

Uncover Archaeological Treasures

EDITOR'S NOTE:

The study of science is often underrepresented in discussions on education abroad and international exchange as traditionally these areas were established in humanities and social science disciplines. This article is the second in an occasional feature series on science in international higher education. The first article, on marine biology, appeared in the March/April 2007 issue.



University of Toronto's field school students Margaret Maitland and Christa Morgan working on an ancient mosaic with the university's Tell Madaba Project.

TIM HARRISON

Education outside the classroom can broaden learning in unimaginable ways. This is especially true in fields like archaeology, where fieldwork excavating artifacts from the past can unlock clues to past civilizations and be a powerful force for promoting intercultural learning as students travel with their professors to further discoveries in archaeological science.

BY NICOLE BRANAN

SILHOUETTED against the rising sun, Egypt's Great Pyramids pierce the pale-blue morning sky as Emily O'Dell leaves her home in Giza to make her daily way to work. Towering above the ancient city atop the Giza Plateau, the three majestic monuments cast their enormous shadows over the desert that extends to the horizon. As the African sun slowly starts to warm the fresh morning air, O'Dell climbs the steep hill leading up to the plateau. Past the Great Pyramid of Khufu—the last remaining monument of the ancient world's seven wonders—lies the Western Cemetery where she and her colleagues will spend the day excavating tombs that are more than 4,000 years old and harbor unseen treasures of the ancient Egyptian empire.

Discovery in the Field

For hundreds of years, archaeologists from all over the world have come to Giza trying to unlock the secrets of the pyramids and their surroundings. O'Dell, a Ph.D. student in Brown University's Egyptology department, is one of them. Eleven months out of the year, she lives a typical graduate student life, spending 10-hour days sifting through the Egyptology Collection of Brown University's library, teaching undergraduate classes, and conducting research for her dissertation. But from December to February every year, she exchanges her apartment in Rhode Island for a villa in Giza on the west bank of the Nile, just opposite Cairo. As chief epigrapher of the Abu Bakr Epigraphic Survey—a joint expedition between Cairo University and Brown University—O'Dell directs the transcription of all ancient writings and trains her Egyptian and American colleagues in the discipline. "Not only is it a great honor to be invited to such an expedition, it is also nice to be part of a joint project between two countries because we can learn so much from one another," O'Dell said.



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Archaeology Abroad

The Abu Bakr Epigraphic Survey—named after the famous Egyptologist Abdel- Moneim Abu Bakr, who began to excavate the cemetery between 1960 and 1976—belonged solely to Cairo University until Brown joined the project seven years ago. Since then, Edward Brovanski, co-director of the expedition and adjunct professor at Brown, has brought on average three graduate students to Giza every year to participate in the daily excavations. "These expeditions provide an opportunity for our Egyptology students to gain field experience," he said. "I believe this hands-on training will serve them well in the future, for example when the occasion arises for them to head an expedition themselves."

Universities around the globe conduct archaeology field programs that take graduate and undergraduate students to the world's archaeological hotspots where they help unlock the secrets of past civilizations. These projects offer a unique teaching opportunity because "students live in their classrooms and are constantly surrounded

Emily O'Dell, a doctoral student in Egyptology at Brown University, revealing one of the bodies found last year in the Abu Bakr Cemetery, and below, on the job with members of the excavation team near the Abu Bakr cemetery.



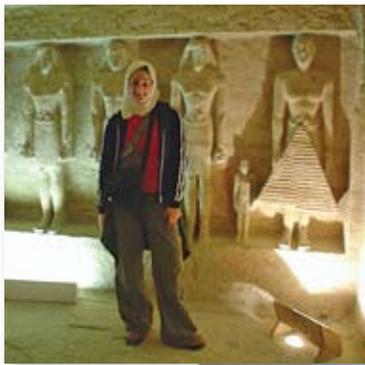
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by the subject matter. That makes the learning a lot more immediate and constant,” commented Ben Thomas, education and outreach coordinator of the Archaeological Institute of America in Boston, Massachusetts.

