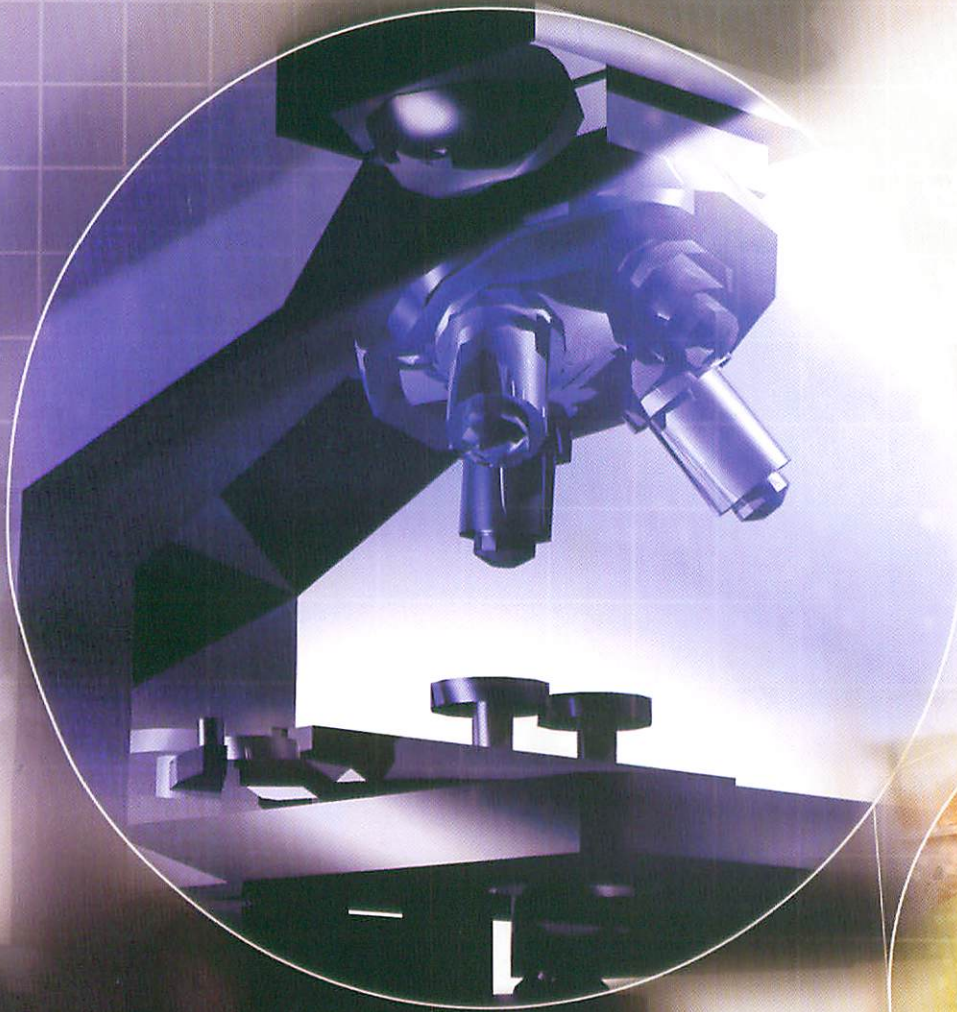


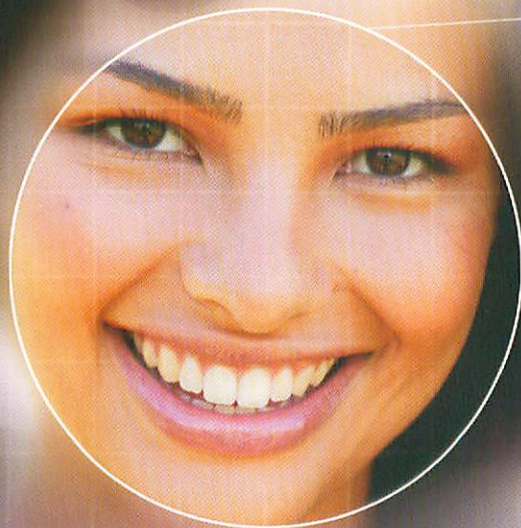
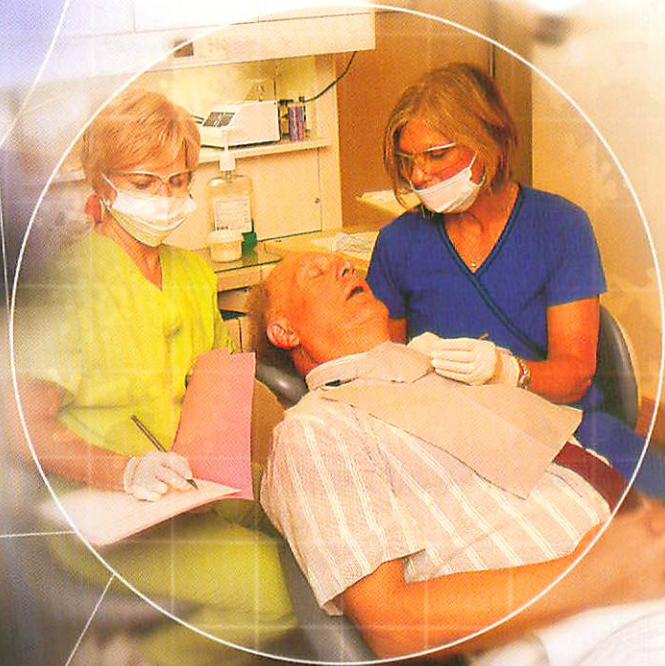
# UAB DENTISTRY

