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For University Alumni and Friends

east bay

m a g a z i n e



Beyond CSI

*CSUEB trains future law, order,
and forensic science pros*

**A woman of conviction:
DA Nancy O'Malley '77**

**Skeletons key to
forensic osteology**

**Family violence,
shelters, and pets**

Spring 2011

SPRING 2011

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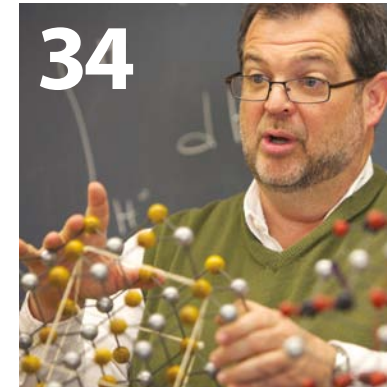


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The journey we've taken together



PHOTO SAM WILLARD

OVER THE PAST FIVE YEARS, I've felt privileged to have a regular column in *Cal State East Bay Magazine*. But with my recent appointment as the next president of San José State University, starting July 1, I will be leaving CSUEB — and this will be my last column.

While I am honored by my new appointment, I will miss this means of sharing with you the unfolding story of Cal State East Bay's transformation from a small, local college to an emerging regional leader and destination university. It's been an association, a virtual conversation, and a journey with University alumni and friends that I'll always recall with great pride.

In addition to the compelling content you can always expect in *Cal State East Bay Magazine*, in this issue you'll find a fresh take on the University's growing focus on science, technology, engineering, and mathematics (STEM) — and how it affects teaching, learning, and professional outcomes in the criminal justice arena. You'll meet an impressive array of faculty and alumni who have succeeded and contributed in fields touching on, but stretching well beyond, the world of crime scene investigation popularized in TV series such as *CSI*. At the same time, you'll find compelling evidence of the growing role of technology and hands-on interdisciplinary learning in these fields.

In our cover story, follow recent graduate Kenneth Advincula '11 as he begins his career as a forensic laboratory technician, where he hopes to follow in the professional

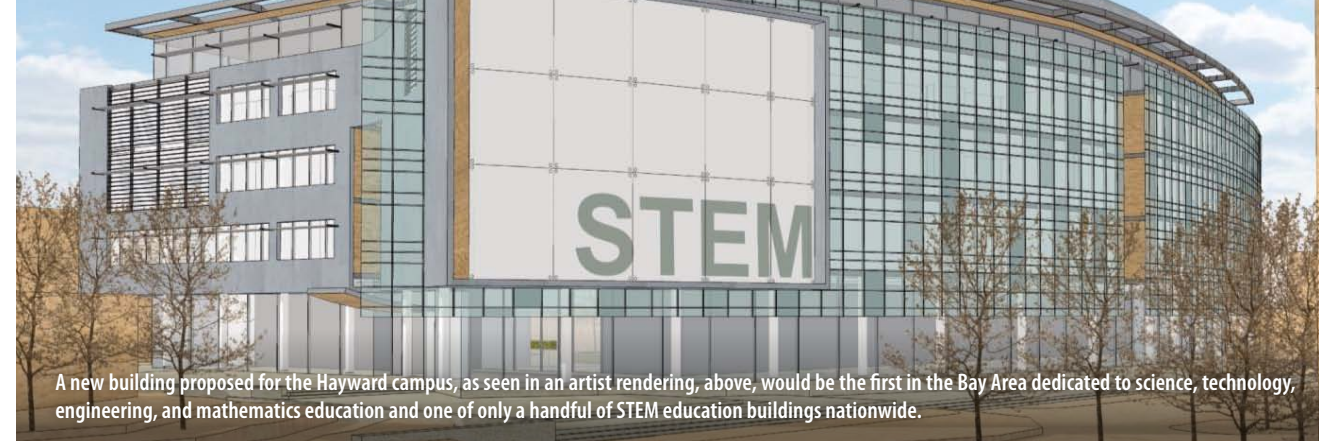
footsteps of his former instructor, Michelle Rippey '02, who handles the investigative side of the coroner's job. In the legal arena, Nancy O'Malley '77, the first woman appointed to the position once held by Supreme Court Justice Earl Warren, gives us a glimpse into her role as district attorney for Alameda County.

You'll also learn how Cal State East Bay's Department of Criminal Justice Administration sets itself apart in exposing undergrads to principles most institutions reserve for graduate students. Other stories feature the fascinating contributions one professor is making to forensic anthropology around the world; students involved in the new Forensic Science Club; and the high-profile roles alumni have played in criminal investigations and cyber crime prevention. Meanwhile, faculty members Dawna Komorosky and Dianne Rush Woods share their research findings, revealing a surprising domestic violence shelter policy gap.

These are just a few examples of what you'll discover, experience, and learn in this issue of *Cal State East Bay Magazine*. I hope you'll continue to follow the Cal State East Bay story for many years to come and continue to feel the pride I've felt so deeply.

