Greetings from PROH and OHSU. It’s spring term at the dental school, which is always the busiest for students and faculty, full of bustling activity. With this time of year, the phrase “spring cleaning” always comes to mind, and the same is true for PROH. There are a number of changes that are underway or imminent that I want to discuss. No doubt by now you have heard about the change in the tort-cap law that has resulted in a significant cut to the OHSU budget. This affects every organization on campus, and PROH is no exception. One impact is that we are cutting back on the PROH newsletter expenses by reducing the number of copies we publish and mail. We will now only send the newsletter to members and friends of PROH. This will affect our outreach and recruiting efforts, but we are continuing in our plans to expand and become more involved in research. To do this, we’re going to have to depend more on “internal marketing” to achieve that goal. We ask that you recruit fellow practitioners that you think might want to be a part of PROH. If every member of PROH would recruit just one additional dentist into the network, it would have a significant impact on our numbers.

Speaking of recruiting efforts, the PROH Steering Committee is undergoing several changes. Tom and Marvel Walker, who have been on the Steering Committee since PROH’s inception, have retired from practice and subsequently from PROH. Tom and Marvel have been enthusiastic supporters of practice-based research and have participated in several of our studies. Their help, support, and sage advice will be sorely missed. In addition, Jean Martin has found that family and practice responsibilities have grown to the point that she feels she can no longer be on the Steering Committee. So, we are looking for PROH members who would like to further support PROH by joining the Steering Committee. The Steering Committee provides the executive oversight of PROH, as well as reviewing and approving any studies that we undertake. We really attempt to keep the time commitment to a minimum, and take care of most business via email. Typically, we only meet once per year at the Oregon Dental Conference. If you feel like you might be interested and would like more information, please feel free to give me a call or email me.

The fourth annual PROH meeting and CE course was a great success. The series of evidence-based presentations (described later in this newsletter) were very well received. This format fits well with PROH’s main thrust of providing clinically relevant evidence that practitioners can put to use in their everyday practices. Since this format was so popular, we intend to use it again for our 2008 meeting, planned for early November. If you have any specific topics that you feel would be good for one of our short (20-25 minute) evidence-based presentations, let us know. Look for updates and details in the near future.

Another effort for us is to revitalize PROH and the enthusiasm that all of you bring to our organization. While we have had several studies either ongoing or recently completed, most studies have only been able to use relatively few of our members. So we want to initiate activities in which everyone can participate. Some of these include regular surveys to obtain information on various topics of interest, for example practice patterns, or selection of dental materials and techniques used in your practice. These will typically have 10 or fewer multiple-choice or short-answer responses. One such effort took place this past summer, in which we asked all PROH practitioners to fill out two surveys regarding the effect of eugenol-containing products on adhesive bond strength. This was done in support of a student research project by Laura Rickert, a second-year student at OHSU. (Continued on page 7)
The fourth annual Practice-based Research in Oral Health (PROH) conference at the World Trade Center on Friday, November 2nd was a huge success. The morning Continuing Education (CE) course, which PROH dentists and their staff attended at half price, received rave reviews from the 130 participants. “Dental Myths and Controversies” was a fast-paced course with seven specialists from Oregon Health & Science University. Each had approximately 30 minutes to present their topic. The morning closed with a panel of all speakers for a question and answer session. A brief summary of each topic is given on pages 4-6.

Following the CE course, 50 PROH practitioners attended a business luncheon. The highlight was an update by Dr. Jack Ferracane of four current studies. The first was the launching of a posterior composite study involving five practices and fifty restorations. Second was a review of the preliminary results for a temporary crown study conducted in ten practices with one hundred provisional crowns. Third was a chlorine dioxide mouth rinse study for one hundred thirty patients with mild to moderate periodontitis. And finally, we were excited to assist second-year dental student Laura Rickert by participating in our first non-clinical study evaluating dentists’ attitudes on eugenol-containing temporary material on adhesive bond strength (see pages 3-4).

