

# Leading practitioners, educators forecast trends for the nineties

*Whoever said "the more things change the more they remain the same" obviously didn't consult with a dentist. Changes in dentistry over the past 15 years have transformed the methods of every practitioner, and according to those interviewed for this story, the transformation is only beginning.*

*Restorative Dentistry 90 asked six prominent dentists to discuss one area where they see major changes coming in the next decade. Each prediction points to exciting and challenging times ahead.*



## Consider the CAD-CAM Crown

*Dr. Gerald McLaughlin*

Ask an automotive engineer about CAD-CAM and he'll tell you that Computer Aided Design and Computer Aided Manufacturing have been the major tool in rebuilding the U.S. auto industry.

What does that mean for dentistry in the 1990s? Plenty according to Dr. Gerald McLaughlin, a private practitioner from Rocky Point, N.Y. Dr. McLaughlin told *RD90* that sophisticated CAD-CAM systems will soon enable dentists to manufacture crowns and bridges in their offices in 40 minutes or less.

Restorations created with the CAD-CAM system are more precise than those produced with conventional laboratory methods. In addition, the entire procedure — from preparation to placement of finished unit — is completed in one visit.

Though CAD-CAM dental systems involve complex electronics, the concept is fairly simple. The dentist cuts a crown prep using conventional methods, but instead of taking an impression he "measures" the tooth using a laser light probe. The laser shoots a series of electronic "pictures" of the preparation which are fed into the CAD system.

Using laser-precise measurements and some basic input from the doctor, the computer designs the crown or bridge to fit exact proximal and occlusal dimensions.

After producing the ideal design, CAD sends its specifications to CAM (the manufacturing unit) where the crown or bridge is milled from a small block of material. The entire process takes about 40 minutes.

Dr. McLaughlin's first experience with CAD-CAM came a few years ago when he met dentist and inventor Francis Duret during a trip to France. According to Dr. McLaughlin, Duret's unit is one of three CAD-CAM dental systems in various stages of development. One is on the market in Europe, and if all goes well CAD-CAM systems could be available in the United States by the end of this year.

The CAD-CAM system cuts crowns and bridges from any millable material, though a special fiber-reinforced composite is the most popular at this time. Dr. McLaughlin believes a wide range of materials will become available once dental companies see a growing market for CAD-CAM crown and bridge systems.

CAD-CAM's major advantages are speed and precision, since each crown or bridge is manufactured to measurements taken directly from the patient's mouth. There is little chance for error.

Though he can't say what CAD-CAM systems will cost, Dr. McLaughlin is sure they won't be cheap. But as the technology begins to gain acceptance and buyers, the price is sure to fall.

"The CAD-CAM system is still emerging technology in dentistry, but it has tremendous possibilities," Dr. McLaughlin said. "Like anything new, it will take some refining. I look for CAD-CAM to play a major role in prosthetic dentistry in the 1990s." ■