

OF THE CALIFORNIA DENTAL ASSOCIATION

# Journal

DECEMBER 2012

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$\alpha\text{v}\beta 3$  in Melanoma

Oral Wound Fibroblasts

Ligands and Oral Squamous  
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*Research Work of*

*Young Investigators*

*and Their Mentors*

RICHARD T. KAO  
DDS, PhD

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## A Salute to Dr. Bob

KERRY K. CARNEY, DDS

**F**our years ago, I began research for my first editorial by interviewing the past few editors of the *Journal of the California Dental Association*.

I asked them what changes they had been involved with during their tenures as editor and what advice they could give me. My immediate predecessor, Alan Felsenfeld, told me he was threatened with bodily harm should he ever discontinue the Dr. Bob section of the *Journal* and that I should take that to heart.

This was a common theme in all of the interviews. Each past editor wanted to make it clear that he had been in some way involved with finding, establishing, or institutionalizing the Dr. Bob column.

Robert E. Horseman's Dr. Bob column is unique in dentistry. Jack Conley tells a story from a long time ago when he was attending an editor's symposium at the ADA headquarters in Chicago. It seems the lecturer was critiquing various journals. Suddenly, the Dr. Bob column appeared on his screen. He asked the audience, "Whom does this belong to?" Dr. Conley raised his hand and was admonished by the instructor: "Never let him go! His sense of humor and his writing skills are golden."

Dr. Bob appeals to many, many readers. Even my mother tells me, "I like the *Journal*, but I love Dr. Bob."

Just last year, when it came time to suggest speakers for the 2012 American Association of Dental Editors meeting in San Francisco, honoring Dr. Horseman seemed a "no-brainer." It would be a good opportunity to let other editors see that humor can add great value to an association's peer-reviewed publication.

I immediately sent off an email to Dr. Horseman to invite him to come speak



**Even my mother tells me,  
"I like the *Journal*, but I love Dr. Bob."**

and be honored at the AADE meeting. In return, I received the following explanation for his decision to decline.

*My 15 minutes of fame arrives so late in my life I feel certain I can handle any attention that comes my way. Even though I am shy to the point of paranoia and modest with ample reason to be so, I am convinced I will not embarrass myself or my family should the spotlight of fame, however fleeting, pass over me. Or so I think.*

*When it was revealed that the 1990 Scientific Session of the California Dental Association to be held in San Francisco would be dedicated to me, it was like turning a 5 million candlepower klieg light on a mole. In a state of mounting hysteria, I try to comfort myself with the strong likelihood I will be struck down by some fatal illness or flattened by a bus before the big event.*

*All my life I have been content to remain in the shadows, to actively seek out those places where I would be least noted, like the back row of the lecture hall in dental school. It was that ploy that ensured my graduation. The committee responsible for determining eligibility for the event not only couldn't find any detrimental things about me, they couldn't even detect any evidence of my having been there for four years.*

*So it is that I find myself sharing the head table at the annual Sessions lunch with keynote speaker Willard Scott and certain dignitaries of CDA. Upwards of 300*

*people have paid good money to enjoy Scott's address; and although his bulk is ample for me to hide behind, I am too petrified to make the attempt. For two hours prior to the luncheon, I have been pacing the floor in a demonstration of an anxiety attack complete with Cheyne-Stokes breathing that would have turned Woody Allen green with jealousy. My wife is an expert on the subject of anxiety. Having lived in a more or less constant state of it during our 64 years of marriage, she knows anxiety when she sees it. Tiring of watching me pace, she insists that I take one of her pills to calm myself down. This I do with gratitude, only to notice 30 minutes later that the medication has resulted in no detectable lessening of symptoms.*

*Flop sweat takes many forms. Perhaps my affliction calls for a more potent dosage. "Well, here then," she offers, "take another tablet. It can't hurt."*

*This is true, it doesn't hurt. In fact, as I sit here at the raised front table wedged between Willard Scott and the president of the association, I am feeling no pain at all. While the president drones on about whatever it is that we're all here for, I discover I am having a little trouble focusing clearly on the crowd in front. I find if I support my head with both hands, hooking my thumbs securely back of my ears, the audience seems less fidgety. Even the waiters are moving slowly, as if engaged in a dry land version of synchronized swimming.*

*Into this peaceful setting, I hear my name announced. At least I think it's my name. The president is looking expectantly at me, and there is a smattering of applause. This is mainly from the people who have come to hear Willard Scott and wish to get this phase of the program over as expeditiously as possible. I am experiencing some problem with my knees, but with a little assist from Mr. Scott, I find the lectern provides ample support if I grasp both sides of it with my arms and rest my chest against its slanted surface.*

*I have prepared a little speech, but somebody has substituted my notes with what looks like a laundry list written in Sanskrit. I beam a glassy-eyed smile in the general direction of the audience and deliver a monologue similar to what you would hear from a person with a speech impediment trying to dislodge peanut butter from his palate.*

*The crowd applauds wildly, knowing that finally the program can begin. I sit down abruptly, clutching a plaque that has somehow materialized in my hands. Both Mr. Scott and the president assist me in stabilizing my chair, the seat of which seems to have developed a 45 degree slant toward the floor. This flaw in the seat threatens to launch me smoothly right under the table until I have presence of mind to hook my chin on its edge. More applause.*

*Five hours later my wife, with help of a couple of wait-persons, had bundled me out a side door and back to our hotel. I am told that Willard Scott gave a warming presentation. I wish I had heard it. How he got through this without my wife's help, I'll never know. The thing is, I have 11½ minutes of fame still owed me. I hope nobody is going to insist I collect it.*

*We both agreed he had collected less than 25 percent of the fame owed him in 1990. However, understanding how painful the proposed tribute would have been for Dr. Horseman, I made*

*another suggestion. What if we do a "virtual" interview? It could be scripted by Dr. Horseman with me acting as the interviewer and Dr. Dan Jenkins playing the role of Dr. Horseman. This he found more appealing so he submitted the following script:*

*Kerry: Good morning, Dr. Horseman. Thank you for meeting with us today. I know you have been very busy during your recent retirement — napping and critiquing daytime television.*

*Dan: Thank you for having me, Dr. Carney. Will there be a buffet?*

*Kerry: Perhaps later — after you've gone. May I call you Dr. Bob?*

*Dan: You may call me Dr. X.*

*Kerry: Why's that?*

*Dan: In case there is any litigation; I want to remain anonymous.*

*Kerry: Is there anything at all you can tell us about yourself?*

*Dan: Sure. I was born at Bethany Hospital, Kansas City, Kansas, of poor but impoverished parents. It was a Wednesday morning about 10 as I recall ...*

*Kerry: Uhh ... Bob, could we fast-forward about 50 years or so — we're running a little late. Your readers would like to know how you got started writing your column over 30 years ago.*

*Dan: Well, first I got some lined yellow paper. Came in a pad back then. Luckily, I already had a Ticonderoga H2 pencil left over from junior high school and a pocket knife to keep it sharp. I did a lot of erasing before I got my glasses, so I always had to have an eraser, preferably on the end of the pencil. Or you could ...*

*Kerry: Sorry ... I meant WHY you got started.*

*Dan: Short version?*

*Kerry: By all means! (looks at watch)*

*Dan: OK — in the late 1970s, a dental magazine offered a first prize of a*

*free, expense-paid trip to Grand Cayman to the winner of a contest depicting some experience of the author's choice. I submitted an account of my family's six-year working holiday in Australia.*

*Kerry: And you won?*

*Dan: Yes.*

*Kerry: Why?*

*Dan: Who knows? I think my article was the only one submitted. The magazine later went out of business, hinting that I may have abused the "all expenses paid" part of the prize. The Journal of the California Dental Association tried a similar stunt in the early '80s.*

*Kerry: Stunt?*

*Dan: Yep, the new feature was called "Your Turn," and dentists were invited to submit short articles on any subject of their choosing. Apparently that's what editors do when they can't think of anything else.*

*Kerry: And you won another trip?*

*Dan: No. But the editor at the time offered to put my name on the masthead as a "contributing editor." I didn't know what a masthead was, let alone a contributing editor, but it sounded impressive until I discovered it was a synonym for pro bono.*

*Kerry: It is impressive. My name is on it.*

*Dan: So are the janitorial staff and the guy who goes for coffee. Have you ever been offered a free trip to the Caribbean?*

*Kerry: Shall we move on? Where do you get your ideas for articles?*

*Dan: I steal them from reliable sources like National Enquirer, alter the facts, rearrange the paragraphs and aim for 900 words.*

*Kerry: Why only 900?*

*Dan: Because that's the amount of space the advertising department left us.*

*Kerry: Has that been a problem for you?*

*Dan: Not at all. This is supposed to be a humor column. Dentistry is not a funny profession like coal mining or, say, landfill compacting, so the entire spectrum of dental*

humor can be covered in less than 200 words. The rest of the allotted space is filler and big cartoons.

Kerry: Did you ever try writing about anything other than dentistry?

Dan: Yes. I wrote a scientific treatise about bugs once.

Kerry: Was it well-received?

Dan: I got a “cease and desist” letter from the manufacturers of RAID. Then a coalition of bugs and entomologists wrote in saying they knew where I lived and would be right over.

Kerry: How many articles have you had published over the last 32 years?

Dan: If you mean original articles, four. The other 385 are minor variations of those with the assistance of cartoonists Dan Hubig and the late Charlie Hayward, who actually earned a living doing this sort of thing.

Kerry: How long do you think you can get away with this?

Dan: Indefinitely, although somebody at CDA made it harder by changing the feature name from “Your Turn” to “Dr. Bob.” I am Dr. X since a disclaimer appeared in the year 1994 after numerous complaints.

Kerry: What disclaimer? I don’t remember any disclaimer.

Dan: It was before your time, Kerry, like polyvinyl and automatic transmissions. The waiver stated: “Ed. Note: In an effort to quell recurring threats by lynch mobs and like-minded literary critics, the Journal issues this disclaimer: There is no such person as Robert E. Horseman. This is a nom de plume chosen by staff members who are forced to take turns writing this column each month as a condition of employment. Let us hope this puts the matter to rest.”

Kerry: Hmm — I’ve never been required to do that.

Dan: That’s because you’re the editor-in-chief. You can get into enough trouble on your own.

Kerry: Well, thank you, Dr. X, for this illuminating visit.

Dan: Thank YOU! Remember — this never happened. When do we eat?

Dr. Horseman will continue to write new columns for Dr. Bob, but he has asked to write them less frequently. In order to grant his request and still have Dr. Bob as part of our regular lineup, I invite you to request that we rerun your favorites by emailing them to Publications Specialist Andrea LaMattina at [andrea.lamattina@cda.org](mailto:andrea.lamattina@cda.org). We will oblige by reprinting those requested favorites interspersed with any new Dr. Bob submissions.

We hope to be able to collect all the Dr. Bob columns and make them available online at some point. (I am telling you this for two reasons: 1. I think it will be a great resource. 2. So that I will not have to start examining the underside of my car with a mouth mirror before starting the ignition.)