Mohammad "Mo" Qayoumi
PRESIDENT

LOOKING AHEAD



A new building proposed for the Hayward campus, as seen in an artist rendering, above, would be the first in the Bay Area dedicated to science, technology, engineering, and mathematics education and one of only a handful of STEM education buildings nationwide.

A Bay Area First CSUEB draws up plans for STEM Education building

BY BARRY ZEPPEL

Although it may be several years before construction starts on a new STEM (science, technology, engineering, and math) education building proposed for the University's Hayward campus, the groundwork has been laid with the completion of an initial program study.

The study reveals a leadership vision taking shape for a facility unlike any other education structure in the Bay Area. The five-story facility with 120,000 square feet of instructional and office space will be the first in the region dedicated solely to STEM education — and to new ways of teaching and learning STEM.

"This facility is a central element of our plans to make Cal State East Bay the region's premier STEM-centered university," said Mohammad H. Qayoumi, CSUEB president. "It embodies the principles of an open learning system that fosters teaching and learning innovation, as well as graduates who are better prepared to contribute to the economic, environmental, and social health of the region."

Included in the unique design of the building — estimated to cost \$85 million — will be flexible, reconfigurable space that will allow for combined classroom and laboratory work. Inspired by learning models at MIT and Stanford, key features of instructional spaces will be easily movable furniture and whiteboards on wheels called huddle boards, classroom laptops with specialized software, Web interactive whiteboards, and extensive video capability. Such versatility will allow for more effective student engagement and collaboration, while strengthening connections between students and teachers and project-based multidisciplinary group learning.

In addition to classroom and lab spaces, the building will house some faculty from CSUEB's College of Science and College of Education and Allied Studies, as well as the

Center for STEM Education, which will plan and coordinate the University's overall STEM-education initiative. Plans also call for the facility to house three future complementary components: STEM Academy for K-12 Education; STEM Institute for Undergraduate Learning; and the Regional Institute for Scientific, Social, and Economic Research and Development.

The STEM Academy, which will provide innovative surroundings for developing and nurturing STEM education for the community, will support and train undergraduate and graduate students aiming to teach K-12 students. The STEM Institute will work to increase STEM literacy among college students and expand learning opportunities for undergraduates in STEM majors, while the Regional Institute will focus on applied research.

Realization of the University's ambitious plans for the facility is dependent upon donor support, which will be required to leverage state funding to start construction of the proposed building. Donor support for the STEM Education building is therefore among the most important goals of Cal State East Bay's *University of Possibilities* comprehensive fundraising campaign, now in the second year of its projected eight-year life.

Design of the building — to be located adjacent to the east side of the Arts and Education building on the current site of parking lot J — will meet CSU standards for energy performance and environmental quality and also incorporate numerous sustainability features, itself becoming part of the CSUEB learning experience and curriculum.

The STEM Education building will provide "an extended learning environment," where the effectiveness of energy-efficient technologies will be continuously monitored, demonstrating a "highly sustainable environment," according to Jim Zavagno, director of the Department of Planning Design and Construction. The design, including public areas offering a "welcoming presence," will reflect deeply held University values of collaboration, sustainability, transparency, and openness. ■

a Bounty of Bones

Professor Henry Gilbert catalogs skeletal remains from around the globe on a first-of-its-kind Web site

BY MONIQUE BEELER

AS HE SCANS PATCHES OF PARCHED GROUND IN ETHIOPIA'S SECTION OF THE GREAT RIFT VALLEY EACH SUMMER, PROFESSOR HENRY GILBERT SEES DEAD PEOPLE. MORE ACCURATELY, HE SPOTS PIECES OF THEIR BONES — USUALLY FOSSILS TRAMPLED INTO COIN-SIZED FRAGMENTS BY MILLENNIA OF DOWNPOURS, WINDSTORMS, RELENTLESS SUN, AND CEASELESS HUMAN AND WILDLIFE MIGRATION. INTO THIS SKELETAL SMORGASBORD IS MIXED A GENEROUS HELPING OF BONES FROM ANIMALS THAT WERE ROASTED OVER PREHISTORIC CAMPFIRE, FELL TO PREDATORS, OR SIMPLY DROPPED DUE TO DISEASE OR FAMINE.

As an anthropologist who specializes in forensic osteology, Gilbert knows at a glance whether a bony body part he finds once belonged to a non-mammal or a hominid — one of the family of upright walking

species ranging from ancient human ancestors to modern people. Marks visible on hominid bones reveal to Gilbert's trained eye clues to the individual's cause of death, whether from a fall or an ax blow.

Today, through a first-of-its-kind Web site, www.forensicosteology.com, Gilbert in collaboration with colleagues at Universidad Nacional Autónoma de México (UNAM) and others, is providing a reference tool for colleagues worldwide. Known as FOROST, the online project provides a database of images of skeletal remains and case descriptions that anthropology students, human rights and genocide investigators, and forensic workers can turn to when they need help in identifying a bone fragment or pinpointing a cause of death based on marks left on skeletal remains. In a *Cal State East Bay Magazine* interview, Gilbert discusses his work. ▶

Skeletal remains cataloged on the forensic osteology Web site that CSUEB Professor Henry Gilbert contributes to range from historic to contemporary, including images of bones damaged by infection, left, Civil War muskets, and stone arrowheads.

