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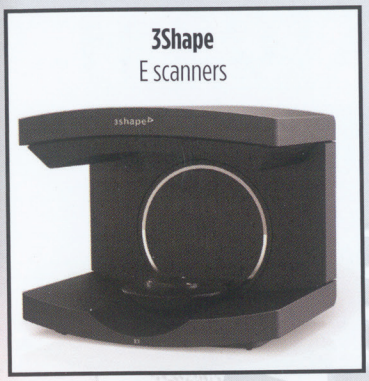
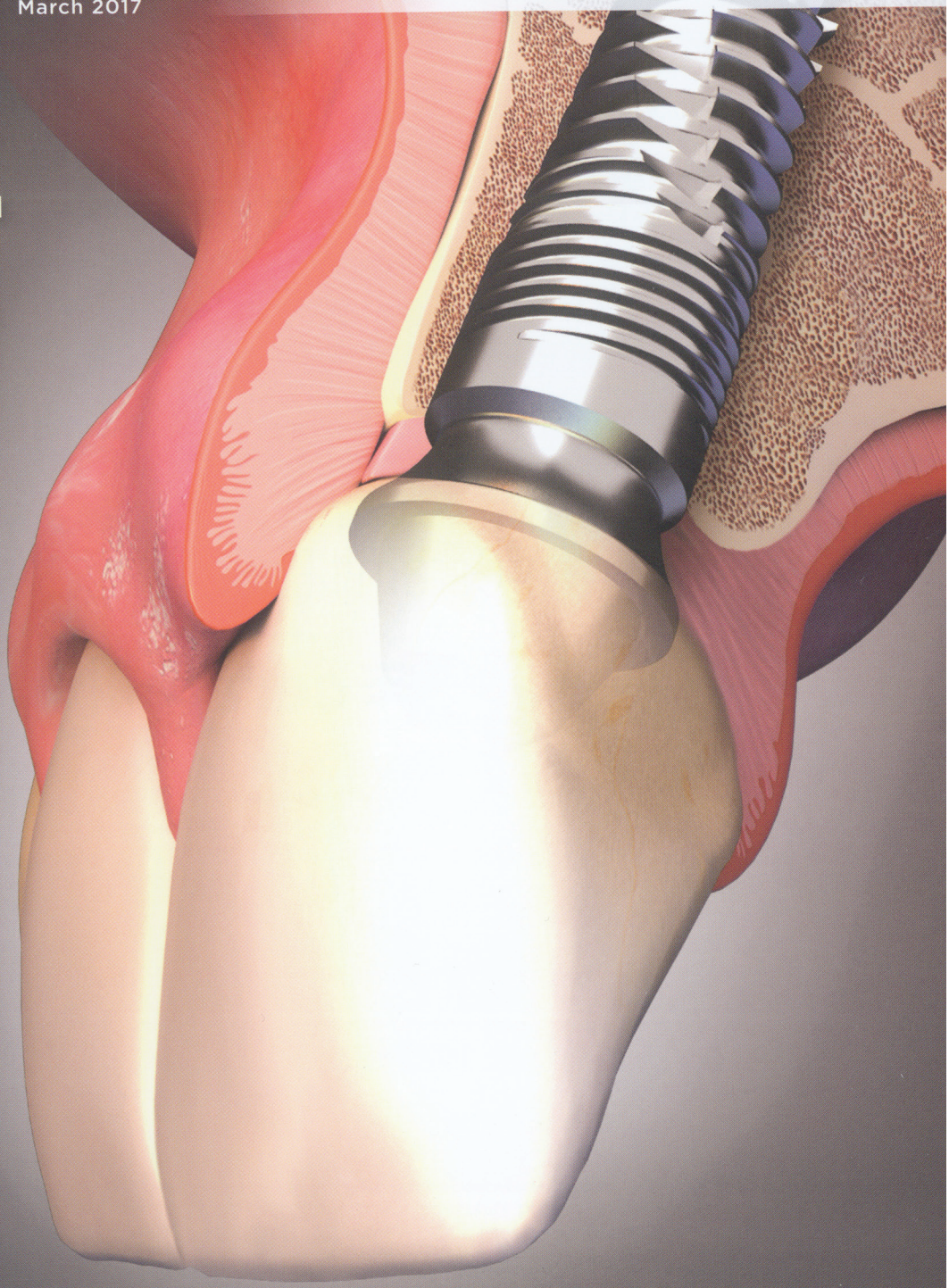
FEATURED PRODUCTS






