Paleontologist: Dr. Louise Leakey
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BY STUART THORNTON

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Louise is a third-generation paleontologist. Her grandparents, Louis and Mary Leakey, led expeditions in Olduvai Gorge, Tanzania. Her parents, Richard and Meave Leakey, focused their research on the fossil-rich Turkana Basin in Kenya.

Louise often works with her parents as she continues to study the ancient history of the Turkana Basin. She is an assistant research professor at the State University of New York at Stony Brook and is the director of public education and outreach for the Turkana Basin Institute in Nariobi, Kenya.

Along with her mother, Louise is a National Geographic Explorer-in-Residence.

EARLY WORK

Louise grew up in Nairobi, Kenya, and was able to accompany her parents on expeditions to the Lake Turkana area.

"Everybody enjoys being out-and-about as a small child looking for fossils, so it is second-nature to anyone to do that," Louise says. "I guess I was able to keep at it longer than most."

One of Louise’s most memorable early experiences was when a team led by her father, Richard, found "Turkana Boy," a nearly complete, 1.5 million-year-old skeleton of the hominid Homo erectus.

"At age 12, the discovery of the Homo erectus from the west side of Turkana was a very exciting time, because we were at that site for quite a long period," Louise says. "We were able to engage and help and excavate it. There was a real sense of excitement about that excavation."

Even though her family is world-renowned for their work in paleontology, Louise never felt pressured to follow her parents into the field.

"They never told me that is what I should do," she says. "I made this decision myself."

Louise left Africa for a few years to attain her PhD in biology at University College London in London, England, but
soon returned to Kenya, and the Turkana Basin.

**MOST EXCITING PART OF YOUR WORK**

These days, Louise spends a lot of time lecturing, fundraising, and raising her two children, but she still gets to the Turkana Basin in the summer for *field work*.

"Being up there is certainly very exciting to get away from it all," she says. "It is a great pleasure to be hands-on and do it."

**MOST DEMANDING PART OF YOUR WORK**

"Trying to fit it all in, I would think. It's rather all over the place doing so many different things: field work, lectures, fundraising, and being a mother. Trying to raise support for the Institute, which we are working on now, takes quite a lot of attention and effort. It is quite demanding at this point in time."

**HOW DO YOU DEFINE GEOGRAPHY?**

"I think of it more in terms of where things are in the world. The *physical geography* has always interested me. The mountains and lakes and their influences on local populations. Why you find certain things in certain places. That's how I see it in my mind."

**GEO-CONNECTION**

Louise explains that the *geography* of the Turkana Basin is the reason so many fossils are found there.

"The *rift valley* has a major influence in terms of those fossils that we find," she says. "It is because of the *tectonic* movements forcing these old layers back up to the surface again. Things are then *eroded* out, and we can then find the little bits of bone fragments on the surface and know where it fits in the excavation."

Geographic tools, including GPS and GIS, are very important to paleontologists like Louise. Using GPS, scientists can pinpoint the location of study sites that they can later plot on maps, a process called *geo-referencing*. Today, paleontologists have the ability to create geo-reference points for fossils found decades ago, allowing the data to be displayed in databases, online maps, and websites.

"Any fossil that is found is always marked with a GPS fix, so we have a reference and can get back to it," Louise says. "It is also photographed digitally ... In addition, a lot of the earlier collections that we had made in the '70s and '80s, when we didn't have GPS, you can bring [those images] into the overall map, the bigger picture, using GIS because you can geo-reference the photographs and actually place those points quite accurately into the new system."

**SO, YOU WANT TO BE A ... PALEONTOLOGIST**

To prepare for a career as a paleontologist, Louise suggests taking *anatomy*, *geography*, *geology*, and, especially, *biology* courses.

"I think [taking] biology in terms of just understanding a variety of organisms, including how they may have changed through time and why we have certain species present today and others that are not present," Louise says.

**GET INVOLVED**

For college students, Louise suggests looking into attending a field school, such as the Turkana Basin Institute Field School. "Obviously, that is exciting and a real good experience. It opens the doors into getting involved."

