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# MIZZOU

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[Home](#) » [Winter 2012](#) » [Around the Columns](#) » Charles, meet Lucy

## Around the Columns

### Charles, meet Lucy

Charles Darwin would have loved to meet Lucy, aka *Australopithecus afarensis*, or AL-288-1 for short. Lucy is the 3.5 million-year-old hominid whose skeleton unearthed in Ethiopia in 1972 shows that early human ancestors walked upright. Her personal effects suggest she also used tools. Darwin would've been thrilled to know she walked tall and knew how to handle a stick, in accordance with his theories. But she would have had a big surprise for him, too, says Carol Ward, professor of integrative anatomy in MU's Department of Pathology and Anatomical Sciences.



Carol Ward leads a team that is studying this ancient human foot bone from Ethiopia. It has provided clues about early human locomotion. Photo courtesy of Carol Ward and Elizabeth Harmon

During the 2011 Corps of Discovery lecture Sept. 6 on campus, Ward explained how recent discoveries including Lucy are altering the chart of human evolution. The lecture series, named for the Lewis and Clark expedition, highlights MU faculty who are at the forefront of learning.

Ward paints a picture of Darwin pondering evolution in the 1800s, before a fossil record had been compiled for humans. He looked at our large brains, facile hands and upright locomotion, and theorized that these characteristics evolved as a package for making and using tools. But recently discovered fossils show that ancestral humans' posture and predilection for tools came along millions of years before our all-important large brain developed. Ward points at her own head. "This is not about using tools," she says. Darwin missed the boat on that one.




Ward says it was when our immediate precursor, *Homo erectus*, arrived that the brain started

growing rapidly. But why? She and her colleagues theorize that it takes a big brain to handle humanity's social situation. "Being social is the fundamental feature of our daily lives," she says. We spend a great deal of time thinking about friends, family, whether the boss is mad, or how to find that ideal guy or gal. "No other animals have been able to live in large groups, build skyscrapers, put people into space, cure diseases," she says.

Mastering tools may have helped our ancestors manage their environments to find food and avoid predators, Ward says, but with that under control, it was possible to develop more social savvy powered by bigger brains. Increased gray matter fostered empathy, foresight, planning and collaboration. That starts a "positive feedback loop," Ward says. "The better we negotiate the physical world, the more social we can become. The more social we become, the better we are at dealing with the physical world. It became an arms race between intelligence and brain size and social capability that leads us to who we are today.

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