The last topic on the agenda of the business meeting was a discussion of the future of the PROH Network. Funding of research projects continues to be a challenge. Industry-sponsored studies provide funds for clinical projects. However, the number of practitioners that can be involved is limited. Network members can anticipate seeing more studies that can be conducted as surveys and involve more practitioners. The use of electronic communications will also increase.

### Steering Committee Members Needed

Have you ever wondered how and why decisions are made for the PROH network? Would you like to directly influence those decisions? Now is your chance! We are seeking two dentists and one office manager to join the PROH Steering Committee.

The current composition of the group includes six private practice dentists, one private practice staff member, one patient advocate, four OHSU School of Dentistry faculty/staff, and two representatives from OHSU’s medical practice-based research network.

The committee serves several functions: providing direction for the network, representing the interests of network members, suggesting study ideas, serving as a sounding board for potential study ideas, approving study concepts, and serving as a liaison with network members.

Volunteers interested in participating in the committee can expect to attend an annual meeting (typically in April during the Oregon Dental Conference) and to participate in phone conferences no more than two to three times per year. Additional time commitments can include reviewing and providing guidance for bylaws, reviewing and approving/disapproving study ideas, providing guidance for the PROH annual conference, and assisting with recruitment of network participants.

If you are interested in this exciting leadership opportunity for professional growth or if you have an office manager that could provide valuable guidance in incorporating research in private practices, please contact Dr. Tom Hilton (503.494.8672 or hilton@ohsu.edu) or Cindy Barnes (503.418.1410 or barnesc@ohsu.edu).
Effects of Eugenol Concentration in ZOE

Laura Rickert, an OHSU second-year dental student, received one of the very first grants from the Oregon Clinical and Translational Research Institute that enabled her to design and implement a research project under the mentorship of Drs. Jack Ferracane, Ph.D., and Tom Hilton, D.M.D., M.S. She was enthusiastically assisted in her study by the Practice-based Research in Oral Health (PROH) network.

Objectives: The literature is contradictory regarding the effects of eugenol on dentin bonding. This study 1) evaluated effects of eugenol concentration in ZOE provisionals on dentin bond strength of composite and 2) assessed dentists’ opinion of potential ZOE effects before and after seeing study results.

Methods Part 1: This portion of the project was a laboratory study that examined to what extent altering the ratios of zinc-oxide powder to eugenol liquid would have on shear bond strength of a resin dentin adhesive. Eighteen molars divided into six groups had occlusal enamel removed exposing dentin. A layer of ZOE (IRM/Caulk) was applied to dentin at the manufacturers P: L ratio 6:1 by weight, or with greater eugenol amounts (P: L of 6:1.5, 6:2, 6:2.5 and 6:3). The control group had no ZOE. After storing in 100% humidity at 37°C for seven days, ZOE was removed by hand instrument and a water-pumice slurry (10s). Optibond FL (Kerr) dentin adhesive was applied, and resin composite (Premise) was built up in 2x2mm increments. Teeth were stored overnight, and then cut into 1x1mm sticks for microtensile testing (1mm/min).

Results Part 1: Results were analyzed using ANOVA/Tukey’s (p=0.05). The results are presented in the table below. The groups with the same letter showed no difference in the laboratory results. The results of the testing showed that the bond strength was not affected by prior exposure of dentin to ZOE, even when eugenol concentration was three times that recommended by the manufacturer.

<table>
<thead>
<tr>
<th>Powder: Liquid (P:L)</th>
<th>Mean ± s.d.</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:1.0</td>
<td>28.93±9.65</td>
<td>a, b</td>
</tr>
<tr>
<td>6:1.5</td>
<td>23.17±10.66</td>
<td>b</td>
</tr>
<tr>
<td>6:2.0</td>
<td>23.16±4.60</td>
<td>b</td>
</tr>
<tr>
<td>6:2.5</td>
<td>31.63±10.19</td>
<td>a</td>
</tr>
<tr>
<td>6:3.0</td>
<td>25.43±7.69</td>
<td>a, b</td>
</tr>
<tr>
<td>Control</td>
<td>28.78±6.15</td>
<td>a, b</td>
</tr>
</tbody>
</table>

Conclusion Part 1: Exposure to ZOE had little effect on adhesive bond strength to dentin.