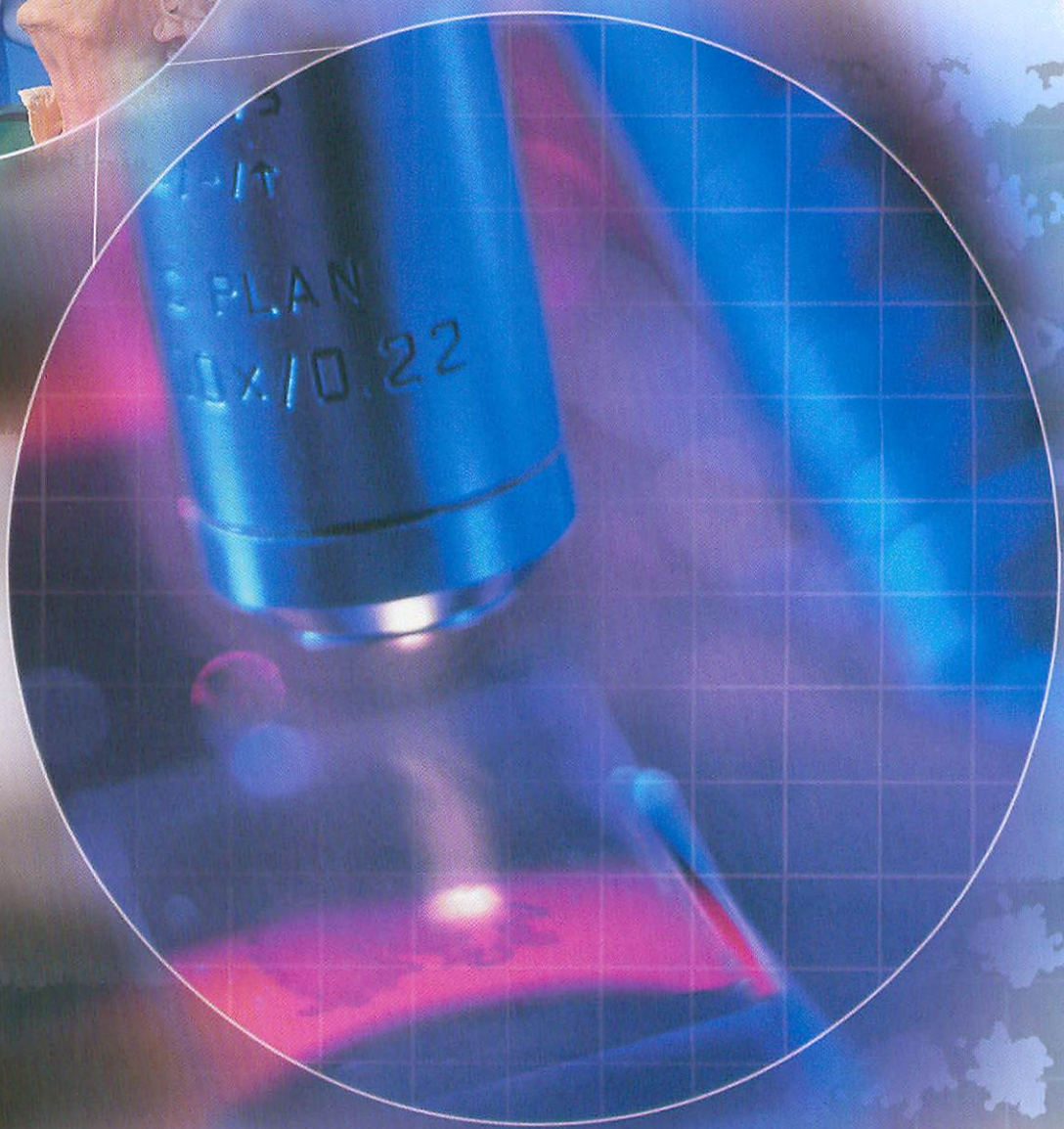
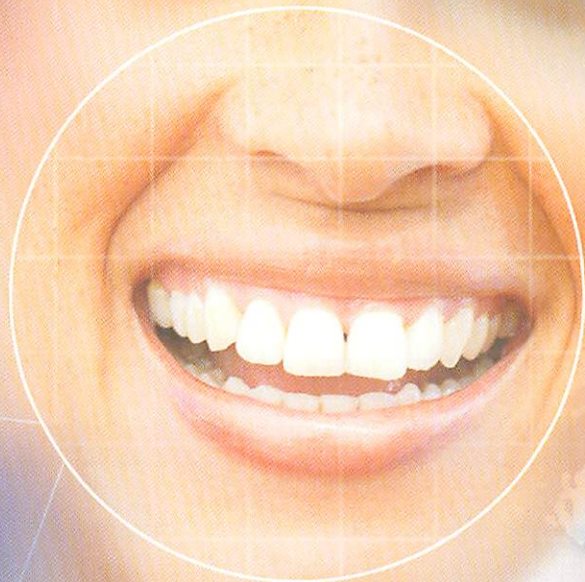
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SPRING 2007



PRACTICE  
MAKES  
PERFECT





# PRACTICE MAKES PERFECT

"EXPERIENCE, THE UNIVERSAL MOTHER OF SCIENCE," is a quote from the Spanish writer Miguel de Cervantes that rings true for most people involved in the science and practice of dentistry.

Often, day-to-day patient care can spark questions that inspire researchers to ask, "What if?" and pursue new directions of inquiry that lead to breakthroughs. But it's only when those advances are put into practice, making the return trip to the clinical setting to benefit patients, that they reveal their true value.

In the traditional model of the research lab and dental office as separate worlds, two-way communication can be slow, and information can get lost in translation. To improve the flow of ideas, practice-based research networks affiliated with academic research centers are bringing clinicians directly involved in patient care into the research process as hands-on investigators.

The nation's first statewide dental-practice research network was initiated in 2002 when Gregg Gilbert, D.D.S., M.B.A., professor and chair of the Department of Diagnostic Sciences at the School of Dentistry, submitted a grant proposal to the University of Alabama Health Services Foundation.

"Our first goal in establishing the Alabama Dental Practice-Based Research Network was to create an infrastructure for dentists to participate in research and share information with their colleagues," says Gilbert. "We began with basic studies as we established working procedures. One of our first studies looked at how dentists assess caries and choose treatment. Another gathered information on whether the success of endodontic treatment in diabetic patients was comparable to or less effective than treatment in nondiabetics.

