Golden Ceramic Dental Laboratory:

Supporting the Next Generation of Dentists

By Kim Molinaro, Managing Editor

In May, Ben Topaz, Owner of 55-person Golden Ceramic Dental Lab (GCDL) in Prospect Heights, IL, opened a second location…but not just any location: it's an all-digital laboratory at Temple University's Kornberg School of Dentistry in Philadelphia.

Topaz won the contract for the project back in 2020 after responding to the school's proposal request for a laboratory that could help it transition to a digital workflow—including selecting equipment and processes—and handle all the work for its on-site dental clinic, which had been previously sent offsite.

"GCDL at Temple is a tool for learning at the Kornberg School of Dentistry," says Topaz. "Our staff discusses materials, technologies and workflows with both students and faculty and we all work collaboratively to achieve highly esthetic, ideal restorations to meet their patients' needs."

For instance, Lab Manager Ellen Sisti, BFA, MFA, helps the faculty train students on 3Shape software and morphology/anatomy design, while the removable technician, Abdul Bashir, assists students with setting teeth and attends pre-clinic classes along with the faculty to support students in manufacturing custom trays and sample dentures.

Only cases that require a quick turnaround—like next-day single crowns, flippers, temporary crowns and wax rims—are fabricated at the on-site lab. The rest of the dental clinic's cases are sent digitally to GCDL's Chicago location and the designs are emailed to the faculty and students for approval prior to manufacturing in Chicago. Students can also visit GCDL at Temple to observe the milling or printing equipment in action. "It's very valuable for the students to see the production side and be a part of the whole laboratory process," says Topaz.

GCDL at Temple is also working with the school to incorporate digital manufacturing workflows into the curriculum. "We're developing processes that are easy for the faculty to teach and allow us to use the latest technology," says Topaz. "With dentures, we've found that the biggest hurdle with going from analog to digital is the try-in process. The students are used to trying in dentures using individual teeth and wax so they can move the teeth around, but with printed monolithic dentures they don't have that ability."

For this reason, GCDL recommended two fabrication options and the school is testing out which process it prefers. For both options, the students send the wax rim and bite to GCDL in Chicago where they digitally design the denture and print it using a Carbon printer and Lucitone material. "We can either print a monolithic try-in or print a try-in in separate pieces: the denture base and then the denture teeth split into three segments that can be connected with wax so students can move the teeth around in groups if needed, similar to a conventional try-in," says Topaz. Once the school decides which fabrication method works best, GCDL will document the process as part of the school's standard curriculum.

"It's satisfying to be part of something beyond manufacturing and we learn a lot from the school in return," says Topaz. "We love being part of a teaching facility and we get as much as we give."

Dr. Amid Ismail, Dean of the Kornberg School of Dentistry, agrees the relationship is a win-win. "Working with a digital lab is necessary to move the fabrication of prostheses from analog to digital systems and I'm pleased that GCDL is now the designated digital lab at Temple University dental school," says Ismail. "Through our collaboration we have been learning together, improving workflows and acquiring current technology in the digital dentistry domain." LMT

Ellen Sisti, BFA, MFA (standing), Lab Manager, GCDL at Temple, works with dental student Erica Stapleton, BS, MPH, MOHS, to review the anatomy of a crown in the lab's 3Shape software.

Working with the school's engineers and designers, the 1,000-square-foot GCDL at Temple University was designed to GCDL's specs and includes two design stations, two Roland mills, and EnvisionTEC and Asiga printers.