Dr. Horseman is a friend, colleague, wonderful writer, and a treasure for the Journal, CDA, and the world of dentistry. I join our readership in hoping to be able to continue to enjoy the world from his point of view for a long time to come. ■■■■

## The Journal of the California Dental Association welcomes letters.

We reserve the right to edit all communications and require that all letters be signed. Letters should discuss an item published in the Journal within the past two months or matters of general interest to our readership. Letters must be no more than 500 words and cite no more than five references. No illustrations will be accepted. Letters may be submitted at [editorialmanager.com/jcaldentassoc](http://editorialmanager.com/jcaldentassoc). By sending the letter to the Journal, the author certifies that neither the letter nor one with substantially similar content under the writer’s authorship has been published or is being considered for publication elsewhere, and the author acknowledges and agrees that the letter and all rights of the author with regard to the letter become the property of the California Dental Association.



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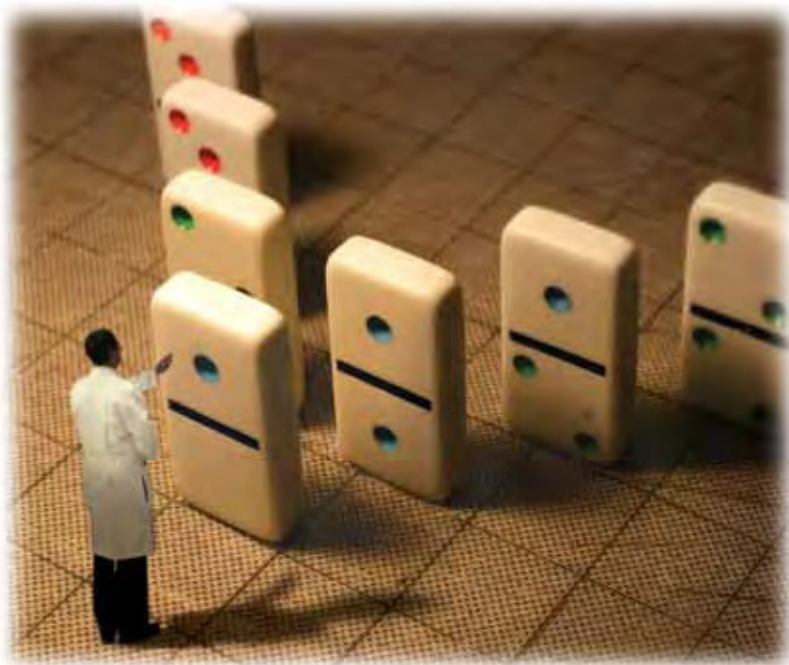
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## Rule of Double Effect

DAVID W. CHAMBERS, PHD

Principles ethics, which is the foundation for the ADA Code of Ethics, works something like this: Abstain from procedures that are thought to be risky because of the “principle of nonmaleficence.” Honor “respect for autonomy” by giving full informed consent. Do not overtreat or overcharge because that violates the “principle of justice.” Do not allow others to harbor detrimental misconceptions because of “veracity” and help others to demonstrate “beneficence.”

This works well when there are clear, one-to-one relationships between principles and actions. But most realistic situations involve multiple principles, and these may collide. For example, the patient has a history of dental neglect and might choose to

CONTINUES ON 911

## Correction

The article “Back to the Future: The Medical Management of Caries Introduction” by Steven Duffin, DDS, inadvertently reversed the titles for Disease care and Total encounters in the figure on Page 857 of the November 2012 issue of the *Journal of the California Dental Association*.

The online version of the November issue has been revised to reflect the correct order of the titles.

The *Journal* apologizes for the error.

## Study: Oral Health and Pancreatic Cancer Risk

Examining the relationship between oral health and pancreatic cancer, a new study measured antibodies to 25 oral bacteria — including both pathogenic and commensal bacteria — in prediagnosis blood samples from 405 pancreatic cancer cases and 416 matched controls, nested within the European Prospective Investigation Into Cancer and Nutrition Study.

The scientists found individuals with high levels of antibodies against the pathogenic periodontal bacteria *Porphyromonas gingivalis* had twice the risk of pancreatic cancer of individuals with lower levels of these antibodies. Results, published in the journal *Gut*, also showed study subjects with high levels of antibodies for certain kinds of harmless “commensal” oral bacteria were associated with a 45 percent lower risk of pancreatic cancer. The researchers speculate that the “increased levels of antibodies against specific commensal oral bacteria, which can inhibit growth of pathogenic bacteria, might reduce the risk of pancreatic cancer,” they wrote.

“This is not an established risk factor,” the study’s co-lead author, Dominique Michaud, ScD, said. “But I feel more confident that there is something going on. It’s something we need to understand better.”





### Researchers Pinpoint 'Strong Oral Carcinogen' in Smokeless Tobacco

Scientists recently identified a specific ingredient in smokeless tobacco products as a strong oral carcinogen and called for federal regulation of the substance. The team of researchers, led by Stephen Hecht, PhD, identified the carcinogen as a nitrosamine compound called (S)-NNN.

According to the ACS, researchers gave laboratory rats a low dose of two suspected carcinogens in smokeless tobacco for 17 months in doses roughly equivalent to a person consuming half of a tin of smokeless tobacco every day for 30 years. They found that (S)-NNN induced high numbers of oral and esophageal tumors in the rats.

"This is the first example of a strong oral cavity carcinogen that's in smokeless tobacco," Hecht said in the news release. "Our results are very important in regard to the growing

use of smokeless tobacco in the world, especially among younger people who think it is a safer form of tobacco than cigarettes. We now have the identity of the only known strong oral carcinogen in these products."

The U.S. Food and Drug Administration has the authority to regulate tobacco products, but no regulations on the levels of specific carcinogens exist yet, Hecht explained.

"My suggestion is that levels of (S)-NNN in smokeless tobacco be decreased to below 10 parts per billion. That would make it more consistent with the levels of nitrosamines in food products," Hecht said. (S)-NNN also is in cigarettes and other smoked tobacco items, and he suggested that the substance be regulated in these products as well.

Research results were presented at the 244th national meeting and exposition of the American Chemical Society.

### Study May Lead to Understanding Biofilm Formation

When enough bacteria come together in a single location, they can develop the ability to move and inhibit biofilm formation, according to a recent study published in *Molecular Microbiology*.

This type of behavior, seen for the first time in marine sponges, could lead to an understanding of how to break up harmful bacterial biofilms, such as plaque on teeth. The scientists identified a new signaling system that, when there is a critical mass of bacteria present, causes the bacteria to create a flagellum that moves like a corkscrew and allows them to swim away, inhibiting the formation of biofilm.

"Anything we can discover about this bacterial communication could be really important in understanding how bacteria become pathogenic in humans or how they form film on teeth or internal medical devices," said study co-author Russell Hill. "Understanding that process may help in the future for controlling biofilms."

Marine sponges harbor complex and diverse bacterial communities — in some cases an estimated 30 percent to 40 percent of the sponge's biomass — creating an ideal place to study microbial signaling, the authors wrote.

The bacteria that colonize and are dependent on these marine sponges use quorum sensing to activate their movement when their population becomes dense, naturally limiting the amount of biofilm they form, the news release stated.

For more information, see the full study in *Molecular Microbiology*, 85(5):916–33.



## New Treatment Method May Reduce Inflammation and Bone Loss

Inhibiting the enzyme GSK3b stops bacterial-induced periodontal bone loss in mice, according to new research by scientists from the University of Louisville in Kentucky.

Researchers have found a way to prevent inflammation and bone loss surrounding the teeth by blocking a natural signaling pathway of GSK3b, which plays an important role in directing the immune response. The finding, published online first in the journal *Molecular Medicine*, not only has implications in preventing periodontal disease, but also may have relevance to other chronic inflammatory diseases, the university noted.

Because GSK3b plays a role in multiple inflammatory signaling pathways, it is associated with a number of diseases and also is being tested by scientists for its impact in Alzheimer's disease, Type II diabetes, and some forms of cancer.

"The traditional approach to dealing with periodontal disease is to prevent plaque from forming at the gumline or prevent the consequences of periodontal disease progression" researcher David Scott, PhD, said. "Our approach manipulates a natural mechanism within our bodies to prevent inflammation and subsequent degradation when exposed to the bacterium *Porphyromonas gingivalis*."



GSK3b is known to facilitate the inflammation that occurs during bacterial infections, so blocking this enzyme from completing its normal function by using the GSK3-specific inhibitor SB216763 stopped the inflammation process and subsequent bone loss induced by the key periodontal pathogen *P. gingivalis*, Scott added.

The article, "Inhibition of GSK3 abolishes bacterial-induced periodontal bone loss in mice" can be found online at [molmed.org/pdfstore/12\\_180\\_Adamowicz.pdf](http://molmed.org/pdfstore/12_180_Adamowicz.pdf).

### DOUBLE EFFECT, CONTINUED FROM 909

"get by with less than ideal care" if given the option. So should the dentist "shade" the treatment presentation to favor what the dentist believes is in the patient's best oral health needs? Beneficence, respect for autonomy, and veracity collide. These situations are called ethical dilemmas. They are a fixture in real life; they are a great teaching strategy; and there is no generally satisfactory way of resolving them. It is human nature to resolve dilemmas by minimizing the relevance of the principle that supports the least favored course of action.

But there are worse conflicts involving principles. Consider the situation where an obstetrician must either sacrifice a full-term fetus or the mother because of medical complications. There is no action possible that saves the physician from taking a life. Since that is *prima facie* wrong in every moral code, how

is culpability to be avoided? These are called cases of "double effect" because a single action has multiple outcomes and one cannot choose the good without activating the bad.

Here are the questions to address:

- Is there strong scientific reason to believe that the most desired effect will follow from the action?
- Is there no other means of achieving the most desired outcome without taking the action?
- Has every collateral precaution and mitigation been taken to dampen the undesired outcome?

The experts say that being able to answer all three questions in the affirmative mitigates culpability.

Now let's turn this rule on its head. To what extent can an individual claim moral credit for a course of action that has multiple justifications? Silvio Berlusconi, the former prime minister of Italy, claimed that

allegations of sex scandals are "politically motivated." Even if they are, should the probe be dropped? BP is running television ads touting the beautiful gulf coast where its oil rig blew out — not as reparation but as PR. Fannie Mae makes money to repay the government bailout by betting in the market that it can prevent customers from refinancing. Dentists who weave insurance copayments promote patient care and add to their own bottom lines.

The Nub:

- ① Making the right choice is often complex, so all effects must be considered.
- ② Justifications (the reasons given after the fact) should match the motives (reasons before the fact).
- ③ It is dishonest to select only the praiseworthy reasons for one's behavior.

David W. Chambers, PhD, is professor of dental education, Arthur A. Dugoni School of Dentistry, San Francisco, and editor of the *Journal of the American College of Dentists*.

It goes without saying that you're a  
pro with a half Hollenback carver.





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### NIH Gives \$2.5 Million Grant for Artificial Salivary Gland Project

Researchers are breaking new ground in a project to create artificial salivary glands.