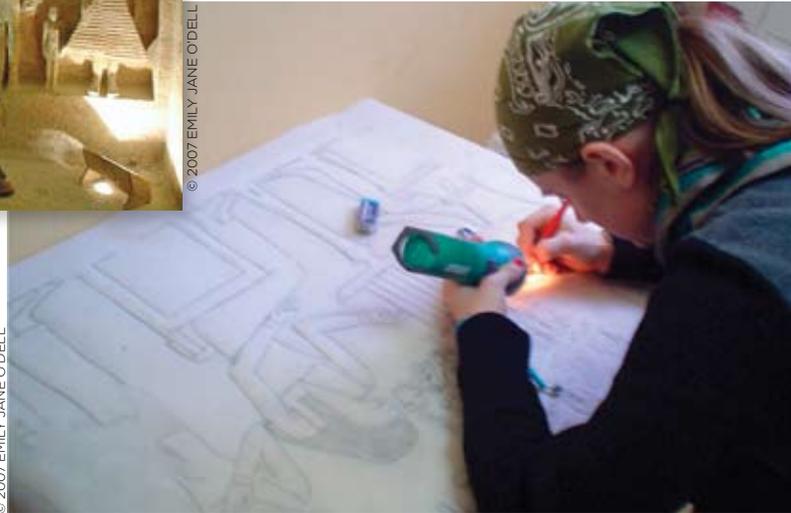
Ancient Egypt has been a fruitful field for archaeologists, but many aspects of the long-standing civilization are still a mystery. Clues hidden in tomb chambers such as those found at the Western Cemetery add pages to the book that tells the story of ancient Egyptian life. The tombs, some of which are from the time when the pyramids were built, around 2,500 B.C., provide a glimpse into the life of the common people. “We hear a lot about the precious jewelry and gold of the kings and the royal family, but we don’t know so much about burials of people who belonged to the lower classes. This cemetery tells us something about the working class and the middle class. For example, one of the tombs is that of a launderer who may have been responsible for doing the royal laundry,” said O’Dell.

All of Abu Bakr’s original records of the cemetery have been lost and the Epigraphic Survey resumed work there to record and publish the artifacts. When O’Dell and her colleagues find a tomb, they cover its walls with huge sheets of tracing paper and record the writing, pictures and reliefs. Whether they are above ground or tens of feet beneath the surface, the tombs are completely dark. Holding a flashlight in one hand, the epigraphers meticulously trace all inscriptions line by line. “It’s glamorous and romantic, but it is also really hard work,” O’Dell said. And the job requires a lot of skill and knowledge. O’Dell, who was still an undergraduate student when she first joined the expeditions, is fluent in Arabic, German, and French and converses in the different languages with her trainees. But the hard work pays off—several artifacts from the cemetery have already made their way into the Egyptian Museum in Cairo. “Working in this cemetery and finding inscribed offering stands, bodies, beer jars, and other artifacts emerge from the ground, and then seeing statues from the same cemetery displayed with perfect museum lighting at an exhibit opening is a truly incredible experience,” O’Dell said.

Students who participate in the Abu Bakr Epigraphic Survey learn not only about ancient Egypt but also about the country’s contemporary society. “An important aspect of the project is for our students to become familiar with the local people and the country in which they are guests,” Brovarski said. During her past expeditions, O’Dell has had plenty of opportunities to immerse herself in today’s Egyptian culture. “As my Arabic has improved each year, I have been able to learn more and more about the people I work with in Egypt who do not speak English. That includes [learning about] everything from the members of their families and their cultural traditions to their



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Emily O’Dell in the tomb of Qar on the Giza Plateau and doing epigraphy in the *Cairo Magazine* on the Giza Plateau.

various tastes in music,” she said. “We also have lengthy conversations about how our countries stereotype each other and often let out a collective sigh and the occasional chuckle at cultural misunderstandings and complicated politics.”