PHOTO: UNIVERSITY OF THE PACIFIC

In what area of anthropology do you specialize?

I've been doing paleoanthropology fieldwork and running a field site in Ethiopia for the past six years. That's my primary area of expertise. There are fossils all over the Rift Valley.

You have to be able to identify a small piece of non-mammal bone fragment versus a hominid. I've spent years memorizing every bone in the human body. That's a ridiculous skill that not even a forensic scientist really needs.

What is forensic osteology?

Forensic osteology is the use of bones to re-create the circumstances of a forensic event, generally focused on pathology or events surrounding death. Bones can also reveal the stature or ancestry of the individual. Also, you can get a lot (of information) about trauma to the body.

What else does a bone fragment reveal?

It can reveal a lot. It can reveal age. It can reveal sex. It can reveal nutrition in life. It can reveal ancestry and geographic area (where the person lived). It can reveal activities surrounding death. It can reveal the diseases the individual suffered from in life and healed from.

It tells a lot of story — anything that has a metabolic system impact. Imagine you were a child and went through years without enough protein; there would be a lot of hypoplasia, bumps on the teeth.

Why did the field need the FOROST Web site?

Working in Ethiopia, I know a lot about what resources people have and don't have. People have computers and Internet ... but they don't have 50 cents to buy a photocopied book. Police in (underdeveloped countries) can go to an



CSUEB Professor Henry Gilbert, above, searches for skeletal specimens in the Great Rift Valley in Ethiopia. He spent two years memorizing the 206 bones in the human body and instantly recognizes to which part of the body a fragment belongs.

PHOTO COURTESY HENRY GILBERT

Internet café and find forensicosteology.com. Not everyone who runs a forensic science lab has a degree, especially internationally.

Right now, FOROST has almost 600 photos.

Imagine if you want to know if this (mark on a bone) was from a machete injury or a buffalo ran over the skull after death? Is it better to look at one photo or hundreds?

When you examine a bone, how do you handle it?

It depends on the circumstances. Generally speaking you use gloves, especially in any forensic context. The second thing you do is to work with a high-powered incandescent light and a good table where they won't fall and break. Then it's a matter of being thorough.

(This) is a piece of a sphenoid, it's a piece of a cranium. You can get pretty good at distinguishing between

hominid and non-hominid. I'm really good at this, so I end up training others.

There are 206 bones in the human body. Every structure that leaves a mark on a bone, I've memorized.

What photos of skeletal specimens will users find in the database?

We've got 253 specimens from 12 countries.

I don't know if every single bone is represented. There are probably going to be more crania than other stuff. (There are) long bones — legs and arms, anything that gets fractured regularly. Ribs, there are plenty of ribs.

How did creation of FOROST come about?

It's hard to get access to (study) bones in the U.S. The Native American Graves and Repatriation Act has really changed the dynamic of who owns bones in the U.S.

Things are very different in Mexico. At the Facultad de Medicina of UNAM ... they're developing a skeletal collection. There are a lot of pathology and hospital collections in it.

And their anthropological museum has 18,000 human skeletons for people to study.

In working with people in Mexico, I thought: Why not start this international group of people who post (forensic osteology images)?

It generated this international twist to things that gave it a life of its own. It launched at the beginning of 2007-08.

Who uses the FOROST site?

I don't know who they are; I just know where they are.

We're getting (users) from Libya, from Egypt, from you name it. Name a country that's got some kind of genocide site, and they're using it.

As of January 2011, we were getting 2,200 visits a month.

There are probably a lot of students in anthropology and forensic scientists. I spoke at the last (FOROST) conference to two different people who run forensic labs in small jurisdictions in northern Mexico.

Editor's note: In March, Gilbert organized the Second Annual Seminar of Forensic Anthropology in Mexico City, drawing international FOROST participants.

How has anthropology influenced forensic science?

These (forensic osteology) skills end up being extremely useful for forensic science.

It turns out that those skills are exactly what you need when you get called to the stand and asked, "Was the cut made by a steak knife or a butcher knife?"

Nowadays, everyone uses DNA, but DNA won't tell you what happened, it can (only) tell you who was involved.

How has the site proven useful in ways you didn't expect?

We've gotten interest from people from Portugal, Spain, the Czech Republic, and France. What ends up happening is getting people together in a non-competitive way. There have been some technological innovations that have happened in ways information has been organized and cited. Lots of collaboration — that's the biggest thing. ■



The FOROST image, far left, demonstrates the mark size and shape caused to the right temporal bone by a self-inflicted gunshot wound. The image, right, taken from inside the white 30-year-old man's cranium, shows where the bullet lodged in his left temporal bone.

PHOTO THE CLEVELAND MUSEUM OF PHYSICAL ANTHROPOLOGY