The four-year project is a collaborative effort between researchers at Rice University, the University of Delaware, and Christiana Care Health System and is funded through a \$2.5 million grant from the National Institutes of Health. The team hopes its work will lead to new solutions for xerostomia in head and neck cancer patients undergoing radiation.

Radiation treatment often destroys the saliva-producing cells in the mouth — causing dry mouth that can lead to severe dental issues and difficulty swallowing, speaking, and eating.

“Few in the research community have applied tissue engineering strategies to the problem. Our hope is that by assembling a strategic team with engineering,

biological, and clinical expertise, we can make headway and offer new hope to patients suffering from this condition,” said University of Delaware professor Xinqiao Jia, PhD.

The research team will develop hydrogels that will be used as instructive matrices to guide the salivary cells through morphogenesis processes and potentially organize them into functional salivary glands. Jia explained that the hydrogels can be “tuned” to match the structure and properties of the native tissues in salivary glands, increasing the potential for success.

Doctors will culture a patient’s cells prior to radiation treatment and then re-implant the salivary glands grown from the patients’ own cells back into the mouth following treatment.

“The goal is to help cancer survivors overcome dry mouth problems and improve their quality of life,” Jia added.



### Most Americans Choose to Whiten Teeth at Home

New research from Mintel – a global supplier of consumer, media and market research – found that only 10 percent of Americans looking to whiten their smiles opt for professional whitening service.

Forty-one percent of respondents have tried to whiten their teeth in the past 12 months using toothpaste, 17 percent attempted to brighten their smiles with at-home mouthwash, and 15 percent used over-the-counter whitening strips.

“Some of the key growth drivers in the oral care market include an increased interest in whitening capabilities and products that deliver multiple benefits,” Mintel’s home and personal care analyst, Gabriela Mendieta, said. “Also, many consumers are becoming more aware of how oral care affects their general health and marketers can use this opportunity to push products that not only help with teeth and gums, but one’s overall well-being.”

Mintel’s report also shows that consumers shop for toothpaste with very specific needs. The research found that 73 percent of people look for toothpaste that prevents cavities, 70 percent look for tartar control, and 66 percent look for a product to whiten their teeth.

“Oral care products that feature multiple attributes are expected to do well with consumers in the coming years as it is more cost effective to buy one product that helps with several needs,” Mendieta added.

Source: Mintel Group



## Study Measures U.S. Doctors' Burnout, Job Satisfaction

A new study measuring the rates of job burnout found it to be more common among physicians than other U.S. workers, and found that physicians in specialties at the front line of access to care seem to be at greatest risk.

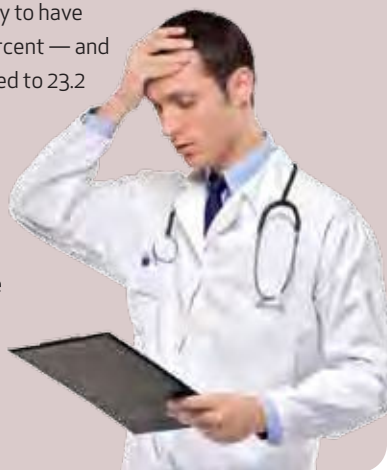
Researchers conducted a national study of job burnout in a large sample of U.S. physicians from all specialty disciplines using the American Medical Association Physician Masterfile and surveyed a probability-based sample of the general U.S. population for comparison.

Results of the study, published in the journal *Archives of Internal Medicine*, showed 45.8 percent of physicians have at least one symptom of job burnout. In addition, physicians are more likely to have symptoms of burnout than other working adults — 37.9 percent versus 27.8 percent — and 40.2 percent of physicians are dissatisfied with their work-life balance compared to 23.2 percent of all other workers.

"Substantial differences in burnout were observed by specialty, with the highest rates among physicians at the front line of care access," authors wrote.

In addition, researchers found that compared to high school graduates, individuals with an MD or DO degree had a higher risk of job burnout, and individuals with a bachelor's degree, master's degree, or professional or doctoral degree with the exception of an MD or DO degree, were at lower risk for burnout, the authors noted.

See the full study, "Burnout and Satisfaction With Work-Life Balance Among U.S. Physicians Relative to the General U.S. Population," in the October 2012 issue of the journal *Archives of Internal Medicine*.



## Study Shows Handheld X-Ray Unit Operator Doses Comparable to Fixed Unit

According to a recent study, certain handheld dental X-ray units do not produce higher operator doses of radiation than fixed X-ray units.

"Concern that handheld X-ray units produce higher operator doses than fixed X-ray units has caused regulatory agencies to mandate requirements for use of handheld units that go beyond those recommended by the manufacturer and can discourage the use of this technology," the authors wrote.

According to the study, published in *Health Physics*, researchers used a handheld X-ray unit and a pair of mannequins — along with an array of personal dosimeters and a pair of pressurized ion chambers — to measure

the dose to a simulated operator under two conditions: "exposures made according to the manufacturer's recommendations and exposures made according to manufacturer's recommendation except for the removal of the X-ray unit's protective backscatter shield."

Results of the study showed that "the dose to an operator of this equipment will be less than 0.6 mSv y<sup>-1</sup> if the device is used according to the manufacturer's recommendations," the authors wrote.

This suggests that doses to properly trained operators of well-designed, handheld dental X-ray devices will be below 1.0 mSv y<sup>-1</sup> even if no additional operational requirements are established by regulatory agencies, the authors concluded.

Source: *Health Physics* 103(2 Suppl 2): S179-85, 2012.





**“Mucositis prevention would have a remarkable impact on the quality of life and recovery of cancer patients and at the same time would reduce the cost of treatment.”**

J. SILVIO GUTKIND, PHD

### Drug Could Prevent Radiation-Induced Mucositis

Research scientists from the U.S. National Institute of Dental and Craniofacial Research have identified a drug that protects stem cells and could help cancer patients avoid developing radiation-induced oral mucositis.

Radiation therapy may cause this debilitating condition by depleting normal stem cells capable of repairing damaged tissue.

In the preclinical study published in the journal *Cell Stem Cell*, researchers discovered that mice that had received the FDA-cleared rapamycin during radiation treatment did not develop oral mucositis. They found that the

mTOR inhibitor prevented radiation-induced tissue damage by protecting the normal stem cells vital for tissue repair —extending the lifespan of these normal stem cells and increasing their repopulating capacity, the authors noted.

“Mucositis prevention would have a remarkable impact on the quality of life and recovery of cancer patients and at the same time would reduce the cost of treatment,” said senior study author J. Silvio Gutkind, PhD. “Our study provides the basis for further testing in humans, and we hope that these findings can be translated rapidly into the clinic.”

For more, see the full study in the journal *Cell Stem Cell*, Vol. 11(3):401-14.

## Honors



**Ken Fischer, DDS**, a visiting lecturer at the University of California, Los Angeles and Loma Linda University schools of dentistry and past president of the

California Association of Orthodontists, Orange County Dental Society and the Foundation for Orthodontic Research, has been honored with the 2012 CAO Distinguished Service Award. Previously, Fischer served as the California component board member to the Pacific Coast Society of Orthodontists, a consultant to the Dental Board of California and chairman of its Ethics and Principles Revision Committee. He currently serves as a PCSO delegate to the American Association of Orthodontists House of Delegates and a member of the AAO Council on Communication.

### UPCOMING MEETINGS

#### 2013

Feb. 7-9	20th anniversary Conference and Exhibition, Academy of Laser Dentistry, Palm Springs, <a href="http://laserdentistry.org">laserdentistry.org</a>
April 7-13	U.S. Dental Tennis Association, TOPS'L Resort, Destin, Fla., 800-445-2524 or <a href="http://dentaltennis.org">dentaltennis.org</a>
April 11-13	CDA Presents The Art and Science of Dentistry, Anaheim, 800-CDA-SMILE (232-7645), <a href="http://cdapresents.com">cdapresents.com</a>
Aug. 15-17	CDA Presents The Art and Science of Dentistry, San Francisco, 800-CDA-SMILE (232-7645), <a href="http://cdapresents.com">cdapresents.com</a>
Oct. 31-Nov. 5	154th Annual Session, New Orleans, <a href="http://ada.org/session">ada.org/session</a>
Nov. 3-9	U.S. Dental Tennis Association, Big Island, Hawaii, 800-445-2524 or <a href="http://dentaltennis.org">dentaltennis.org</a>

To have an event included on this list of nonprofit association continuing education meetings, please email Courtney Grant at [courtney.grant@cda.org](mailto:courtney.grant@cda.org).





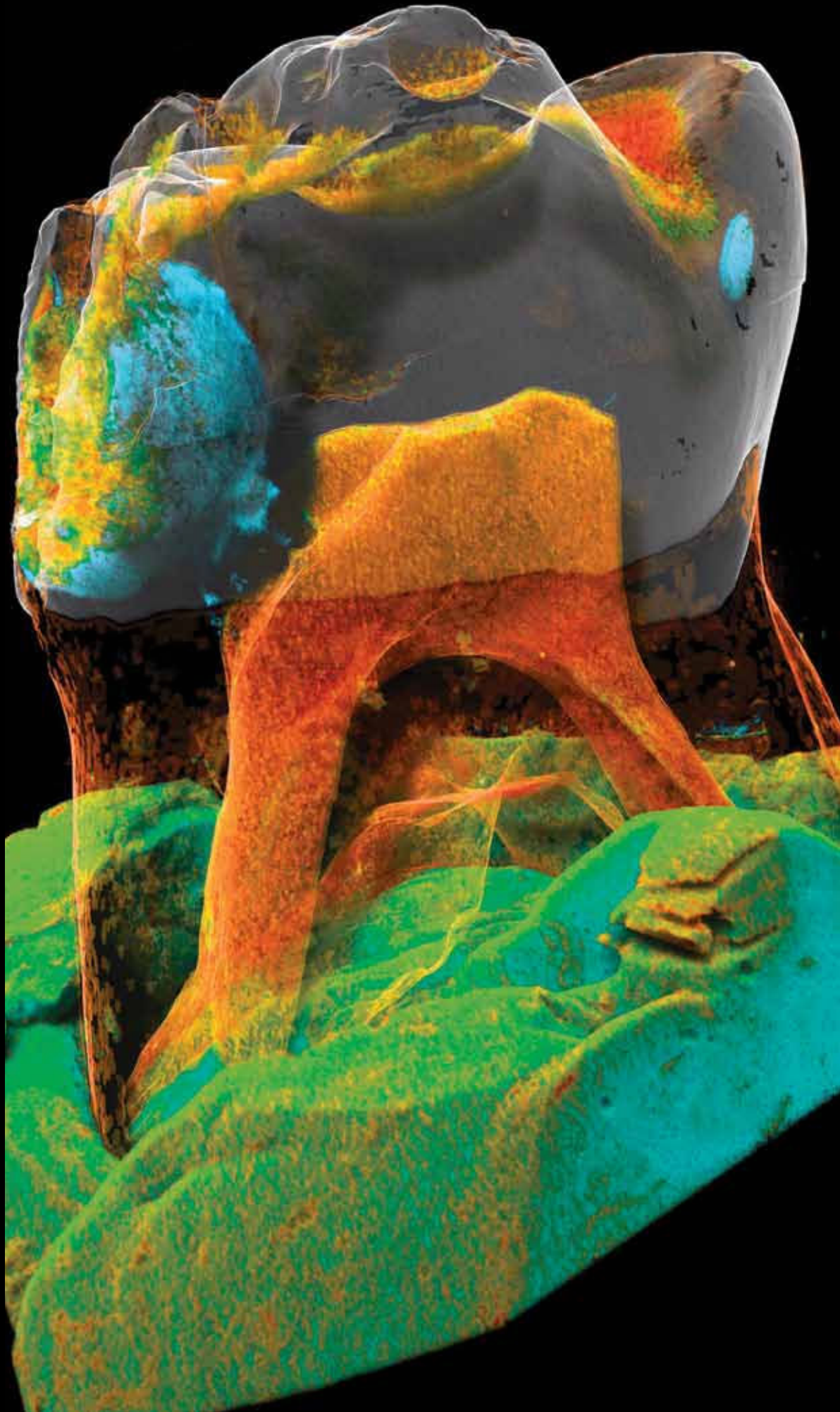
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# Research Work of Young Investigators and Their Mentors