O’Dell with Professor Leonard Lesko in the Abu Bakr Cemetery

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Connecting Cultures

Intercultural exchange is an important component of other archaeology education abroad programs as well. “Archaeology provides the opportunity to live, work, and interact with both the present and past cultures of the area in which you are working—that’s one of its great benefits,” said Andrew Graham, a Ph.D. student at the University of Toronto and staff member of the school’s Tell Madaba Archaeological Project in central Jordan. For the past decade, Graham has been part of international teams that conduct annual excavations in the ancient

city of Madaba. The teams consist of staff members, including graduate students and postdoctoral researchers, as well as undergraduates from a field school that introduces them to archaeology and life in the near east. “All of our students come away enriched, having lived and worked in a different culture,” Graham said. “We are very cognizant about integrating our students into the local population and providing them with opportunities to interact with the people.”

The experience of living and working in Madaba has been a major influence in Graham’s life as well. “I have made some life-long friends in Jordan who I am very close to,” he said. When an Arab couple moved in next door to his home in Ontario, he was able to communicate with his new neighbors in Arabic. “That gave us a connection that we probably wouldn’t have had if I hadn’t spent time in the Near East.”

Madaba is one of the few unique places in the world whose history can be traced back to their birth in the early Bronze Age, more than five millennia ago. Today the city is home to about 60,000 people living a modern, twenty-first century life. But underneath its bustling streets lie remains that reveal clues about the origins and evolution of urban life. Madaba's surface is the portal to a journey through time, from the days of the powerful rule of the Ottoman empire through biblical times and back to almost 3,800 B.C., when people first learned to melt copper and tin to make durable bronze weapons and tools. "Because Madaba has an almost continuous 5,000-plus-year history, it offers an ideal opportunity to trace the life of a city from the time when the first cities came into existence until today," said Tim Harrison, associate professor at the University of Toronto and director of the Tell Madaba Archaeological Project.

Because Madaba's various inhabitants kept building on top of the ruins left behind by the preceding town, they created mounts "similar to North American landfills." Harrison and his teams designed their excavation strategies such that they could get access to cultural remains from each of the principal periods in the history of the town. After cutting trenches through the different layers of debris, they excavate anything from the ruins of houses and household items to animal bones and plant material that provide clues about what kind of food the ancient inhabitants consumed. From the evidence the teams gathered over the years, they saw an oscillating pattern emerge. "Over the past 5,000 years there were periods when the town grew quite large and periods when it shrunk to a very small village size," Harrison explained. Even though the teams found evidence that climate changes influenced the prosperity of the city, a much more potent factor was the way its inhabitants treated their environment. "Exploitation of the local fauna and flora, such as stripping the soil and exhausting the local water supply, had a devastating impact on them." This wasn't necessarily due to carelessness or lack of knowledge, Harrison explained. Instead, outside forces, such as political factors, came into play and often overrode environmentally sustainable policies and traditions. Harrison and his teams discovered that the most destructive cycles coincided with periods in which the city was incorporated into a larger framework, such as a state or an empire. "In larger structures there is pressure to increase production. That's why the residents ended up overextending what their local ecology could sustain, and as a result their culture collapsed." The

first cycle lasted more than a thousand years, but subsequent ones have been much shorter. Harrison suspects that the current cycle will complete itself over the next few hundred years, "because the policies that the region is engaging in now definitely repeat the same kinds of mistakes that were repeated in antiquity."

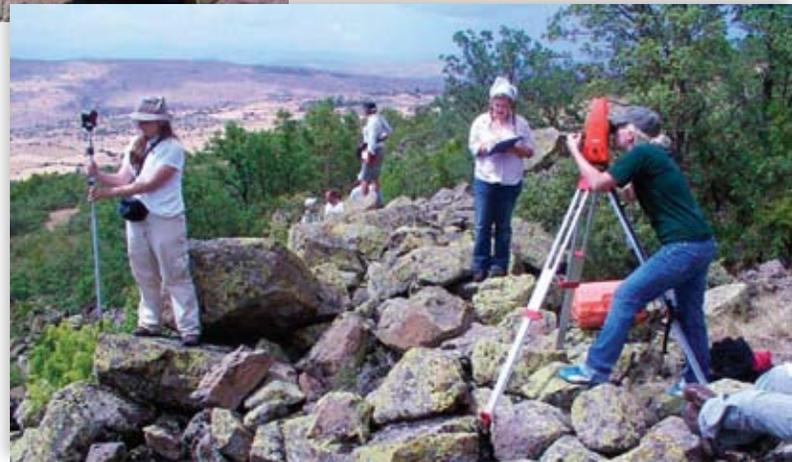
Madaba was a contested territory in ancient times and often switched hands between different kingdoms. As Christianity spread during the first centuries A.D., its inhabitants erected churches decorated with elaborate mosaics that eventually gave it the name "City of Mosaics." Madaba's Map of Palestine, a 6th century Byzantine mosaic composed of more than two million pieces of colored stone that form a complete map of the Holy Land, is one of the most famous ancient artifacts ever found. Mosaics have been a major find of Harrison's teams as well. The layer of their excavations dating to that time frame harbored a large mansion that even had preserved parts of the second story with mosaic floors in various rooms, including those on the second floor. "This mansion had been built against the edge of the city's acropolis, which enabled it to be preserved so well." Fragments of the mosaics had been found earlier by a group of archaeologists that had worked at the site in the 1980s

