTHCARE

Ann Farrell

Session I

Tuesday, 11:00 a.m. (September 19)

Fee: \$70

In this four-week course, we will look at artificial intelligence (AI) regarding historical perspective, definitions, and types. An introduction to AI methods and the technologies behind the tremendous advances of AI in recent years, students will examine potential applications, advantages, and disadvantages of artificial intelligence. We will discuss the limitations and challenges including security, privacy, and discrimination. We will take a brief look at applications like ChatGPT, Google Image Net, and other AI applications used for image generation, as well as AI-based search engines like Bard. What are the ethical considerations that should guide AI development? Are human values and the more general concept of “human well-being” paramount considerations in AI research? Should they be? How can they be incorporated? Is AI a boom or bust for human creativity, education, and the job market? These and other similar questions will hopefully be answered, or at least framed within a more realistic context, without marketing embellishments, during this class.

Guillermo Warley is an electrical engineer with graduate degrees in electronics and signal processing. He has 35 years of experience designing technology products for several industries. Guillermo is a Senior Life Member of IEEE (Institute for Electrical and Electronics Engineers), and the SSIT (Society for Social Implications of Technology). He has taught technology subjects at various Osher programs including Towson University, American University, and Johns Hopkins University. He has teaching experience at both graduate and undergraduate levels in electrical engineering topics.

Session II

Thursday, 1:00–2:30 p.m. (begins October 19)

Fee: \$70

***NOTE:** This course will meet for 90 minutes each class meeting.

Ongoing genetic research reinforces the pivotal role epigenetics plays in disease prediction, prevention, treatment and health maintenance. Epigenetics is the study of our role in how our genes work. Genes play an important role in our health; more so do our behaviors, environment, and life experiences associated with biological mechanisms we control that switch genes on and off. Unlike genetic changes, epigenetic changes are reversible. Genetics are not destiny! This course explores how we control our epigenome, including the “food as medicine” movement, recent research on the role of sleep, and the use of dietary supplements. Although there is some controversy and skepticism about far reaching claims, epigenetics can help people take more personal accountability for their health.

Ann Farrell, B.S.N. R.N., is a career-long patient advocate in roles as direct care provider, hospital and HealthIT vendor executive, and principal of Farrell Associates, a strategic healthcare consulting firm. Ann has been a popular featured speaker in numerous international and national forums and an instructor in prior Osher courses focused on the U.S. healthcare market and the medical industrial complex.