RICHARD T. KAO, DDS, PHD

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## GUEST EDITOR

**Richard T. Kao, DDS, PhD,** is an adjunct associate professor, Department of Periodontics, Arthur A. Dugoni School of Dentistry in San Francisco, and an associate clinical professor, Division of Periodontology, University of California, San Francisco. *Conflict of Interest*  
*Disclosure: None reported.*

Any profession progresses and evolves only through research. It is only through this resulting new information that any field advances. For dentistry, this involves basic scientific research, translation of basic scientific findings into clinical protocols, and evaluation of how these new developments can improve patient care. Given this tenet, the ability of dentistry to continue to progress depends upon the development of new and young investigators. Supporting the recognition of these investigators, this issue and the next of the *Journal of the California Dental Association* will feature research works of young investigators and their respective mentors.

In this issue, we feature the following basic research efforts:

■ From the research laboratory of Daniel M. Ramos, DDS, University of California, San Francisco, predoctoral student Casey Lee and dental students Amanda Siu, BS, and Joy Chang, BS, report on the role of integrin in promoting tumor invasion. It is through this type of research that we better understand the mechanism by which head and neck melanoma invasion occurs. Through this understanding, we can develop therapeutic approaches to prevent tumor invasion. Dongmin Dang, MD, is also an author of this work.

■ William Cheng, DDS, MS, a recent graduate of the University of California, Los Angeles School of Dentistry, working under the supervision of Ichiro Nishimura, DDS, DMSc, DMD, studies the mechanism

to avoid scarring during oral wound healing. A small cytoskeleton molecule, FGFR1OP2/wit3.o, has been identified to speed wound healing. In this pilot project, the investigators develop a versatile and sensitive screening assay to study molecular compounds that may alter the expression of FGFR1OP2/wit3.o. This basic research may have therapeutic potential for accelerating wound healing with minimal or no scarring.

■ Fan Yang, BEn, a UCSF student enrolled in the DDS/PhD program, with her mentors, Randall Kramer, PhD, and Kit Lam, MD, PhD, investigate ligands that may bind oral squamous cell carcinoma. Identification of oral cancer specific targeting ligands has the potential to be used for imaging, early diagnosis, and therapies. Additional authors are Ruiwu Liu, PhD; WenWu Xiao, PhD; and Richard Jordan, DDS, PhD.



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# $\alpha\text{v}\beta 3$ Suppresses the RhoA-LIMK1 Pathway in K1735 Melanoma

CASEY LEE; AMANDA SIU, BS; JOY CHANG BS; DONGMIN DANG, MD;  
AND DANIEL M. RAMOS, DDS, PHD

**ABSTRACT** Mucocutaneous melanoma has a five-year survival rate of less than 10 percent. The  $\alpha\text{v}\beta 3$  integrin promotes invasion, which requires actin reorganization by cofilin. The authors previously showed that cofilin and  $\alpha\text{v}\beta 3$  promote invasion. K1735 melanoma has several clones, each with different levels of  $\alpha\text{v}\beta 3$ . The authors found that expression of  $\alpha\text{v}\beta 3$  suppresses activation of RhoA thus inhibiting LIMK1 phosphorylation of cofilin. This indicates that  $\alpha\text{v}\beta 3$  integrin suppresses the RhoA/ROCK/LIMK1 pathway.

## AUTHORS

**Casey Lee** is a predoctoral student at the University of California, Davis.  
*Conflict of Interest*  
*Disclosure: None reported.*

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*Conflict of Interest*  
*Disclosure: None reported.*

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*Conflict of Interest*  
*Disclosure: None reported.*

**Dongmin Dang** was a research specialist in the Department of Orofacial Sciences at the University of California, San Francisco.  
*Conflict of Interest*  
*Disclosure: None reported.*

**Daniel M. Ramos, DDS, PhD**, is with the Department of Orofacial Sciences at the University of California, San Francisco.  
*Conflict of Interest*  
*Disclosure: None reported.*

## ACKNOWLEDGMENTS

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**M**elanoma is a highly metastatic tumor caused by malignant transformation of normal melanocytes. Oral melanoma of the mucous membrane is rare and accounts for 6 percent of all head and neck cancers. Although rare, it is the most serious of all head and neck neoplasms and has a five-year survival rate of less than 10 percent.<sup>1</sup> The poor prognosis for oral melanoma is a result of its inherent aggressive nature and proximity to head and neck lymphatics and vasculature, which facilitates tumor invasion. Metastasis occurs through a series of sequential steps, which include adherence, degradation, and motility upon and through the extracellular matrix (ECM).<sup>2</sup>

The integrin family of cell adhesion receptors modulates tumor cell interactions with the ECM. Integrins constitute a superfamily of  $\alpha\beta$  heterodimers. The combination of a specific  $\alpha$  subunit with an individual  $\beta$

subunit determines ligand binding.<sup>3</sup> In the presence of  $\beta 3$  integrin, a physical signaling complex is formed between FAK and Src, which is a central hub for several signaling pathways, including MMP induction as well as motility.<sup>4</sup> Upon ligand binding, integrins can activate GTPases of the Rho family (i.e., RhoA, Rac1, and Cdc42), which act as molecular switches promoting a variety of biological responses that include cell motility, cell cycle progression, gene transcription, and cell transformation. RhoA has been directly linked to integrin-mediated signaling.<sup>5</sup> ROCK is the direct effector of RhoA and is activated by RhoA that then activates LIMK1. Once activated, LIM-kinase phosphorylates cofilin, thereby inactivating its F-actin severing ability. LIM kinase has been found to participate in a signaling pathway that connects the Rho family GTPases to the cytoskeleton.

Cofilin is a small (21 kDa) protein

that binds to both G- and F-actin and is responsible for the enhanced turnover of actin filaments.<sup>6</sup> Activation of cofilin regulates both the depolymerization and polymerization of F-actin and is an essential component of cell motility.<sup>7</sup> Cofilin is inactivated by the reversible phosphorylation at Ser3 by LIMK-1 and reactivated by dephosphorylation by slingshot homolog 1 (SSH1). Cofilin is the principal actin filament modulating protein and has a key role in rearrangement and adaptation of the actin cytoskeleton by responding to site-specific cell demands (e.g., integrin ligand binding). Furthermore, cofilin activation is essential for continued extension of the leading edge of the cell and subsequent movement.

Oral melanoma invasion and metastasis requires the dynamic interplay of molecules, such as  $\alpha v\beta 3$  integrin, RhoA, and cofilin. The authors previously used the K1735 murine system to establish head and neck melanoma lesions using a C3H/HeN syngeneic model.<sup>4</sup> The authors found that  $\alpha v\beta 3$  promotes the invasive pathway through activation of FAK and Src.<sup>4</sup> In this study, the K1735 murine melanoma model was used to correlate the expression of the  $\alpha v\beta 3$ /cofilin to melanoma invasion.

## Materials and Methods

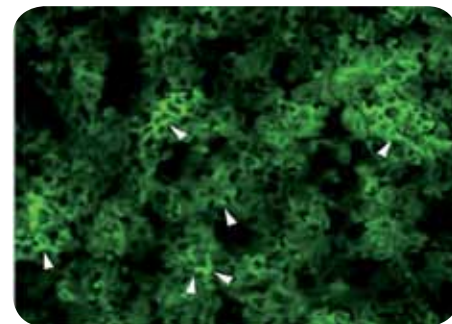
**Cell culture.** The highly metastatic K1735M2 and the poorly metastatic K1735C23 murine melanoma cell lines were obtained from Isaiah J. Fidler, DVM, PhD. (University of Texas M.D. Anderson Cancer Center, Houston). The blank retroviral vector pLXSN and the vector containing the  $\beta 3$  cDNA antisense construct were transfected into the K1735M2 cell lines in the authors' laboratory to generate the K1735M2SN and K1735M2T $\beta 3$  cell lines, respectively.<sup>7</sup> The K1735C23 cells were

retrovirally transduced with murine  $\beta 3$  to generate the K1735C23-m $\beta 3$  cells. The K1735M2C, K1735M2A3, and the K1735M2E3 cell lines were generated by transfection with the XAC1, XAC1A3, and the XAC1E3, respectively.<sup>8</sup> The XAC1, XAC1A3, and XAC1E3 represent the wild type, constitutively active, and the inactive phosphor-mimic cofilin constructs and were a gift from James R. Bamburg, PhD, at Colorado State University. All cells were cultured in Dulbecco's Modified Eagle's Medium with 10 percent fetal bovine serum, nonessential amino acids and 2 percent Vitamin Solution (Life Technologies, Grand Island, N.Y.). For convenience, the authors will drop the prefix K1735 and rely strictly on the clone name.

**Antibodies.** Rabbit monoclonal antibodies to cofilin were purchased from Cell Signaling Technology Inc., Danvers, Mass. Rabbit monoclonal antibodies to phosphorylated cofilin (p-cofilin) were also purchased from Cell Signaling. Murine monoclonal antibodies to Rho A were purchased from Santa Cruz Biotechnology Inc., Santa Cruz, Calif. Rabbit polyclonal antibodies to p-LIMK1 were also purchased from Santa Cruz Biotechnology. Rhodamine-phalloidin was purchased from Cytoskeleton Inc., Denver.