# IMPLANT ABCs

Dentist-technician teams address important questions in implant dentistry



**CONTINUING EDUCATION: 1 CREDIT**

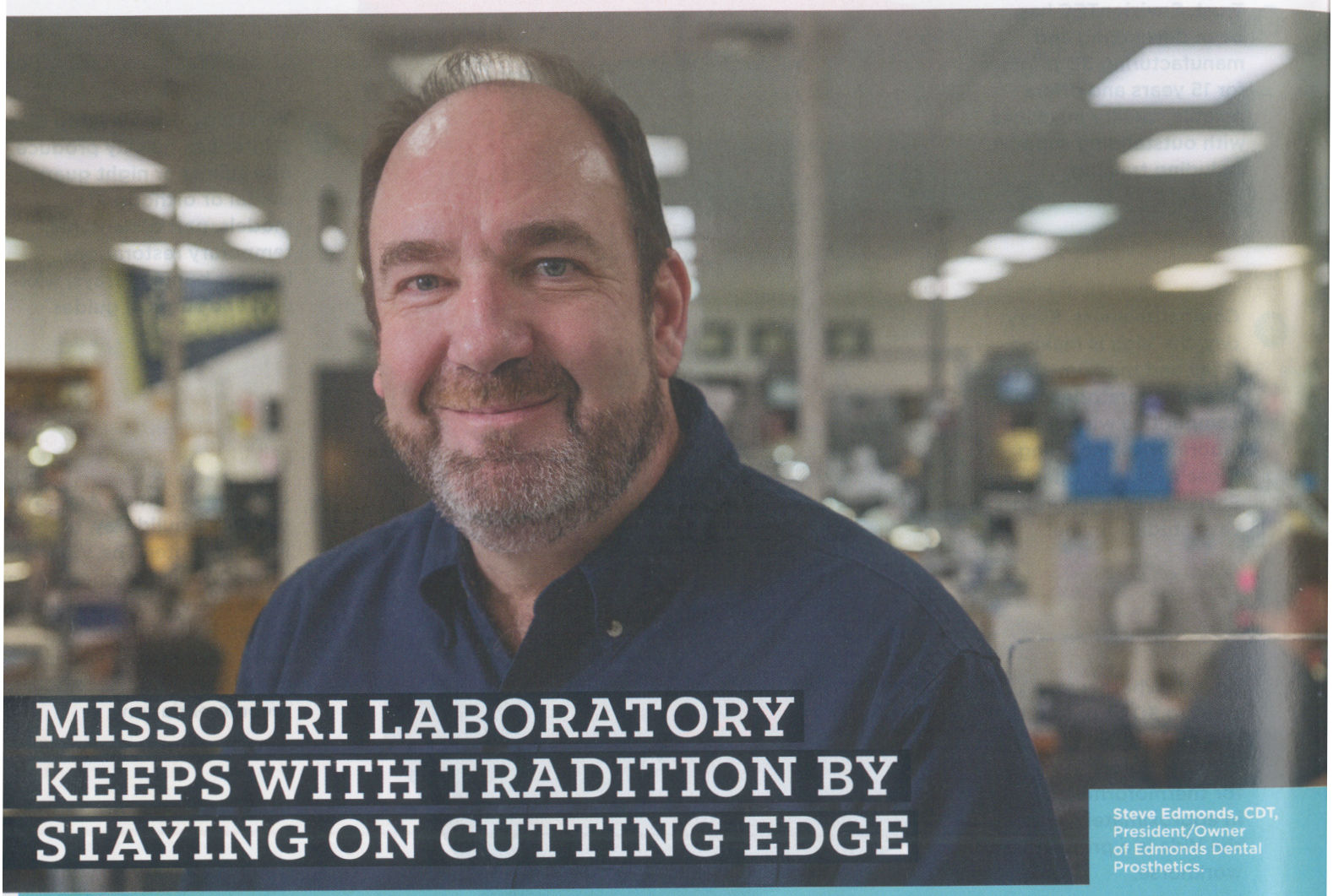
## Radiation Levels in Millable Zirconia Materials

Gregg Helvey, DDS, MAGD, CDT

**MASTERCLASS**

## A New Digital Solution for Implant-Supported Restorations

Thomas J. Balshi, DDS, PhD, FACP; and Stephen F. Balshi, MBE



# MISSOURI LABORATORY KEEPS WITH TRADITION BY STAYING ON CUTTING EDGE

Steve Edmonds, CDT, President/Owner of Edmonds Dental Prosthetics.