and that had moved a portion of the stones into the local museum. Over the past few years, Harrison's teams began reinstalling the pieces into the place where they had originally been found, the first step of a long-term project the teams are working on in collaboration with the Jordanian government. "Eventually we want to integrate these mosaics into a public archaeological park in which they would be preserved and visible to the public," Harrison explained.



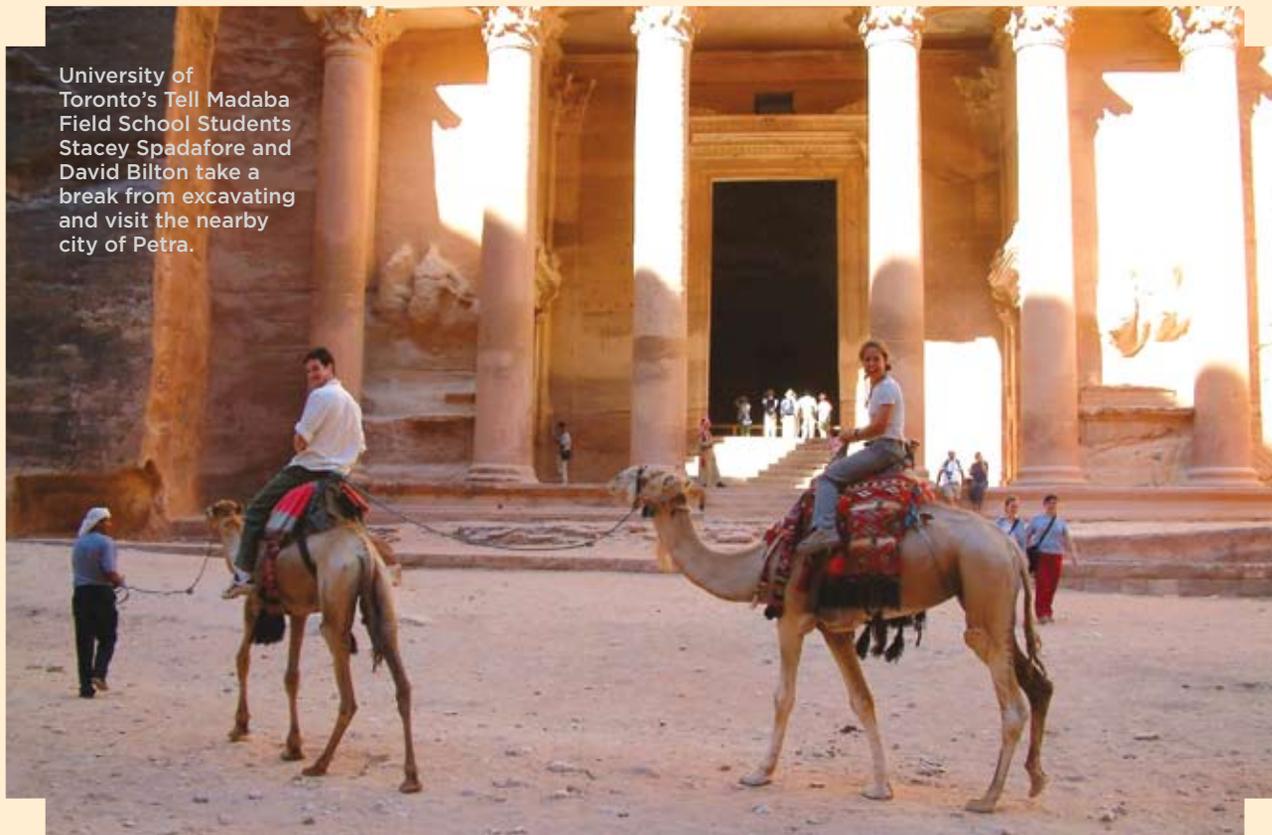
NICHOLAS K. RAUJH

Anatolian Archaeology Field School students Sarina Cirit, Christine Yang, and Philip Baute (left to right) are surveying the Anatolian mountain highlands on the South Turkish coast using electronic mapping equipment



Anatolian Archaeology Field School students Alicia Jackson, Lillian Caldwell, and Brittany Haynes (from left to right) are surveying the Anatolian mountain highlands on the South Turkish coast using electronic mapping equipment.

University of Toronto's Tell Madaba Field School Students Stacey Spadafore and David Bilton take a break from excavating and visit the nearby city of Petra.



TIM HARRISON

Excavation on a Greater Scale

While excavations like the Madaba project focus on a particular site, some archaeological expeditions survey large areas of land. One example is Purdue University's Anatolian Archaeology Field School that takes students on expeditions to Turkey every year. Stretching 60 miles along the Mediterranean coast north of Cyprus and reaching about 30 miles inland, the field school's survey region covers terrain from fertile coastal lowlands to dry, rugged mountain ranges covered with scrub. Even in such sparsely inhabited regions, field school students have a lot of interaction with the local population. "During our surveys we basically walk through people's backyards, so it's unavoidable for the students to meet the locals and interact with them," said Nicholas Rauh, associate professor at Purdue University and field school director. The group has to work closely with the local police and various municipal authorities in the region. Turkish law requires Rauh to submit a complete dossier every year requesting a permit to dig in Turkey, and over the entire duration of the expedition the group is under close supervision