## Immunofluorescence Microscopy

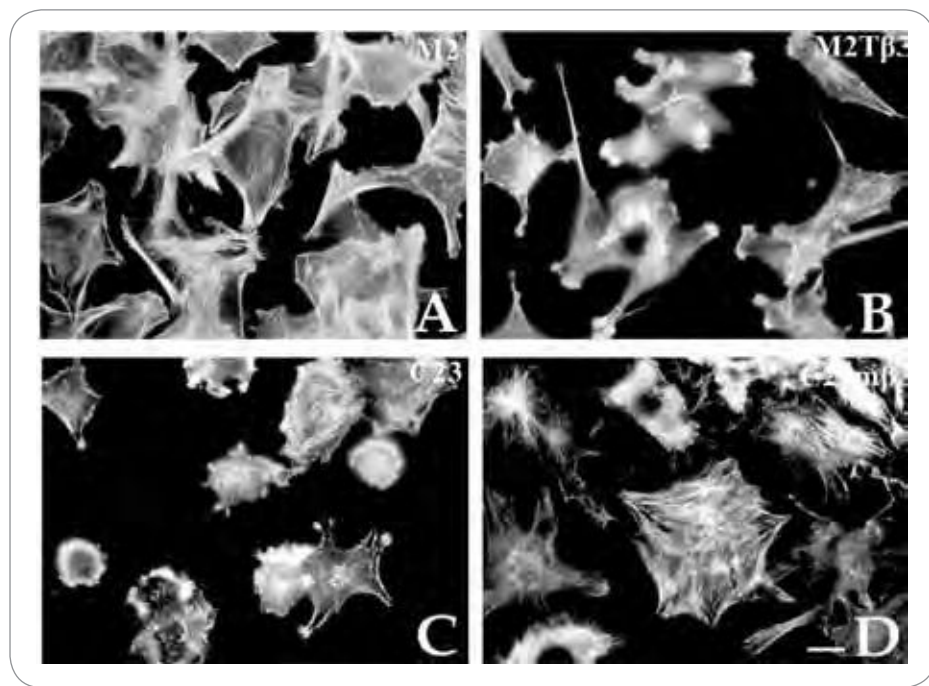
**Tissue section.** Multiple 5  $\mu$ m serial sections from selected formalin-fixed, paraffin-embedded blocks were cut onto aminopropyltriethoxysilane-coated slides. The tissues were dewaxed in xylene and rehydrated. Heat-induced antigen retrieval in citrate buffer (three minutes in a pressure cooker) was followed by blockade of endogenous peroxidase activity with hydrogen peroxide. The sections were incubated with 10 percent goat serum



**FIGURE 1.** Cofilin is expressed in mucocutaneous melanoma. Tissue sections of oral mucocutaneous melanoma were incubated in the presence of antibodies to active cofilin and then processed for immunofluorescence microscopy. Cofilin was extensively expressed in the tissue, verifying a role for cofilin in oral melanoma progression.

in phosphate-buffered saline to reduce nonspecific binding and background staining. The slides were incubated with monoclonal antibody to cofilin overnight and then washed with Tris-buffered saline containing 0.05 percent Tween. This was followed by incubation with secondary goat anti-mouse IgM conjugated with FITC at room temperature. Coverslips were applied with Cytoseal 60 Mounting Medium.

**Cell culture.** A total of  $2 \times 10^5$ /ml cells were plated onto vitronectin (VN) coated coverslips (5  $\mu$ g/mL), serum-free for 30 minutes, one hour, and two hours. Cells were fixed with 2 percent paraformaldehyde for five minutes and permeabilized with 0.1 percent Triton X-100. The cells were incubated in 5 percent goat serum and 1 percent biotinylated bovine serum albumin in phosphate-buffered saline (PBS) for 60 minutes at room temperature to reduce nonspecific binding and background staining. Cofilin primary antibody (1:200) and rhodamine-phalloidin (1:10000) were applied onto slides and incubated for 60 minutes at room temperature, followed by several washes with PBS. The cells were then incubated in secondary antibody fluorescein isothiocyanate (FITC) anti-rabbit (1:10000) for 30 minutes at room temperature, washed with PBS, and mounted with Vectashield Hardset Mounting Medium with DAPI



**FIGURE 2.** Cytoskeletal differentiation in positive and negative  $\alpha v \beta 3$  cells. The M2, M2T $\beta 3$ , C23 and C23m $\beta 3$  cells ( $2 \times 10^5$  cells/ml) were grown on vitronectin for 24 hours and then fixed, stained and processed for immunofluorescence microscopy with rhodamine-phalloidin antibodies.

(Vector Laboratories, Burlingame, Calif.). The cultures were then examined for expression of green fluorescence and Texas Red using immunofluorescence microscopy.

**Immunoprecipitation.** K1735 cells were removed from culture dishes under nondenaturing conditions in ice-cold lysis buffer (50 mM Tris-HCl [pH 8], 150 mM NaCl, 1 percent Nonidet P-40, 0.5 percent sodium deoxycholate, 0.1 percent sodium dodecyl sulfate). Samples were incubated in murine monoclonal antibodies to Rho A for one hour at 4 degrees Celsius. To recover immune complexes, species-specific anti-IgG-Sepharose was added and incubated for an additional one hour at 4 degrees Celsius. Unbound material was removed by extensive washing with TNC buffer (10 mM Tris-HCl, 0.1 percent NP-40, and 1 mM  $\text{CaCl}_2$ , pH 7.4). This was followed by two washes, first with 0.1 percent sodium dodecyl sulfate (SDS) in TNC buffer, and then with 1M NaCl in TNC buffer. Control

immunoprecipitations performed with irrelevant antibodies always recovered negligible radioactivity. The recovered immunoprecipitates were solubilized by heating at 100 degrees Celsius for three minutes and analyzed by SDS-polyacrylamide gel electrophoresis (PAGE), followed by autoradiography.

**Pull-down assay.** The authors used the Thermo Scientific Rho Pull-Down and Detection Kit to identify the endogenous GTP-binding Rho GTPase.

**Western blotting.** Cells were serum-starved for 24 hours and then plated onto VN (10  $\mu\text{g}/\text{ml}$ ) for two hours. Cells were lysed in Nonidet P-40 lysis buffer (150mM NaCl, 1mM EDTA, 20 mM Tris-HCl, pH 7.5, 50 mM NaF, 1 mM  $\text{Na}_3\text{VO}_4$ , 0.1 percent Nonidet P-40, 10 $\mu\text{g}/\text{ml}$  leupeptin, 0.05 percent aprotinin, 1 mM phenylmethylsulfonyl fluoride). Protein concentrations were determined by BCA Protein Assay Kit (Pierce, Rockford, Ill.). The proteins were separated using SDS-PAGE and transferred to PVDF membrane (EMD Millipore Corp.,

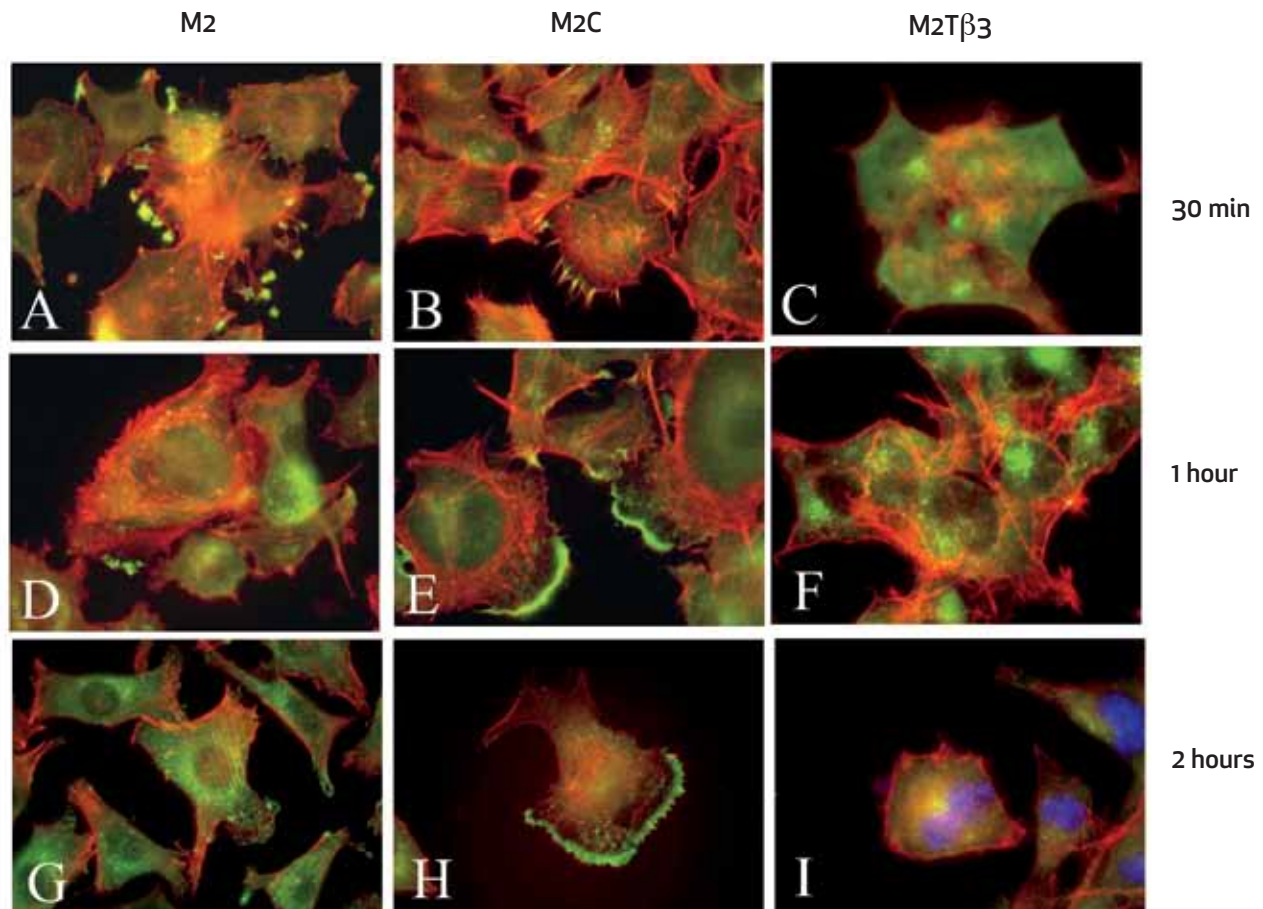
Billerica, Mass.) on semidry blotting apparatus (Bio Rad, Hercules, Calif.). The immunoblots were visualized using the Pierce ECL Western Blotting Substrate (Pierce) and UltraCruz Autoradiography Film (Santa Cruz Biotechnology Inc.). Blots were quantified and assigned relative value units (RVUs) using an image analysis program (NIH image).

## Results

**Expression of cofilin in human head and neck melanoma.** Human surgical specimens from an invasive melanoma (based on pathology report and reactivity with S-100, human melanoma antigen) were evaluated for expression of cofilin to establish its relevance in head and neck melanoma. The tissue section was reacted with antibodies to pan-cofilin followed by anti-rabbit FITC (**FIGURE 1**). Expression of cofilin was found distributed throughout most of the cells within the invasive nests (**FIGURE 1**). The localization was located at the perinuclear region and at the cell membrane (arrows).

