



Ryerson Almanac

A Newsletter from Brushwood Center at Ryerson Woods 🌿 Spring 2014

Biologist Beth Shapiro To Speak On Extinction at Smith Symposium on May 17

Beth Shapiro, an associate professor in biology at the University of California-Santa Cruz, will be the keynote speaker at the upcoming Smith Nature Symposium.

A former Rhodes Scholar and a 2009 MacArthur Fellow, Shapiro's work focuses on understanding how populations and species change through time in response to environmental alterations of their habitats. She analyzes genetic information isolated from fossilized and archived remains to learn what happened to iconic species that have become extinct, like mammoths and passenger pigeons.



Top: Beth Shapiro finds a 35,000-year-old horse skull frozen in the permafrost near Dawson City, Yukon Territory, Canada. Right: Polar bear skulls in the collections of the Zoological Institute, St. Petersburg, Russia. Shapiro sampled them for DNA to understand the relationship between brown bears and polar bears.



"I'm interested in understanding how species respond to climate change," says Shapiro. "Mammoths became extinct after the fast-warming event that came after the peak of the last Ice Age. If we want to understand how species will respond to what's happening today, one way to do that is to look at previous periods of rapid climate change."

In 2012, Shapiro's work received a round of fresh attention when she was invited by Stewart Brand, the founder and long-time editor of the Whole Earth Catalog, to the Wyss Institute at Harvard to explore the technical plausibility of reviving the passenger pigeon through genomic engineering. Shapiro showed up with much of the molecular sequencing in hand, having already extracted DNA from bits of tissue

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Smith Nature Symposium Saturday, May 17, 2014, 5:30–9:00 p.m.

The event includes an art exhibition, reception, dinner, award presentation and keynote address. Tickets are \$175 for reception, dinner and award presentation with a discounted price of \$90 for those 30 and under. To attend Beth Shapiro's lecture without participating in other parts of the evening festivities, it's \$20 for Brushwood Center members and \$25 for non-members. Registration is required.

in the toepads of passenger pigeons archived in the collections of the Smithsonian Institution. In 2013, *National Geographic* and TEDx conducted a public conference on the possibilities of de-extinction; Shapiro's work was highlighted there and afterwards in multiple magazine and newspaper articles.

"The passenger pigeon has a weird ecology," says Shapiro. "Why did it ever become so insanely abundant in the first place? Did that last climate change make perfect habitat for it, or was its success more recent, maybe due to the transition of humans from hunting to agriculture? Knowing the bird's genome helps provide answers."

To learn more about the answers and about Shapiro's other investigations, come to this year's Smith Nature Symposium. This will be the 31st year that Brushwood Center has brought in a major voice in the field of science or conservation to speak at Ryerson Woods. Kenn Kaufman, Roger Tory Peterson, and David Allen Sibley were all keynote speakers in the past. The Smith Nature Symposium was named in honor of Ellen and Dutch Smith who had a weekend and summer cabin at Ryerson Woods.

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Keynote Address

What Killed the Mammoths? Ancient DNA and Mass Extinctions

presented by **Beth Shapiro**

What makes species go extinct? Can you clone a mammoth? In her lab at the University of California–Santa Cruz, evolutionary biologist Beth Shapiro analyzes the genes of ancient plants and animals to trace the complex relationship between environment, extinction and the evolution of species. An international expert on ancient DNA, Shapiro has worked with DNA from mammoths, dodos, passenger pigeons, and other extinct species.



AWARD RECIPIENT Joel Greenberg

Author and naturalist Joel Greenberg shares his love and knowledge of nature and conservation in the Chicago region through his writing. His most recent book, *A Feathered River Across the Sky*, is an account of the passenger pigeon which went extinct in 1914. Recognized as "a brilliant, important, haunting and poignant book" by the *Chicago Tribune*, it provides a cautionary tale for us today.



ART EXHIBITION Moving Targets

A collaborative art installation by Pittsburgh artists Ann Rosenthal and Staffi Domike, *Moving Targets* links the artists' forced family migrations to the story of the passenger pigeon through a shared visual language, maps and creative research.