of a government representative assigned to them. In a country famous for its hospitality, the natives routinely invite field school students to their houses and offer food and drink. "Every time we went to a store the owner insisted on bringing us tea," remembered Matt Kramer, a 2006 Anatolian field school alumnus. While such close interaction fostered a sense of

community, it also exposed rifts between different cultures and belief systems, Kramer said, "Our Turkish hosts often got offended when one of our group members declined to drink their tea because his religion didn't allow him to consume caffeine."

Rauh and his students have surveyed the region on the south Turkish coast in the Anatolian part of the country for the past decade. The teams have found evidence of human occupation in the region from prehistoric times through the first millennium A.D. For archaeologists, Turkey is a treasure chest layered with ancient history. Located at the junction between Europe and Asia, the country has been the cradle for several major civilizations. Using geographic information systems and global positioning systems, the teams have produced digital maps of the region and have discovered multiple Roman villages, among them the colony of Juliosebaste, a prominent town from the early Roman through the Byzantine era. "We are putting all of this on the map for the benefit of the Turkish government, so they can make decisions about what needs to be protected," Rauh said. The teams' discoveries indicate that the region became inhabited by the seventh century B.C., reached its peak during the early Roman era, between the first and the third century A.D., and declined rapidly after the Arab invasions in 650 A.D.

Even though Purdue's field school students have encountered tombs, ruined housing and bath complexes, and inscribed statues,

their main findings consist of ancient pottery fragments—and they have learned a lot from them. “We have discovered that this region was famous for its raisin wine production in antiquity,” Rauh explained. Jars produced in the area have shown up as far away as Spain, Italy, and all the way to the Red Sea, suggesting an active export of the beverage. The teams’ pottery collection is currently stored at the Alanya Archaeological Museum in Turkey.