Cytoskeletal differentiation in positive and negative  $\alpha v \beta 3$  K1735 cells. Previous studies from the authors' laboratory have shown that K1735 migratory potential is dependent upon expression of the  $\beta 3$  integrin. The following was done to evaluate how cytoskeleton is organized both in the presence or absence of  $\beta 3$  integrin. Four K1735 cell lines (M2, C23m $\beta 3$ , C23, and M2T $\beta 3$ ) were grown on VN for 12 hours. The cells were then processed by immunofluorescence microscopy with rhodamine-phalloidin to examine potential differences in their cytoskeletal organization. The M2T $\beta 3$  and the C23 cells sent out multiple membrane extensions and did not have a well-organized cytoskeleton (**FIGURE 2**). In contrast, the M2 and the C23m $\beta 3$  cells





**FIGURE 3.** Localization of cofilin in positive and negative  $\alpha v\beta 3$  cells. The M2 (A,DE), M2C(B,E,H) and M2T $\beta 3$  (C,F,I) cells ( $2 \times 10^5$  cells/ml) were grown on glass coverslips with VN for 30, 60 and 120 minutes. The expression of cofilin was evaluated by immunofluorescent microscopy using cofilin antibodies.

sent out a dominant lamellipodia and had a well-organized cytoskeleton with well-defined stress fibers (**FIGURE 2**). The presence of  $\beta 3$  influenced polarization and stress fiber organization.

*Differential localization of cofilin in K1735 melanoma cell lines.* The authors performed a time course to evaluate the temporal-spatial distribution for cofilin. They examined wild type M2, M2T $\beta 3$ , and the M2C cells for localization of cofilin. The cells were plated on VN for 30, 60, and 120 minutes (in triplicate). At each time point, the cells were fixed and stained with antibodies to cofilin and phalloidin conjugated

to rhodamine. The cells were then visualized using immunofluorescence microscopy (**FIGURE 3**). At 30 minutes, cofilin was distributed at the periphery of the M2 cells and by 60 and 120 minutes, the localization of cofilin dispersed from the cell membrane. In the M2C cells, at 30 minutes, cofilin distribution appeared at the cell membrane in microspikes, and at 60 minutes, cofilin was localized to a broad band at the front of the cell (**FIGURE 3**). This band started to disassemble by two hours. M2T $\beta 3$  did not express cofilin at any of the three time points (**FIGURE 3**). This suggests that the  $\alpha v\beta 3$  integrin

assists in localizing cofilin to the leading edge of the cell and promotes actin remodeling at the forefront of the cells during migration.

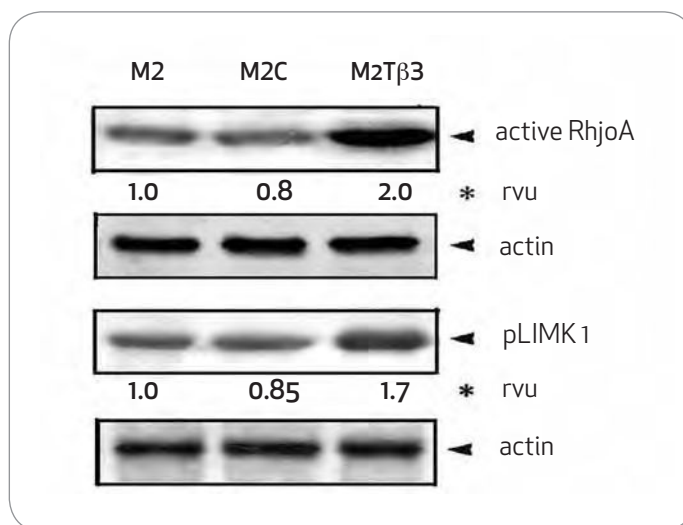
*Expression of  $\beta 3$  suppresses activation of RhoA and the phosphorylation of LIMK1.* RhoA is a master regulator of actin assembly and this affects shape, position of integrins and cadherins, both of which make contact with the actin cytoskeleton. The authors used a pull-down assay to differentiate between active GTP-bound RhoA from the inactive GDP-bound form. M2, M2C, and M2T $\beta 3$  cells were grown on  $10 \mu\text{g/ml}$  of VN under serum-free conditions



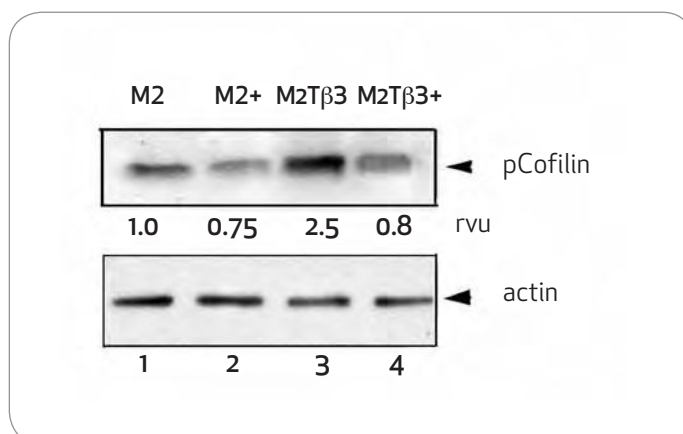
for 24 hours. The cells were then lysed and analyzed to determine the expression of active Rho GTPase. The membranes were scanned by dosimetry and assigned RVUs. The  $\beta_3$ -negative, M2T $\beta_3$  cells expressed twice the level of active RhoA compared to the M2 and M2C cell lines (**FIGURE 4**). The authors also found the same distribution pattern for the phosphorylation of LIMK1. Phosphorylation of LIMK1 in the M2T $\beta_3$  cell line (**FIGURE 4**) was twice the amount found in the M2 and M2C cells (**FIGURE 4**). Activation of both RhoA and LIMK1 activity are increased in the  $\beta_3$ -negative M2T $\beta_3$  cell line. This suggests that  $\alpha v \beta_3$  suppresses RhoA pathway.

*The ROCK inhibitor Y27632 decreases the phosphorylation of cofilin.* The M2 and M2T $\beta_3$  cells were grown serum-free on VN for 60 minutes in the presence (+) and absence of the ROCK inhibitor Y27632 (**FIGURE 5**). Using rabbit monoclonal antibodies to p-cofilin, the expression of p-cofilin was evaluated by Western blotting. RVUs were assigned by dosimetry. In the absence of ROCK inhibitor, the M2T $\beta_3$  cells express 2½ times the amount of p-cofilin when compared with the M2 cells. In the presence of the Y27632, expression of p-cofilin was essentially the same. These results suggest the expression of  $\beta_3$  integrin suppresses cofilin phosphorylation as represented by p-cofilin, and this is mediated through ROCK activity.

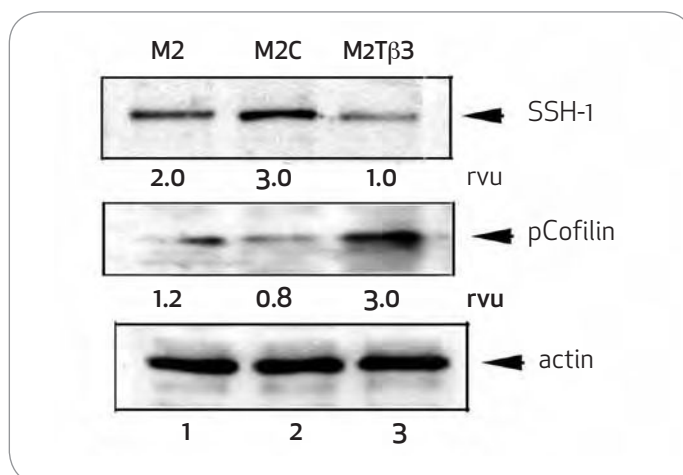
*Integrin  $\alpha v \beta_3$  regulates the activity of SSH1 and phosphorylation of cofilin.* Three K1735 melanoma cell lines — M2SN, M2C, M2T $\beta_3$  — were plated on VN for two hours and lysed as described above. Whole cell lysates were examined by Western blotting for the expression of phosphatase SSH1, which dephosphorylates cofilin. SSH1 was



**FIGURE 4.** Differential expression of activated Rho and phosphorylated LIMK1. Lysate from M2, M2C and M2T $\beta_3$  cells were evaluated for the expression of active Rho and phosphorylated LIMK1. Active Rho expression was analyzed using a Rho pull-down assay. Phosphorylated LIMK expression was analyzed using western blotting with anti-phosphor serine/threonine antibodies. The results are presented using relative value units. Actin was used as a loading control. Relative value units were assigned by dosimetry.



**FIGURE 5.** Expression of P-cofilin in the presence and absence of the ROCK inhibitor Y27632. The M2 (lanes 1 and 2) and the M2T $\beta_3$  cells (lanes 3 and 4) were plated on VN for 60 minutes in the presence (+) (lanes 2 and 4) or absence (lanes 1 and 3) of the ROCK inhibitor Y27632. Cell lysates were probed with antibodies to p-cofilin. Using western blotting, p-cofilin expression was analyzed. Actin was used as a loading control. Relative value units were assigned by dosimetry.



**FIGURE 6.** Differential expression of phosphatase SSH1. M2SN, M2C and M2T $\beta_3$  cells were plated onto 10 $\mu$ g/mL vitronectin for two hours, lysed and analyzed by western blot for expression of SSH1. Membranes were stripped and reprobed with antibodies to p-cofilin to evaluate phosphorylation of cofilin. Actin was used as a loading control. Relative value units were assigned by dosimetry.

expressed three times greater in the M2C cells when compared to the  $\beta_3$ -negative M2T $\beta_3$  cells (FIGURE 6). In contrast, the expression of p-cofilin was threefold greater in the M2T $\beta_3$  cells when compared to the M2C cells (FIGURE 6). The expression of  $\beta_3$  promotes the expression of SSH1, which results in increased cofilin activity.

## Discussion

Primary mucosal melanoma of the head and neck is rare and occurs less frequently than the cutaneous form. The prognosis of this cancer is very poor, with a five-year survival rate of less than 10 percent. Delayed detection is one of the factors contributing to its poor prognosis. Its close proximity to the local microvasculature facilitates the ease in hematogenous spread. The process of cell invasion requires repeated cell polarization and membrane extension. The repeated nature of this process requires continued polymerization of actin at the leading edge, coupled to depolymerization at the trailing edge.

In this study, the authors used immunofluorescence microscopy of oral mucocutaneous melanoma to verify the high expression of active cofilin throughout the tumor sections. Active cofilin expression in the tumor cells was found both perinuclear and at the cell membrane. Perinuclear staining suggests that it is actively being transcribed at the tumor site. To further study this tumor characteristic, they used the K1735 cell model, whose invasiveness is associated with expression of  $\alpha v\beta_3$ .<sup>4</sup> The authors previously established that  $\beta_3$  expressing K1735 cells were invasive, and the  $\beta_3$  negative cells were not invasive. In this study, it was demonstrated that cofilin activity is modulated by the expression

of  $\alpha v\beta_3$ . It was found that the expression of  $\beta_3$  promoted a well-organized, polarized actin cytoskeleton, whereas  $\beta_3$  negative cells do not. Integrins play a role in transmitting signals that initiate rearrangements in the actin cytoskeleton in response to ECM protein binding.<sup>9</sup> Numerous studies have shown that these cytoskeletal changes are mediated by Rho family proteins.<sup>10</sup> However, the signaling pathways by which integrins regulate these GTPases are not well-characterized. Members of the Src family tyrosine kinases (SFKs) transmit several integrin-stimulated signals.<sup>11</sup> SFKs are transiently activated during integrin-mediated adhesion and have an important role in cell spreading and migration.<sup>12</sup> The authors' previous work in the K1735 system showed that cell motility is blocked by the suppression of Src. In addition, suppression of Src increases RhoA activation, promoting stress fiber formation and focal contact formation, both of which are important for cell migration.<sup>13</sup>

However, current results indicate that the activation of RhoA, is suppressed in the presence of the  $\beta_3$  integrin, resulting in a well-organized cytoskeleton. When RhoA is active, LIMK1 is activated, resulting in cofilin phosphorylation. Altering the expression of LIMK has been shown to have a major impact on the motility and metastasis of tumor cells. The authors suggest that  $\beta_3$ -induced metastasis is due to suppression of RhoA, Rock-LIMK1 thereby retaining cofilin in an active state.