"When the National Institute of Dental and Craniofacial Research [NIDCR] from the National Institutes of Health became interested in supporting practice-based research on a larger scale, our basic structure was already in place, and we were one of three groups selected to receive funding as part of a multiregional network in April 2005."

Today, the Dental Practice-Based Research Network (DPBRN) has grown to include more than 1,100 dentists and hygienists in Alabama, Mississippi, Florida, Georgia, Minnesota, Oregon,

Washington, and the Scandinavian countries of Denmark, Norway, and Sweden who are working on research studies coordinated through the School of Dentistry. Many of the members in the Southeast are SOD alumni; those in Minnesota, Oregon, and Washington are members of practice groups. The Scandinavian dentists became associated with the network through colleagues in Florida and include members with previous experience as part of practice-based research networks in their own countries.

## Dentists as Pioneers: Life in the Network

Members can participate in as few or as many studies as they like; the training protocols and time commitment required vary according to the topic of research. To prepare for their first study, practitioner-investigators complete an online course in human-subject protection. They also receive continuing-education credit for some training and orientation modules.

Academic researchers and dentists engage in close collaboration at each stage of the research process. Projects are designed to integrate easily into everyday practice routines so that dentists' time can be used efficiently without taking attention away from patient care.

"Some of the studies have an orientation," says Birmingham dentist Martha Wallace Dawson, D.M.D., M.P.H., who was one of the first dentists to join the network. "A research assistant from UAB came to our office to explain the forms and train the staff. Then they collected the data when it was ready."

Projects are conducted in defined stages, using objective benchmarks that are monitored by and regularly communicated to those participating in

*The SOD's  
Dental  
Practice-Based  
Research  
Network*

BY LAURA FREEMAN

*“Real dentists with real patients doing research in the real world— that’s what impressed me about the DPBRN. It’s a powerful concept.”*

the network. Findings from the network’s first completed studies were shared with members at an annual meeting in March.

“Dentists have been very enthusiastic about partnering with us on research issues they see in their daily practice,” says Gilbert. “The work is showing a lot of potential for having a major impact on improving daily practice for both patients and dentists.”

### How Practice-Based Research Pays Off

Several new studies are under way or in the planning stages, including research into the reasons for repair and replacement of restorations and two studies on osteonecrosis of the jaw (ONJ) possibly related to bisphosphonates in osteoporosis medications.

Osteonecrosis (or bone death) of the jaw is a problem that has recently come to light with more than 400 cases reported thus far in patients who have taken specific osteoporosis or cancer drugs; a large number of these cases occurred after invasive dental procedures. The majority of these cases have occurred in cancer patients taking more potent bisphosphonates to treat bone pain, but the condition has also affected people taking weaker drugs to prevent osteoporosis.

In the osteonecrosis research, the DPBRN will join forces with the nation’s other two regional practice-based research networks to help determine the extent of the problem and to try to trace the relationship between the condition and risk factors. These studies are of particular interest to network member and SOD alumnus Edward Bozeman, D.M.D., who practices in Columbus, Mississippi. “I have so many older patients who are taking osteoporosis medications or thinking of taking them,” Bozeman says. “When they have questions, I’m not sure what to tell them. It’s hard to know whether it’s safe to remove a tooth or do an implant.”

Many clinicians involved in treating patients with ONJ predict that the number of people with the disease is likely to grow as previously unreported cases are diagnosed. The implications are even greater considering the widespread use of osteoporosis medications and the number of baby boomers reaching the age when they may start taking them.

Andrei Barasch, D.M.D., M.D.Sc., associate professor of diagnostic sciences at the UABSOD, coordinates the DPBRN’s osteonecrosis research. “These are multicenter studies that also include the PBRNs in New York [PEARL] and Seattle [PRECEDENT].” Both studies should be completed by the end of 2007,” Barasch says. “These are epidemiologic studies in which we will acquire data on ONJ patients and controls to determine if bisphosphonates are indeed increasing the risk. We’ll also determine the risk associated with specific dental procedures, medical histories, and other drugs patients may be taking.”