Besides teaching his students the field methods that are employed in Anatolian archaeology, Rauh also introduces them to Turkey’s most important and best-preserved classical sites, such as the ancient city of Ephesus. Kramer remembered that walking along the city’s ancient Roman streets, past such sites as the fully reconstructed façade of the famous Library of Celsus, was like time travel. “Seeing these sites was incredible. I had spent so much time studying them in books and then finally seeing the real thing really struck me.”

Revealing Societies of the Past

Impressive ancient buildings such as those in Ephesus remind of the power and superiority of the Roman Empire, but they also raise questions about how this vast territory was managed by a central power. Nicola Terrenato, associate professor at the University of North Carolina at Chapel Hill and his students have dug up evidence in Italy that gave rise to some new theories about power and local politics in the ancient Rome. Terrenato directs two education abroad programs, UNC’s field school in classical archaeology and the American Academy in Rome’s summer program in archaeology. While the field school introduces undergraduate students to archaeological field methods, the academy offers an advanced training program for graduate students.

Several of the teams’ expeditions have focused on the Donoratico, a settlement in northern Tuscany that Terrenato first surveyed when he was a graduate student at the University of Pisa. At the time, the settlement had been known as a medieval castle but to his surprise, Terrenato found pottery at the site dating back to the third century B.C.—more than a thousand years before the castle was supposed to have been first occupied. He didn’t immediately get a chance to do further investigations at the site but his interest was piqued, and a decade later he took his field school students to the site and together they began excavating the area surrounding the castle.

Terrenato and his teams found out that the structure had originally been an Etruscan castle, built by the forebearers of the Romans who inhabited ancient Italy since prehistoric times and developed one of the earliest civilizations in the Mediterranean country. Though unusual, it was not unprecedented to find a medieval settlement on top of a fortified Etruscan castle, Terrenato explained. “But what made this site absolutely special was that this castle continued

to be used after the Etruscans in that area had been conquered by Rome.” Moreover, it contained a beautiful fountain that was built onto it after the Etruscans’ defeat. “That was an enormous surprise and it opened up the question why the Romans decided to recycle this site into their settlement system,” Terrenato said.

One interesting theory is that rather than completely extinguishing other cultures, the Romans may have sometimes cooperated with non-Roman populations. Archaeologists know that some Etruscan aristocrats, who survived the conquest, subsequently became good friends with the Romans. And because Etruscan castles were symbols of power, it is possible that keeping this castle and beautifying it was a way for these aristocrats of saying to the locals, “We are still Etruscans, we are still the old people that you used to know, and even though we have gone to Rome and speak Latin, we are still part of the old tradition,” Terrenato explained. This suggests that the Romans were

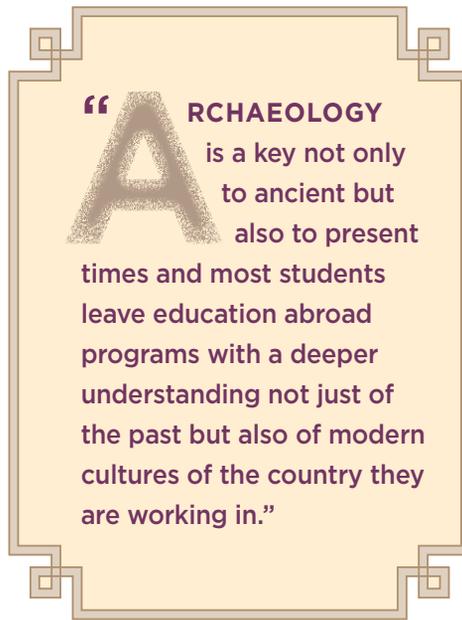
much less brutal in their quest to expand their borders than previously thought and may have allowed other cultures to keep certain aspects of their traditions. “This is one example where students working in the field with me really made a big difference. Together we brought something to light that hadn’t been seen before.”

Building Teamwork Among Students

Whether they take place in Italy or anywhere else in the world, archaeological excavations require hard physical work and often take place in tough climates, but education abroad programs in the discipline challenge students in many more ways. Teamwork, for example, is essential for the success of an expedition. “The most

important skill I learned was how to work well and communicate with a variety of different personalities,” said Walter McCall, who participated in several of Terrenato’s expeditions to Italy before directing his own archaeological venture. Ben Thomas, the education and outreach coordinator of the Archaeological Institute of America, observed that archaeology field programs are often the first extended stay outside of the United States for the students and participation requires them to “move out of their comfort zone and learn to live in a foreign country and culture.”