In the authors' system, polarization is dependent upon the suppression of RhoA-LIMK via the activation of cofilin by  $\alpha v\beta_3$ . When RhoA is suppressed, the melanoma cells become highly polarized and organized, and display well-organized

stress fibers. The localized suppression of RhoA activity by  $\beta_3$  integrin engagements is a critical step in allowing cells to spread and migrate. RhoA-mediated contractile forces impede protrusion, or collapse existing protrusive structures, at the leading edge of migrating cells.<sup>14</sup> Others have shown that interfering with RhoA signaling promotes membrane ruffling.<sup>14</sup> Inhibition of RhoA by integrins via c-Src and p190RhoGAP may also contribute to focal adhesion disassembly at the rear of motile cells. Maintenance of cofilin activation is also a result of the phosphatase SSH1, which acts by dephosphorylation of cofilin Ser3. This activation, which is under the influence of the integrin  $\beta_3$ , helps promote invasion and metastasis. The expression of SSH1 is elevated when the cells express  $\beta_3$ .

The authors' findings present a mechanism by which head and neck melanoma modulates cofilin activation and thus invasion. As previously discussed, invasion of melanoma cells is associated with the expression of the  $\alpha v\beta_3$  integrin. The  $\beta_3$  integrin promotes activation of FAK/Src, which results in the inactivation of RhoA.<sup>15</sup> In this study, the authors confirm these results and show that the expression of the  $\beta_3$  integrin results in activation of cofilin by suppressing the RhoA-ROCK-LIMK1 pathway. This pathway is further discouraged by the high level activation of SSH1 in response to  $\beta_3$  integrin expression. In addition, only one pair of genes (LIMK1 and cofilin) has been tested for its effects on the activity of the cofilin pathway, and the results show that cofilin pathway output is predictive for metastatic potential.<sup>16</sup> Perhaps therapeutic targets aimed at altering the output of the cofilin pathway via cofilin Ser3 may help manage this metastatic disease. ■■■■

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# High Throughput Screening of Biologically Functional Small Molecules for Modulating the Expression of FGFR1OP2/wit3.0 in Fibroblasts

WILLIAM CHENG, DDS, MS, AND ICHIRO NISHIMURA, DDS, DMSC, DMD

**ABSTRACT** Oral wounds heal rapidly without scarring through yet unknown molecular mechanisms. A small cytoskeleton molecule identified in oral wound fibroblasts, FGFR1OP2/wit3.0, has been shown to accelerate wound closure in vitro and in vivo. The objective of this study was to elucidate the transcriptional mechanism of FGFR1OP2/wit3.0 in fibroblasts using a high throughput drug-screening platform. This pilot study identified chemical compounds that could effectively modulate the FGFR1OP2/wit3.0 expression for future studies on effective wound management.

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*Conflict of Interest Disclosure: None reported.*

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A skin wound heals in three main stages: inflammation, tissue formation and tissue remodeling. Since the time of ancient civilizations, methods to improve the wound healing process have been in constant evolution. Although the first mention of wound healing exists in 2000 B.C. on cuneiform tablets found in the Sumerian civilization, it was not until the Egyptians in 1550 B.C. that attention was paid to dressing wounds with linen and honey, which acted as an antibacterial. Fast forwarding to the 20th century,

surgeons started to utilize sterilized sutures to help approximate wounds to facilitate wound closure. Although there have been modern advancements in materials for achieving the closure of wounds in the human body, suturing and mechanical approximation still remain the gold standard.<sup>1</sup>

Interestingly, compared to wounds in the skin, oral wounds close rapidly and heal with minimal scarring.<sup>2</sup> Fibroblasts found in oral wounds have expressed a lower level of  $\alpha$ -smooth muscle actin, which is considered an integral part of the wound contraction mechanism in skin.<sup>3,4</sup> Isolated cDNA libraries from oral wounds revealed that wound inducible transcript-3.0 (wit3.0), also known as fibroblast growth factor receptor 1 oncogene partner 2 (FGFR1OP2), was highly expressed.<sup>5</sup> It has been shown that upregulation of FGFR1OP2/wit3.0 increases fibroblast cell mobility, in vitro collagen gel contraction, and closure in mouse skin wounds in vivo.<sup>3,6</sup> Thus, it has been hypothesized that exogenous factors can modulate the expression of FGFR1OP2/wit3.0 in fibroblasts and that those factors can be used to differentiate oral and skin wound closure at a molecular level.

The authors characterized the expression of FGFR1OP2/wit3.0 in different fibroblasts. This was followed by the establishment of a branched DNA (bDNA) assay using small-interfering RNA (siRNA) knockdown of FGFR1OP2/wit3.0 in mouse clonal fibroblasts as the system optimization platform. Finally, as a pilot study, they applied their developed protocol to screen 320 biologically active small chemical molecules and study their effects on FGFR1OP2/wit3.0 expression in fibroblasts.

## Methods

### *Cell Cultures of Mouse Fibroblasts: CCL-1 and CCL-226*

Clonal adult mouse skin fibroblasts (CCL-1) were cultured at 37 degrees Celsius and 5 percent CO<sub>2</sub> in t75 flasks in complete fibroblast culture medium: Dulbecco's Modified Eagle's Medium, penicillin streptomycin 1 percent solution, and 10 percent fetal bovine serum (Invitrogen, Grand Island, N.Y.). After incubation for three to four days, the cells were passaged. Separately, clonal mouse embryonic-derived fibroblasts (CCL-226) were cultured in the same manner, except they required Basal Eagle Medium, replacing Dulbecco's Modified Eagle Medium. Cells from passage 4–8 were used in this study.

### *Fibroblastic Cells Derived From Mouse Embryonic Stem Cells Carrying FGFR1OP2/wit3.0 (+/-) Mutation*

Six mouse embryonic stem (ES) cell lines were identified in the database of the International Gene Trap Consortium (genetrap.org) containing a gene trap mutagenesis in the FGFR1OP2/wit3.0 allele. The C57Bl/6J (B6) ES cell line with IST10830D12 mutation (Texas A&M Institute for Genomic Medicine, Houston) and wild-type B6 mouse ES cells were expanded on feeder cells following a standard protocol. The trypsinized ES cells were cultured in nonadherent plates (BD Biosciences, Bedford, Mass.) to form embryoid bodies in differentiation medium consisting of knockout Dulbecco's Modified Eagle's Medium (Invitrogen, Carlsbad, Calif.), 20 percent heat inactivated fetal bovine serum, 1 mmol/L L-glutamine, 0.1 mmol/L B-mercaptoethanol, 1 percent nonessential amino acids, and 1 percent penicillin streptomycin (Invitrogen). The aggregates were then transferred into gelatin-coated plates, and the outgrowing

cells were serially passaged every five to seven days. Cells passaged in passage 1 appeared to have a robust fibroblast and epithelial layered morphology. Cell genotype was verified against C57/BL mouse tail DNA using polymerase chain reaction (PCR).

### *Immunocytology and Confocal Laser Scanning Microscopy*

Fibroblasts were seeded at a low concentration on glass microscopy chambered slides (Labtek Fischer, Rochester, N.Y.) with 2 ml culture medium. After two days, cells were fixed in 4 percent formaldehyde and treated with Triton X-100 (Sigma, St. Louis, Mo.). Cells were then incubated for one hour with the primary antibody for FGFR1OP2/wit3.0 (Abnova, Walnut, Calif.) and 30 minutes with Alexa Fluor 488 secondary antibody (Invitrogen). Cells were subsequently incubated with the Phalloidin Alexa Flour 568 (Invitrogen) for 20 minutes for actin. Cells were mounted with DAPI containing mounting media (Vectorlabs, Burlingame, Calif.). Using a Confocal Laser Scanning Microscope (Leica Microsystems, Richmond, Ill.), multifuorescent images were scanned using 40x and 60x oil immersion at a resolution of 512 x 512 pixels to 2,048 x 2,048 pixels with an average of six scans per section and 10 sections per scan.

### *Small-Interfering RNA Knockdown of FGFR1OP2/wit3.0 and bDNA Assay*

siRNA targeting FGFR1OP2/wit3.0 (Invitrogen) was transfected with Lipofectamine 2000 (Invitrogen) in OPTI-MEM (Invitrogen), and CCL-1 or CCL-226 cells were incubated for six hours at 37 degrees Celsius. The media were then exchanged with fresh media, and cells were further incubated for 48 hours. The siRNA knockdown results were examined using TaqMan-based real-time (RT) PCR. Separately, the bDNA assay (Quantigene

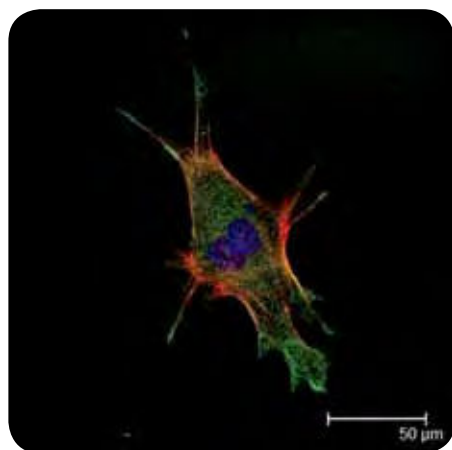


FIGURE 1A.

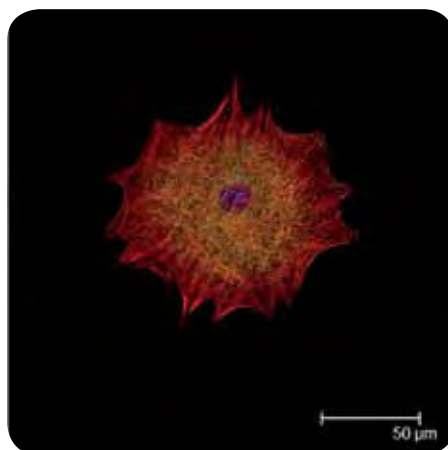


FIGURE 1B.

