



UNIVERSITY Gazette



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Coral growth bands reveal survival clues

UNC marine scientist Karl Castillo uses a pneumatic drill to take a core sample from a massive starlet coral (*Siderastrea siderea*) on the Mesoamerican Barrier Reef off the coast of Belize in the western Caribbean.

Taking to a living organism with a large pneumatic drill might not sound like the best way to protect it.

But that's just what UNC marine scientists did to a distinctive species of coral off the coast of Belize, in an effort to determine how to help conserve coral reef systems.

Coral reefs are an important natural resource for certain states in the United States and developing countries such as Belize, a small nation just below Mexico in the western Caribbean. There, the Mesoamerican Barrier Reef — the second largest in the world — acts as an environmental and economic attraction for humans and marine creatures.

The Carolina researchers, Karl Castillo, Justin Ries and Jack Weiss, tapped the natural internal archive of massive starlet corals, which can grow to almost 4-feet across over a period of about 100 years.

"Massive starlet corals are like old-growth trees in a forest," said Castillo, a postdoctoral research associate in the College of Arts and Sciences. "In much the same way that land-based biologists analyze tree rings to determine the age of trees and the impact of past environmental events, the cores of these corals reveal the same kind of information."

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UNC-led study shows promise in fight against HIV/AIDS

A University-led research study has made a major discovery in efforts to halt the spread of HIV, the virus that causes AIDS.

The large international clinical trial, led by Myron S. Cohen, J. Herbert Bate Distinguished Professor of Medicine, Microbiology and Immunology, and Public Health, has found that treating HIV-infected individuals with antiretroviral therapy while their immune systems are still strong significantly reduces the risk of their sexual

partners contracting the virus.

The findings are the first from a major randomized clinical trial to indicate that treating an HIV-infected person can make the person less contagious, not just keep him or her healthy.

The study was due to run until 2015. However, data gathered so far clearly revealed the benefits of early treatment, prompting health officials to release the results now.

"We think that these results will be important

to help improve both HIV treatment and prevention and we are grateful to the study participants for their important contribution in the fight against HIV/AIDS," said Cohen, director of the UNC Institute for Global Health and Infectious Diseases and associate vice chancellor for global health.

The study, which spans nine countries,

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Classics: a rewarding pursuit

Cecil Wooten, professor and chair of the classics department in the College of Arts and Sciences, poses in the lobby of Murphey Hall with statues of Apollo, left, and Athena, in the background. A statue of Aphrodite, not shown in the photo, stands to the far left.

The statues were given to the University by the classes of 1900, 1901 and 1902 “at a time when most Americans did not go to Europe and could thus become acquainted with classical culture only by means of plaster of Paris reproductions,” Wooten said at the department’s graduation ceremony earlier this month.

He told the graduates that the three Greek figures were appropriate choices for the pursuit of classics, the study of the ancient civilizations of Greece and Rome, their languages, literature, history, art and archaeology.

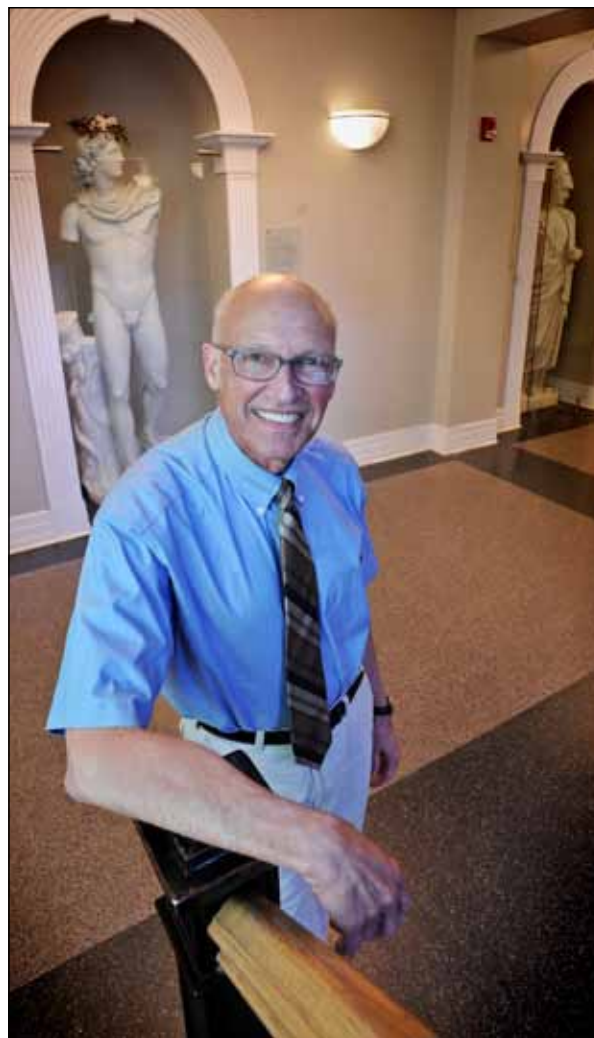
Aphrodite, the goddess of love, symbolizes the love of a scholar for the text, of an archaeologist for a beautiful object, of a philosopher for a complex idea, Wooten said. Essentially, it is a love of what Apollo (the sun god) stands for: civilization, poetry and art — the finer aspects of human nature.