Thomas is a former staff member of Boston University’s Belize Archaeological Field School, a semester-long education abroad program that explores the ancient Maya culture in the Central American country. Tucked away on the Caribbean coast between Mexico’s southern Yucatan peninsula and Honduras, Belize was once home to the classic Mayan culture, which thrived from about 250 to 900 A.D. throughout Mesoamerica. Archaeologists have discovered dozens of majestic Maya monuments protruding from the Belizean jungle, their walls covered in hieroglyphs that tell the stories of royal families and their



adventures in fierce and bloody warfare. But a lot of insights into classic Mayan life lie beneath the surface, buried under a millennium of dirt and dust. And parts of this underground world are still unexplored. The valley along the Sibun River, one of Belize's five largest drainage systems, is one example. Thomas conducted his dissertation research at ancient Maya sites along the Sibun River under the supervision of Patricia McAnany, professor at Boston University and director of the field school. Little systematic archaeological research had been done in the valley until McAnany began to study the region in 1997. Over the past decade, she and her teams have unearthed several ancient Mayan settlements in the valley. Based on the artifacts and the architecture they found, McAnany and her teams have been able to link the Sibun River valley to various different political spheres of influence that were operating in the late to terminal classic time in the Maya lowland, from about 860 to 900 A.D.

Students participating in BU's excavations are a vital part of McAnany's teams, and while the field school gives them the opportunity to gain hands-on experience in archaeological research, that's only part of the experience, McAnany said. "The students really participate in bringing to light these ancient artifacts and mapping the ancient structures that will be fundamental parts of the puzzle that makes up the ancestral Maya past. There is always a tremendous amount of excitement among the students when they realize what they are part of."

Flanked by mixed terrain ranging from dense, tangled tropical vegetation to farmland growing different crops on wide flood plains, the Sibun River peacefully winds its way through the country for more than 100 miles before it loses itself in the Caribbean Sea. A decade ago, nothing hinted that the valley was once home to myriads of bustling Maya villages. Then McAnany's teams arrived and began to bring the past to life. With the majestic green-blanketed Maya Mountains jutting out in the distance, BU field school students spent day after day digging for ancient Maya treasures—and found them. Their discoveries range from ancient ball courts on which the classic Mayans played games, to residential sites filled with pottery and ceramics. "Occasionally we even found burials and these contained beautiful whole pots and different kinds of body ornaments, such as a jaguar tooth pendant for example," remembered Christa Cesario, who participated in the field school in 2001.

Merging Past and Present

McAnany's staff is mainly comprised of Boston University graduate students and a team of specialists, such as bioarchaeologists, who study skeletal remains. These experts spend their days in the school's field lab analyzing

artifacts the group found. Students rotate in to learn the different techniques. "The Belize Archaeological Field School is not just about excavating. By helping the specialists, students also get an introduction to all the different areas of science that archaeology uses to understand the remains that it picks up," said Cesario, who has returned to Belize as a staff member of McAnany's expeditions every year since 2001. "It is always a fantastic experience to be able to share the knowledge that I had gained when I was a field school student with other undergraduate students. It was such an important experience for me and to help re-create that for others is a wonderful opportunity."

Archaeology is a key not only to ancient but also to present times and most students leave education abroad programs with a deeper understanding not just of the past but also of modern cultures of the country they are working in, said Thomas. Graham, the staff member of the Tell Madaba Archaeological Project, agreed and pointed out that the programs provide an important tool for students to gain insight into other cultures' perspectives and to learn how these cultures understand their world. But the value goes both ways. "We don't only go to the foreign country to foster our own research interests, we also try to instill a pride in the natives about their own cultural heritage and their own history," he said. "And we go there to make friends."

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NICOLE BRANAN is a freelance journalist based in Colorado Springs, Colorado. Her latest article in *IE* was "Total Immersion" in the March/April 2007 issue.

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