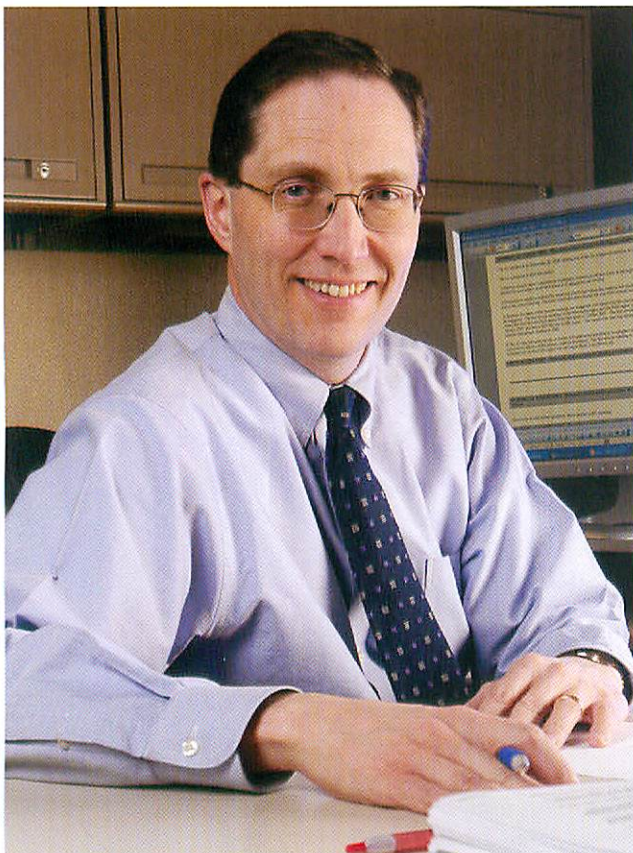
The study data may help clarify whether dental diseases, particularly periodontal disease and invasive procedures such as extractions, are risk factors or a consequence of the necrotic disease process. The study also could provide insights on preventing a potentially costly condition and could guide dentists toward the most effective treatments.

Meanwhile, clinicians currently dealing with the problem are seeing better results with conservative treatment than with more aggressive approaches. Until more is known about the causes of the condition and the most effective treatment to correct it, their primary recommendation is that patients receive a thorough dental evaluation and complete necessary dental procedures before taking bisphosphonates. This is especially true of cancer patients who will be receiving more potent drugs. Since bisphosphonates have been effective in helping ease the pain of bone cancer, that benefit should be considered in view of the patient’s overall condition.

In studies such as the ONJ initiative, DPBRN members participate in practical research that is directly relevant to patient care. Their work helps to move scientific advances into daily clinical practice and to gauge the effect of research findings in real-world settings.

### Better Treatment, Better Practices

Martha Dawson, who joined the network after hearing about it during a UABSOD alumni weekend course, says her participation started paying off almost immediately. “Real dentists with real patients doing research in the real world—



Gregg Gilbert

that's what impressed me about the DPBRN," says Dawson. "It's a powerful concept. The studies are very pertinent. We look at topics that are important to us in daily clinical practice.

"I'm a perpetual learner, and I never stop looking for better ways to do things," adds Dawson, who participated in previous studies and is now following 50 restorations in patients to help identify which approaches to treatment are most likely to be successful over time.

"The network has long-term benefits for patients because what we learn will help us give them the best treatment. We're also looking for more answers to why outcomes happen as they do so [that] we can optimize care," Dawson says.

Bozeman concurs. "I'm always interested in doing dentistry in the best way possible and keeping up with improvements in techniques, and the DPBRN is a good way for me to do this," he says. "It's practice-based and evidence-based. Dentists can tell what they are really seeing and what is really there, so the results have merit. Looking at actual evidence inside the mouth of what succeeds and why gives us information that helps us make better day-to-day decisions, knowing what has the longest success record."