“And it is this higher nature that Apollo represents that can temper and control those dangerous elements in human life, warfare and technology, represented by Athena (the goddess of wisdom and justice),” Wooten said.

But the mythological figure that most closely represents people who choose to study classics, he added, is Hercules.

When offered a choice between a life of ease and pleasure or one of hard work, but with glorious rewards, Hercules chose the latter, Wooten said.

“In a world where many people look for the easy way out, they (classics graduates) have chosen to do something that is demanding and difficult,” he said. “In a world where



many people are attracted only by prospects of almost immediate, tangible gratification, they have chosen to pursue a field that offers rewards that are tremendous, but for the most part intangible.”

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By measuring annual growth bands in the cores, Castillo and Ries could tell that in the early 1900s, corals on the outer reef grew faster than those closer to shore. But over the past century, the pattern has flip-flopped; open ocean corals’ growth rates slowed, while the others have remained relatively stable.

This suggests that massive starlet corals closest to the open ocean are having the most trouble weathering the effects of environmental changes, such as warmer-than-average water temperatures due to climate change and higher pollution levels.

Ries, assistant professor of marine science, said that could be because seaward corals have not had time to adapt to these recent human activity-related stressors. In contrast, for millennia, landward corals have probably been exposed to greater baseline stressors and possibly built up more immunity to them.

“When coral growth slows down, reefs may erode more quickly than they’re being built, which could ultimately cause the reefs to decrease in size or even disappear,” said Ries. “Local economies rely on these reefs and the organisms that inhabit them for their fishing and tourism industries. These corals must be actively producing new reef material to support a thriving ecosystem.”

The research holds special significance for Castillo, a native of Belize. “As a kid, my stepfather took me out to the reefs,” he said. “I’ve actually seen the changes that have occurred over time. I wanted to try to find out and answer these questions so that we can eventually, if possible, make conservation or management decisions to try to conserve coral reefs in the face of climate change.”

For more information about this research, including a video showing the researchers at work, refer to www.unc.edu/spotlight/old_growth_coral. The work was partially funded by a National Science Foundation grant. 

Ann Trollinger acts as personal financial adviser to Carolina Covenant Scholars

When the Carolina Covenant Scholars arrive for summer orientation, they are greeted by Ann Trollinger, associate director for the Office of Scholarships and Student Aid. During this first opportunity to meet new scholars and their parents, Trollinger, along with Fred Clark, professor of Romance languages and academic coordinator for the Carolina Covenant program, and Michael Highland, the program’s assistant academic coordinator, tell them, “We’re your Covenant team. Welcome to Carolina.”

“At orientation, we want to introduce ourselves to the scholars so they are not intimidated about coming to see us,” Trollinger said.

Intimidating? Far from it. Within this team, the scholars find an answer for every question and a solution to almost every problem. Trollinger’s open-door policy invites scholars to bring their concerns about financial issues to her at any time,

with no appointment necessary.

“A lot of new scholars are concerned with timing — when financial aid will be deposited to their student account; what it will cover; and what happens if the money isn’t there when the bill is due,” she said. “We alleviate those anxieties, and we include their parents to keep them involved and eliminate their concerns as well.”

Trollinger works one-on-one with the scholars to match their interests and academic major with a fitting federal work-study job. She helps the scholars learn to budget, explaining ways to make their award disbursements last a whole semester and pay for books, additional costs and miscellaneous expenses. She manages the financial aid that allows scholars to study abroad.

“Many students don’t realize they can use their financial aid to study abroad,” Trollinger said. Work-study funds convert to grants when a student is enrolled in a study

abroad experience, and students can turn to Trollinger to help them choose a program that corresponds well with their financial aid.

Covenant scholars can sign up for financial management workshops with tips and tools to help them manage their money — throughout their undergraduate career and as they make plans for life after college.

“We are more than helping them understand their Covenant scholarship,” Trollinger said. “We are teaching them financial strategies for life.”

Trollinger has helped students with financial aid services for 22 years — 17 of them at Carolina — but, to her, the Carolina Covenant is special.

“This is the best program I’ve been involved with because it’s so rewarding,” she said. “My favorite part is when the students come back and sit in my office and share their success stories with me.”

The Carolina Covenant allows eligible low-income students to graduate from the University debt free. Currently, 2,200



Covenant Scholars are studying at Carolina, and more than 2,900 students have benefited from the program since it began in 2004. 