Methods Part 2: The second part of the study consisted of a web-based survey of PROH network dentists before and after the results of the study laboratory component were available. The questionnaire surveyed PROH dentists about their knowledge of materials that contain zinc-oxide-eugenol cements and the use of restorative methods in their practices. After the lab experiments were completed, the participating dentists received the results, the related analyses, and a follow-up survey.

Results Part 2: Ninety-three percent of dentists (n=30) pre-surveyed were aware of potential adverse effects of eugenol on bonding and 83% expected this study to support that. After seeing the results and being presented with a supporting literature review, 82% said they would be less concerned about using eugenol prior to dentin bonding.

Conclusion Part 2: Dentists presented with laboratory evidence and supporting literature changed their opinion about usage of a dental material.

(Continued on page 4)
Below is a summary of the November 2, 2007 continuing education course presented during the Fourth Annual PROH Conference.

“Do All 3rd Molars Need to be Removed?” by Leon A. Assael, D.M.D., Professor and Chairman of the Department of Oral and Maxillofacial Surgery and Director of the Oral and Maxillofacial Surgery Residency Program, OHSU.

Dr. Assael presented the pathology associated with retained 3rd molars and the systemic impact of the 3rd molar pathology. Based on the scientific literature, Dr. Assael suggested that the decision to retain 3rd molars could be justified for several reasons: absence of caries, absence of plaque and bleeding/drainage on probing, and a clinical finding of periodontal probing depths that are less than 3 mm. Also, the 3rd molars have to be in occlusion with opposing teeth and have a keratinized, attached gingival tissue to surround the tooth.

“Bonded vs GP Obturation” and “One vs. Two Appointment Endo” by J. Craig Baumgartner, D.D.S., M.S., Ph.D., Professor and Chairman of the Department of Endodontontology and Director of the Advanced Education Program in Endodontics, OHSU.

Dr. Baumgartner evaluated the use of bonding agents in root canal obturation. He discussed some of the limitations of dentin bonding in a root canal, like polymerization shrinkage and infiltration and deterioration of the resin bond because of prolonged etching time. Also, the one versus two appointment system for endodontic treatment was analyzed. The latest scientific research shows no significant difference between the outcomes of endodontic treatment performed in one versus multiple appointments. Dr. Baumgartner underlined the need for future research for improved bonded root filling materials.

“Lasers vs. Other Periodontal Treatment Modalities” by Winthrop Carter, D.D.S., Chairman of the Department of Periodontics, Director for the Advanced Education Program in Periodontics, and an attending periodontist at OHSU Hospitals & Clinics and VA Medical Center, Portland, Oregon.

Dr. Carter presented an in-depth review of the literature published in the last 15 years and critically analyzed the scientific quality of the studies. He concluded that there is insufficient evidence to suggest that any specific wavelength of laser is superior to traditional modalities of therapy. Lasers are being marketed as a high tech dentistry option but treatment outcomes for subgingival treatment of chronic periodontitis are no better than with conventional therapy. Dr. Carter’s final suggestions were that a general dentist might buy a laser for soft tissue procedures external to the gingival sulcus and for other general
dentistry applications, but not for LANAP (Laser Assisted New Attachment Procedure), scaling/root planing, or as a substitute for flap surgery.

“Do 3rd Molars Move Teeth and Cause Relapse Following Orthodontic Treatment?” and “Does Invisalign Really Work?” by David Covell, D.D.S., Ph.D., Associate Professor and Chair of the Department of Orthodontics. His present research interests include animal models and clinical studies investigating biological aspects of facial growth and orthodontic tooth movement.