**VOCABULARY**

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<thead>
<tr>
<th>Term</th>
<th>Part of Speech</th>
<th>Definition</th>
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<tbody>
<tr>
<td>accompany</td>
<td>verb</td>
<td>to join with someone or something.</td>
</tr>
<tr>
<td>anatomy</td>
<td>noun</td>
<td>structure of an organism.</td>
</tr>
<tr>
<td>ancient</td>
<td>adjective</td>
<td>very old.</td>
</tr>
<tr>
<td>biology</td>
<td>noun</td>
<td>study of living things.</td>
</tr>
<tr>
<td>bone</td>
<td>adjective, noun</td>
<td>structure composing the skeleton of vertebrate animals.</td>
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<tr>
<td>data</td>
<td>plural noun</td>
<td>(singular: datum) information collected during a scientific study.</td>
</tr>
<tr>
<td>database</td>
<td>noun</td>
<td>a collection of information for analysis and interpretation.</td>
</tr>
<tr>
<td>digital</td>
<td>adjective</td>
<td>having to do with numbers (or digits), often in a format used by computers.</td>
</tr>
<tr>
<td>engage</td>
<td>verb</td>
<td>to become actively involved with something.</td>
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<tr>
<td>erode</td>
<td>verb</td>
<td>to wear away.</td>
</tr>
<tr>
<td>excavate</td>
<td>verb</td>
<td>to expose by digging.</td>
</tr>
<tr>
<td>expedition</td>
<td>noun</td>
<td>journey with a specific purpose, such as exploration.</td>
</tr>
<tr>
<td>Explorer-in-Residence</td>
<td>noun</td>
<td>pre-eminent explorers and scientists collaborating with the National Geographic Society to make groundbreaking discoveries that generate critical scientific information, conservation-related initiatives and compelling stories.</td>
</tr>
<tr>
<td>field work</td>
<td>noun</td>
<td>scientific studies done outside of a lab, classroom, or office.</td>
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<tr>
<td>fossil</td>
<td>noun</td>
<td>remnant, impression, or trace of an ancient organism.</td>
</tr>
<tr>
<td>fundraiser</td>
<td>noun</td>
<td>person responsible for securing money or other funds for an organization or purpose.</td>
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<tr>
<td>geographic</td>
<td>noun</td>
<td>any system for capturing, storing, checking, and displaying data related to positions on the Earth's surface.</td>
</tr>
<tr>
<td>information system (GIS)</td>
<td>noun</td>
<td>study of places and the relationships between people and their environments.</td>
</tr>
<tr>
<td>geography</td>
<td>noun</td>
<td>study of the physical history of the Earth, its composition, its structure, and the processes that form and change it.</td>
</tr>
<tr>
<td>georeferencing</td>
<td>noun</td>
<td>process of locating something in physical space, usually using coordinates.</td>
</tr>
<tr>
<td>Global Positioning System (GPS)</td>
<td>noun</td>
<td>system of satellites and receiving devices used to determine the location of something on Earth.</td>
</tr>
<tr>
<td>hominid</td>
<td>noun</td>
<td>biological family of primates, including humans, chimpanzees, gorillas, and orangutans, and their ancestors.</td>
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</tbody>
</table>
### Homosapiens

**Homo erectus**
- **noun**
- (1.8-1.3 million years ago) species of primates (hominid) whose fossils have been found in Africa and Asia.

**lecture**
- **noun**
- speech delivered in front of a class or audience, usually to instruct or impart knowledge.

**location**
- **noun**
- position of a particular point on the surface of the Earth.

**map**
- **noun**
- symbolic representation of selected characteristics of a place, usually drawn on a flat surface.

**paleontologist**
- **noun**
- person who studies fossils and life from early geologic periods.

**PhD**
- **noun**
- (doctor of philosophy) highest degree offered by most graduate schools.

**physical geography**
- **noun**
- study of the natural features and processes of the Earth.

**renowned**
- **adjective**
- famous or honored.

**rift valley**
- **noun**
- depression in the ground caused by the Earth's crust spreading apart.

**skeleton**
- **noun**
- bones of a body.

**species**
- **noun**
- group of similar organisms that can reproduce with each other.

**tectonic**
- **adjective**
- having to do with the structure of the Earth’s crust.

**Turkana Boy**
- **noun**
- nearly complete skeleton of an approximately 1.5 million-year-old hominid (either *Homo erectus* or *Homo ergaster*) found near Lake Turkana, Kenya, in 1984.

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**For Further Exploration**

**Websites**
- National Geographic Explorers: Meave and Louise Leakey, Paleontologists
- National Geographic News: Anthropologist Louise Leakey Carries "Family Banner"
- Turkana Basin Institute
- African Fossils: An Initiative of Louise Leakey

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