## Efficiently 3D printing models in house helps provide top-quality service to dentists

**IN MANY WAYS,** Edmonds Dental Prosthetics looks much the same today as it did in 1983, when Steve Edmonds joined the family business as a delivery driver and worked in the model department. Many of the same employees remain from the days when the business was owned by Steve's father, Bob, who fell in love with the industry while sweeping floors in a laboratory in the early 1960s.

Just as it did in the early days, the main laboratory in Springfield, Missouri, strives to be the best in its field by providing dentists and patients with the highest-quality products and services available. Edmonds' three other locations in Jefferson City, Mo., West Plains, Mo., and Jonesboro, Ark., also follow this philosophy.

"The original core group of employees who started with Bob are either still with Edmonds Dental or have retired," says Steve Edmonds, who took over as a part owner when his father retired in 2012 and became full owner last year. "We continue the family-oriented tradition that Bob started back in the 1960s as a full-service laboratory offering quality products to our dentists' patients, and as a resource for our dentists to continue to grow their practices through new technologies and materials."

Edmonds says he initially was drawn to the industry because it provided an artistic outlet.

"I like creating things with my hands," he says. "We make extensions of the human body called prosthetics for someone's mother, father, son, or daughter. This is what we do."

Many of his employees share that same passion, Edmonds says, which is why it might be surprising that the laboratory converted to CAD/CAM in 2003 and is now one of the most technologically advanced in the country, serving as a beta tester for many new products. However, adopting digital processes was a necessary part of Edmonds' commitment to staying ahead of the curve; it was a business decision.

"Through our involvement with the TEREC group, we realized very early that the industry was heading in the direction of digital fabrication," Steve Edmonds says. "It was evident that

Photography by time | light photography

milled restorations would overtake PFMs, so we basically took away our technicians' waxing instruments and dip pots, and gave them each a keyboard, a mouse, and new design software. It was rough at first, but the technicians adapted very quickly. They were just creating restorations in a different, more efficient format."

Approximately 6 years ago, it became evident that 3D printing would become very useful tool for laboratories. Dentists were increasingly utilizing intraoral scanners and sending files digitally, but turnaround times were slow because the cases could not be started until a third party printed the models and sent them to the laboratory.

"We wanted to have control of the entire process," Operations Manager Rodney Stafford says. "Printing our own models would allow us to dramatically reduce turnaround times."

Edmonds has tried several 3D printers in that time but recently decided on the Asiga Freeform PRO2 from Whip Mix. The printer has worked so well in the first few months that Edmonds has already ordered another.

"The printer is capable of a number of applications, but we are mainly using it for model printing," Digital Supervisor Sheila McMasters says. "It is so much more efficient to print the models in house instead of outsourcing them."

The PRO2 is an open system that can print any photo-polymerizing resin. Applications include pressing/casting patterns, surgical guides, custom impression trays, temporaries, and more. Its colors allow extreme detail to be seen and replicated.

"It has a very esthetic resin, and we have multiple color options," McMasters says. "We're using the 50-µm print, which produces a smooth model that does not necessarily show all the layers that can be seen on printed models from other machines."

The PRO2 has increased productivity in the laboratory not only through faster in-house turnaround times and less hands-on labor, but also because post-processing is very easy compared with other printers.

"Once I pull the tray out of the printer, I can have a model in the pan in 15 minutes," McMasters says. "The post-processing times are just incredible compared to other printers we have used. It is cleaner, faster, and smoother."

The tray capacity of the PRO2 is approximately 8 to 10 arches, and each run takes approximately 2.5 hours, depending on the height of the model. Orthodontic models take longer but can be saved for overnight runs, McMaster says, adding that the laboratory generally executes three runs throughout the day and one overnight.

That performance capability is backed by Whip Mix's well-established customer service.

"They are there for us at the drop of a hat," McMasters says. "If I send an email to them, within an hour they will be team-viewing with me. I can expect that service any time I need it."

**Fig 1.** Operations Manager Rodney Stafford, left; President/Owner Steve Edmonds, CDT, center; and Digital Supervisor Sheila McMasters, right. **Fig 2 and Fig 3.** Removing printed materials from the Asiga PRO2. **Fig 4.** Using CAD software to design a model.



## Asiga Freeform PRO2

The Freeform PRO2 is a professional 3D printer for direct manufacturing of dental models, partial frameworks, surgical guides, and crown-and-bridge casting patterns. The Asiga printer is open to most resins and is designed for both desktop precision and large-scale mass customization production.


**For more information, contact:**

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