Dr. Covell discussed the most significant publications of the last 30 years regarding the effect of 3rd molar eruption on late lower incisor crowding and relapse of orthodontic treatment. The reviewed studies underlined that the rationale to remove 3rd molars in an attempt to reduce the level of crowding of the lower anterior teeth is scientifically unproven. Dr Covell also discussed the efficacy of the Invisalign System in tooth movement and reviewed some of its advantages, which were mainly related with intra-arch mechanics (improving alignment, resolving crowding and spacing for < 5 mm cases). The inter-arch mechanics were included in the weaknesses category of the Invisalign System (occlusal contacts open, increased overjet).

“Implants vs. Fixed Partial Dentures” by Scott R. Dyer, D.M.D., M.S., Ph.D., Part-time Assistant Professor in the Department of Restorative Dentistry in the divisions of Biomaterials and Biomechanics, and Prosthodontics. He maintains a private practice limited to fixed, removable and implant prosthodontics.

Dr. Dyer presented a summary of the considerations when treatment planning for partial edentulism and how to optimize the results of prosthodontic treatment. The general goal of the dentist has to be to maximize the functional and aesthetic outcome of each case, by taking into consideration evidence-based results of the last decades of dental research. He advised dentists to do first a very comprehensive assessment of the bone, soft tissue, adjacent teeth and position of the edentulous space, and then consider the three basic treatment options available: fixed partial denture, removable partial denture and implant-supported restoration. The review of the literature shows extraordinary results for implant restorations, which have a very high longevity (96 - 97% at 11-16 years) and a 10-year survival rate of the adjacent teeth of 99.5%. He finally reviewed for the audience the clinical steps for an implant retained fixed restoration, pointing at the multiple advantages the procedure has to offer in spite of the potential high cost.

“Immediate vs. Delayed Loading of Implants by Sam El-Ebrashi, B.D.S., M.S., currently in a private practice limited to implants and prosthodontics and formerly an OHSU Assistant Professor in the Division of Prosthodontics.

Dr. El-Ebrashi presented his professional opinion on immediate versus delayed placement and loading of implants, and their survival rates. After reviewing the literature, he summarized some of the reasons a clinician might not choose to immediately place and load an implant: active infection, lack of primary stability, damage to the buccal plate and soft tissue, and occlusal overload to the temporary prosthesis. Regarding the healing of immediate and delayed implants sites, his review of the literature showed no significant differences in radiographic crestal bone levels, or probing of pockets at immediate, delayed, or late implant sites with observations between 1 - 4.5 years. He concluded that implants placed into fresh sockets fail to prevent physiologic bone modeling and remodeling because an inevitable small amount of bone loss occurs whether implants are immediately placed or not. The periodontal biotype is also critical regarding peri-implant tissue response. A thick biotype is less prone to recession, and tissue preservation is more difficult than in a thin biotype.

“Do Emerging Technology Devices More Accurately Diagnose Intraoral Lesions?” by F. James Kratochvil, D.D.S., Associate Professor and Chairman of the Department of Pathology. He also serves on the faculty of the School of Medicine in the Department of Pathology. He is director of the OHSU Oral Pathology Biopsy Service and has an active practice seeing clinical oral pathology patients.

Dr. Kratochvil discussed the capacity of emerging technology devices in accurately diagnosing cancerous oral lesions. Dr. Kratochvil critically analyzed the pros and cons of some of the marketed devices (ViziLite, Velscope) for oral cancer screening and commented on the lack of evidence-based data to support the use of these highly marketed devices. In his concluding remarks, he praised dental professionals for their continuous efforts to improve their clinical skills for oral cancer detection and he was optimistic that the increased interest and effort will improve detection and prognosis in the future.
First Online PROH Survey

As mentioned in the Director’s Message beginning on page 1, we are now utilizing electronic communications mechanisms to increase PROH member involvement and to reduce expenses. This spring, we launched the first online PROH survey to guide the development of future online surveys. Below are charts reflecting the results of the 53 responses received from the 99 questionnaires sent. Thanks for your responses!

Would you like to be included in our mailing list for electronic surveys?

How many questions would you usually be willing to answer?

What types of survey questions would you prefer?

How frequently would you prefer to be contacted?

How much time would you be willing to spend filling out these surveys?