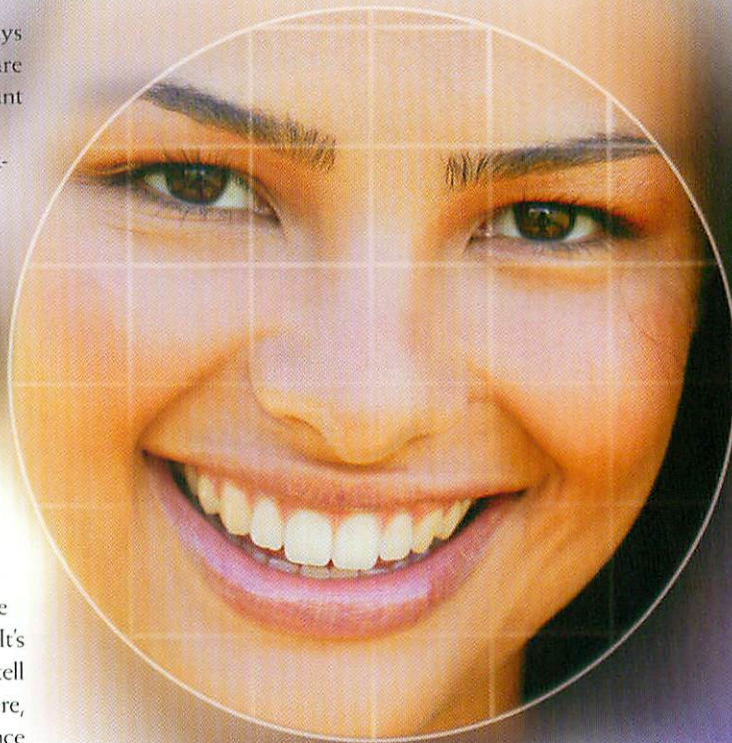
In addition to the benefits to patients, being a member of the network also benefits dentists. "Patients appreciate the fact that I'm doing research," says Dawson. "They see it as a commitment to excellence and being cutting-edge—or, as one of my young patients said, 'Hey, doc, you're solid and cool.' Being able to exchange ideas with other dentists is also wonderful. When something unusual comes up, we can discuss treatment options. I exchange e-mail with someone in the network at least once a week."

"It makes us better dentists," says Bozeman. "What we learn can also help other dentists and researchers."

## Impact on the "State of the Science"

Although many types of research are scientifically valid and statistically significant, not all areas of inquiry have equal impact in terms of direct benefits to patients. The network gives dentists a voice to offer input that can help researchers prioritize possible areas of investigation—particularly important at a time when funding agencies often make decisions about grant proposals based on their potential impact on patient outcomes.

"If we're encountering problems that need better answers, the network gives us a way to let the science side know about it," Bozeman says. "We can tell them what we're seeing so they have a better idea of which topics of research could have the



greatest effect on day-to-day care in practical applications."

In addition to studies already in development, the DPBRN invites members to suggest possible topics for future investigation. The topics are posted on the network's Web site, and members can discuss the topics to gauge interest.

"The NIDCR has entrusted us to develop ideas we want to look into and to make recommendations on how the research should be conducted," says Dawson, "and the NIH oversees it. It's just good science."

Members also have the opportunity to exchange ideas with fellow practitioners through e-mail conversations and annual face-to-face meetings. "I feel that what I hear from other dentists is likely to be reliable and realistic," Dawson says. "They aren't representatives of suppliers or materials companies telling me something is good. I'm more inclined to trust what they have seen in their own experience."

Looking to the future of the DPBRN, Dawson says, "The sky is the limit. As more dentists see how useful it is and how much we can do to directly improve the effectiveness of dental care, more people will want to be part of it. For anyone who is considering participating, I'd say do it! My experience with DPBRN has been so valuable."

To learn more about the Dental Practice-Based Research Network and its current and future research studies, visit [[www.DentalPBRN.org](http://www.DentalPBRN.org)].