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Renowned evolutionary biologist Lynn Margulis, professor at UMass, dies at 73

By *Chad Cain*

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AMHERST - World renowned evolutionary biologist Lynn Margulis never stopped thinking about science, right up to her untimely death Tuesday at the age of 73.

Two weeks ago, in fact, colleagues say the professor of geosciences at the University of Massachusetts in Amherst was abuzz about an organism she had found in Puffer's Pond not far from campus.

"She thought it was special and was going to follow up on it right away," recalled Steve Goodwin, dean of the College of Natural Sciences at UMass Amherst. "That was her. She was always looking for the next new thing."

Margulis died at her home in Amherst following complications from a stroke last week.

"She was very energetic and very dynamic," recalled Michael Dolan, an adjunct professor in geosciences at UMass Amherst who had known Margulis for 30 years. "We all thought she would go on for some time."

An author who received a National Medal of Science from President Bill Clinton in 1999, Margulis was best known for her theory of symbiogenesis, which challenges a central tenet of neo-Darwinism that evolution is heavily dependent on natural selection. Margulis argued that inherited variation does not come from random mutations in genes but from long-lasting interaction between organisms.

She is also acknowledged for her contribution to James E. Lovelock's Gaia concept, which argues that the Earth itself is a living organism.

Margulis, who was once married to astronomer Carl Sagan, joined the UMass Amherst faculty in 1988 as a distinguished university professor of geosciences after teaching at Boston University for 22 years.

Though she was recognized around the world for her research, colleagues say Margulis was among the most down-to-earth people they've ever met.

"She was a great colleague, very collegial," said R. Mark Leckie, head of the geosciences

department at UMass Amherst. "She was just a really great person, compassionate and kind."

Leckie adds that Margulis loved teaching and interacting with students. Many of her current group of post-doctoral, doctoral and master's researchers have vowed to step up and assist in the completion of many of the ongoing projects Margulis was involved in.

Dolan said she went out of her way to promote students and give them opportunities. He recalls a time when she recruited a student who had a job washing dishes into her lab to work as a researcher. That student published many papers and is now attending the University of Massachusetts Medical School in Worcester.

"She influenced people's lives in that way and helped them move on in their careers," Dolan said.

Former student John Stolz credits Margulis with "opening up the world" for a Long Island boy who had never ventured outside the Northeast until he met her.

"I have the deepest respect for her," said Stolz, who was able to rub elbows with scientists throughout the world thanks to Margulis. "She opened up doors and opportunities."

Stolz, who completed his Ph.D. under Margulis' guidance at Boston University from 1978-84, is now a professor at Duquesne University in Pittsburgh, where he directs the Center for Environmental Research and Education.

He has stayed in touch with his mentor over the years, and had booked her as a guest speaker at an upcoming conference his department is hosting at Duquesne. He was one of the first people Margulis enlisted to help her uncover the mystery of the Puffer's Pond organism, a project Stolz vows to publish in her honor.

"I will miss her dearly," he said.

Goodwin marveled at Margulis' energy. She lived and breathed for her research, and was known to ride her bike to campus in all kinds of weather. Goodwin said she was riding up to the time of her stroke.

"The thing that comes to mind for me was how infectious her enthusiasm for science was," he said. "She loved talking about new ideas and was always so full of energy."

Goodwin adds that Margulis was so well-read in biology that she remembered facts that few even knew about. She was able to connect obscure facts to current research by simply tapping into her memory bank, Dolan said.

"She was really like a walking encyclopedia," he said.

Others called her brilliant, citing her ability to think outside the box and challenge existing ideas among her many contributions to science, particularly the symbiogenesis theory.

UMass Amherst Chancellor Robert C. Holub called her death a great loss for the campus family.

"She leaves us a legacy of academic accomplishment brought about by her original thought and tireless inquiry into multiple fields of science that look at how the world functions and how that magnificent world has developed over time," he said in a statement.

Margulis, a Chicago native, enrolled at the University of Chicago at 14 and graduated in 1957. She earned a master's in genetics and zoology at the University of Wisconsin in 1960 and a Ph.D. in genetics at the University of California, Berkeley, in 1965.

She has lectured widely in the U.S. and abroad, including Europe, Cuba, Israel, Japan and Mexico.

Her awards and honors include election to the National Academy of Sciences in 1983. She was a member of the American Academy of Arts and Sciences and the World Academy of Art and Science, an elected foreign member of the Russian Academy of Natural Sciences, and a fellow of the Massachusetts Academy of Sciences.

Margulis' publications span topics from cell biology to microbial evolution. She authored and co-authored hundreds of research papers, reviews, non-technical articles and many books, including "Symbiotic Planet: A New Look at Evolution" and "Acquiring Genomes: A Theory of the Origin of the Species."

In 1998, the Library of Congress announced that it would permanently archive her papers.

Margulis, also known for her efforts to make science understandable to non-scientists, was an ardent supporter of environmental causes. Several of her books were co-authored by her son, Dorion Sagan.

Margulis was also the co-founder of two international societies, Evolutionary Protistology and Symbiosis. She served on committees for the National Academy of Sciences, NASA, AAAS and the National Science Resource Center.

Chad Cain can be reached at ccain@gazettenet.com.

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