Would you be interested in participating in electronic studies that involved reviewing patient charts?

Keep Your Eyes Open!

For our next online query
We are seeking topics for the 2008 PROH Conference
Send your suggestions for the next “Dental Myths and Controversies” lineup to proh@ohsu.edu or wait until the online questionnaire arrives in your email.
In addition to the Practice-based Research in Oral Health (PROH) network, OHSU also facilitates a similar medical network known as the Oregon Rural Practice-based Research Network (ORPRN). To capitalize on these two like-minded entities, they have joined forces in the research project “Understanding Unmet Dental Needs in a Rural Oregon Community: Foundations for a Model Community Based Participatory Research Intervention.”

Baker City has one dentist that accepts low income patients covered by the Oregon Health Plan and there is not an alternative venue active. Local leaders in the medical, dental, and public health field are seeking to explore collaborative approaches to address this community dental challenge.

The intent is to ultimately address three goals: 1) to determine the prevalence of unmet dental needs in a rural Oregon community, 2) to engage community partners around the topic of interventions to improve access to preventive dental care, and 3) to explore whether primary care practices may be able to provide preventive dental services which help reduce dental access barriers in rural communities.

The current pilot project focuses on goal number 1. Tom Hilton, D.M.D., M.S. is leading the study with Baker City residents Sean Benson, D.D.S. (PROH member) and Jon Schott, M.D. (ORPRN member) rounding out the team.

During a regularly scheduled medical appointment, patients had their primary care clinician look into their mouths and rate four oral health conditions using standard medical codes. These include presence or lack of teeth, broken teeth, cavities, and infection. Patients also had the opportunity to complete a short anonymous survey regarding dental care availability asking if patients have health and dental insurance, whether they have a source of regular dental care, how frequently they visit a dentist, if they have any unmet dental needs, and to rate their oral health and overall health.

Primary care providers (physician assistants, nurse practitioners and medical doctors and registered nurse level nursing positions participated in a training on oral health screening conducted by Drs. Benson and Hilton. Both dentists were available for on-site feedback and guidance on the first day of the intervention and via telephone consult throughout the study period.

Approximately 1,600 oral screenings occurred over an eight week period of time in January and February. The data will be analyzed to determine the rate of dental problems and what percent of the screened patients have access to regular dental care. The results from this study will be used to develop a rationale for action and to provide the data necessary to apply for funding to develop a sustainable intervention to reduce unmet dental needs in Baker City. This intervention is intended to serve as a model for other rural communities working to reduce dental disparities.

For PROH to work, we need to be able to communicate with each other electronically via email. It is just too time consuming and expensive for us to use our limited financial resources to conduct these types of activities using paper and “snail mail”. And let’s face it, that is just the way of the world in this day and age. So please, if we don’t have an up-to-date email for you, get it to us. And start looking for regular emails from PROH….don’t assume it’s just spam and delete it. The important thing is to be as active as we can to support each other in providing the most timely, evidence-based care that we can for our patients. That is ultimately what PROH is all about. With your enthusiastic support, PROH can and will lead the way in practice-based evidence generation and utilization.

Send us Your Email Address!
Since we will be relying more upon email communications from this point forward, please send your email address to proh@ohsu.edu
We continue to need extracted teeth for use in various laboratory studies. Please contact Cindy at 503.418.1410 for details. Thanks to all of you who have already sent us teeth and for referrals to other dentists (e.g., oral surgeons).

Submit your favorite seasonal photo – digital photos preferred! – to be used on the front cover of an upcoming PROH Newsletter.

For those of you that have not completed the online HIPAA and Responsible Conduct of Research training, you can access it at: http://www.ohsu.edu/cc/ed/bb

Once at the Web site, you will need to register if you haven’t done so already. Use the “Non-OHSU Researcher or Collaborator” option and enter “SOD PROH Network” in the “Description of Affiliation” box. The two courses you need to take are:

- HIPAA-Privacy and You
- RCR Involving Human Subjects

For step-by-step instructions, contact Cindy at 503.418.1410 or barnesc@ohsu.edu.