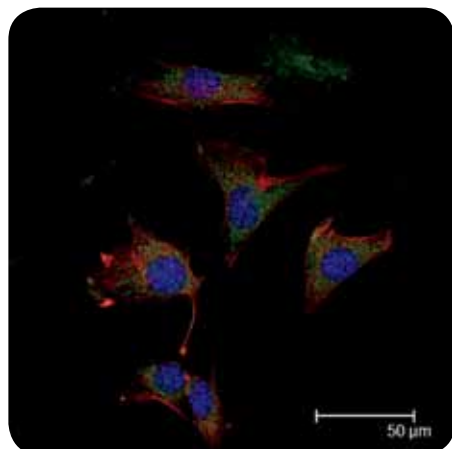


FIGURE 1C.

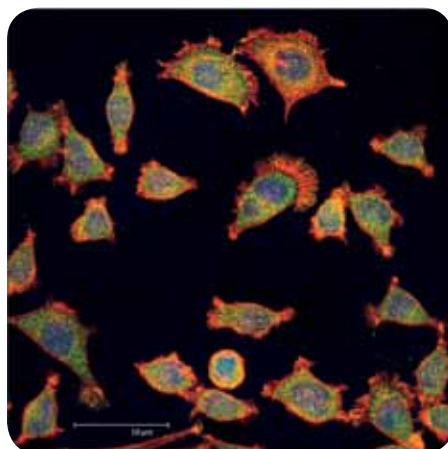


FIGURE 1D.

**FIGURE 1.** Immunocytohistology of AES-derived B6 wt (+/+) (**1A**) and wit3.0 heterozygous (+/-) (**1B**) cells using confocal microscopy. Overlay consists of three different layers. Red staining represents F-actin. Green staining represents wit3.0. Blue staining is DAPI stain. The mutant (+/-) cells exhibit less expression of wit3.0, lack wit3.0 expression at the periphery, and present with disorganized actin fibers. Immunocytohistology of CCL-226 C3H mouse skin fibroblast (**1C**) and CCL-1 C3H mouse embryonic-derived fibroblast cells (**1D**) using confocal microscopy. In all cell types, wit3.0 does not colocalize with actin, and is present as a granular cytoplasmic peptide.

2.0 oligonucleotide assay, Affymetrix, Santa Clara, Calif.) was used to examine the expression of FGFR1OP2/wit3.0. Cells were treated with lysis buffer and the custom-made bDNA probes for FGFR1OP2/wit3.0 (Affymetrix). A quantity of 100 ul of cell lysate was transferred from each well to the bDNA capture plate (Affymetrix) and left to hybridize overnight at 53 degrees Celsius. A total of 100 ul of amplifier, label probe, and substrate were added in separate wash and incubation steps of one hour each at 46 degrees Celsius. The resultant

chemiluminescence was quantified with a luminometer. The Z-factor, a measure of statistical size, was calculated for each group using the formula:  $Z = 1 - 3 * (SD \text{ of sample} + SD \text{ of control}) / ABS(\text{mean of sample} - \text{mean of control})$ .

#### High Throughput Screening

CCL-1 was grown in the method mentioned above to 80 percent confluence and suspended. Media and chemicals from the screening library were added to four plates in duplicate

using a custom-built automated high throughput screening device. Using a Titan-automated multipipetter (Titertek-Berthold, Huntsville, Ala.), 25ul of CCL-1 cells were added giving a final concentration of  $7.5 \times 10^4$  in eight 96-well plates (BD Biosciences). For the first set of four plates, bDNA assay was performed as above. To the second set of four plates, 25 ul of ATPlite cell viability reagent (PerkinElmer, Santa Clara, Calif.) was added and read within 30 minutes.

## Results

### Characterization of FGFR1OP2/wit3.0 in Fibroblasts

Immunocytochemistry was completed on four groups of fibroblasts: B6 ES cell-derived wild-type and FGFR1OP2/wit3.0 (+/-) knockout fibroblasts, as well as CCL-1 skin fibroblasts and CCL-226 embryonic fibroblasts. Cells were stained for F-actin (red), FGFR1OP2/wit3.0 (green) and Nucleus (blue) (**FIGURE 1**). In ES cell-derived fibroblasts, FGFR1OP2/wit3.0 protein was found to be expressed as a granular cytoplasmic protein, which appeared to colocalize with actin fiber near the cell surface (**FIGURE 1A**). On the contrary, B6 ES-derived FGFR1OP2/wit3.0 (+/-) mutant fibroblasts exhibited more pronounced F-actin fibers that appeared disorganized (**FIGURE 1B**). The loss of FGFR1OP2/wit3.0 seemed to result in the loss of fibroblastic morphology. CCL-1 and CCL-226 cells showed the cytoplasmic FGFR1OP2/wit3.0 molecules with minimal association with F-actin fibers (**FIGURES 1C and 1D**, respectively).

### Assessment of FGFR1OP2/wit3.0 Expression and Z-factor

The authors utilized siRNA targeting FGFR1OP2/wit3.0 as a mock screening on cell lines. The siRNA

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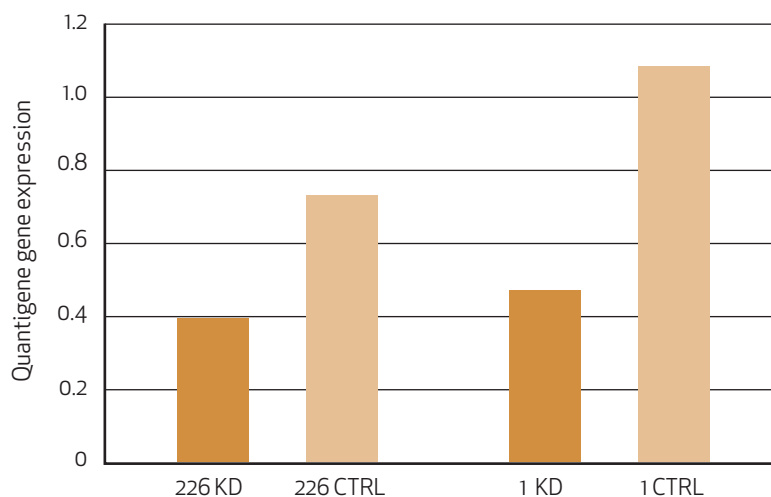


FIGURE 2A.

Cell type	Z-Factor
CCL-1	.84
CCL-226	.89

FIGURE 2B.

**FIGURE 2. (2A)** Wit3.0 siRNA knockdown performed on the Affymetrix Quantigene (bDNA) direct mRNA detection platform. 226 KD (CCL-226 knockdown) and 1 KD (CCL-1 knockdown) originated from cells treated with siRNA targeting wit3.0. 226 CTRL (CCL-226 Control) and 1 CTRL (CCL-1 Control) are control groups treated with negative siRNA. Genetic expression of CCL226 CTRL was .76 and KD .42, which equates to a 55 percent knockdown. Genetic expression of CCL1 CTRL was 1.1 and KD .49, which equates to a 44 percent knockdown. **(2B)** Table showing Z-factor, a statistical measurement of effect size used in high throughput screening to judge the power of pilot screenings. A Z-factor above .5 denotes an excellent high throughput assay response. CCL-1 at 4x and CCL-226 at 1x dilution produce Z-factors of .84 and .89, respectively.

knockdown was performed on CCL-1 and CCL-226 cell types, and FGFR1OP2/wit3.0 expression was measured using the conventional TaqMan-based RT-PCR (data not shown) and bDNA assay system (**FIGURE 2A**). Both methods indicated that siRNA treatment induced approximately 50 percent knockdown in CCL-1 and CCL-226 cells. However, the measurement variation in RT-PCR was large, producing a small z-score. bDNA assay generated highly consistent data, resulting in the desired Z-factor of 0.84 with CCL-1 and 0.89 with CCL-226 (**FIGURE 2B**). This established that utilizing either fibroblast cell line, a large enough change in expression

could be measured in FGFR1OP2/wit3.0, with bDNA assay as the measurement platform.

### High Throughput Assay Optimization

Most chemicals stored in the biochemical screening library are dissolved in 3 percent DMSO, which can be cytotoxic to cells. The authors incubated both CCL-1 and CCL-226 in 3 percent DMSO media for 48 hours, and found that only CCL-1 survived to be normal in morphology and proliferation (**FIGURE 3A**). The flow of the high throughput experiment was determined to be: 1) chemicals and media delivery; 2) seeding of  $7.5 \times 10^5$  cells in each well;

3) 48-hour incubation; and 4) lysis and mRNA quantification by bDNA assay (**FIGURE 3B**). The experiment was determined to be done in duplicate so that viability could be measured using ATPlite. The high throughput facility programmed the delivery of 96-well plates into their custom-automated assay system, which is capable of automating the entire protocol for the screening of up to 100,000 chemicals (**FIGURE 3C**).

### High Throughput Chemical Screening for Modulators of FGFR1OP2/wit3.0

Utilizing their developed procedure, the authors screened 320 chemicals for their potential effects on the expression of FGFR1OP2/wit3.0 as a pilot study. Color-coordinated hit maps were generated from taking the ratio of bDNA assay and ATPlite (**FIGURE 4A**). The ratios served as the authors' formalized gene expression, and therefore they used it as a first pass of selection of potential FGFR1OP2/wit3.0 regulators. Looking at scatterplots of Quantigene (bDNA) vs. ATPlite, several chemicals had downregulating and upregulating effects on FGFR1OP2/wit3.0 while staying within the normal viability range (**FIGURE 4B**). This method served as a second pass of selection. In the authors' screening, several promising chemicals were identified as potential regulators of FGFR1OP2/wit3.0 expression.

### Discussion

It has been shown that FGFR1OP2/wit3.0 is highly expressed in fibroblasts during oral wound closure.<sup>3</sup> This study investigated the lack of FGFR1OP2/wit3.0 using Gene Trap Mutagenesis ES clone. The ES-derived FGFR1OP2/wit3.0 (+/-) mutant cells exhibited

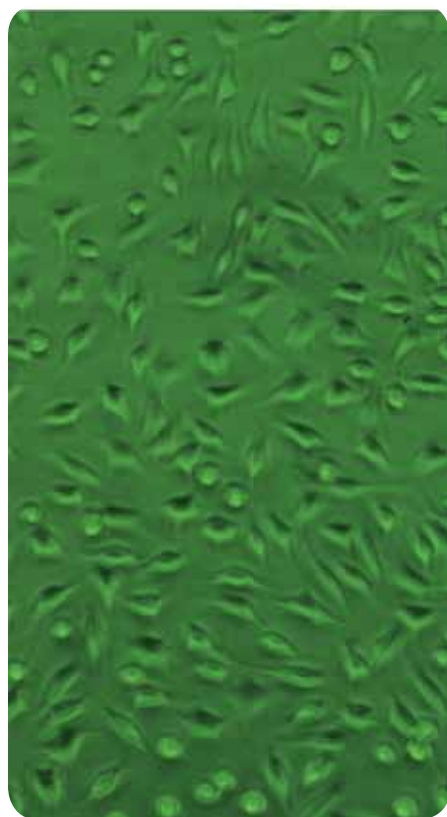


FIGURE 3A.

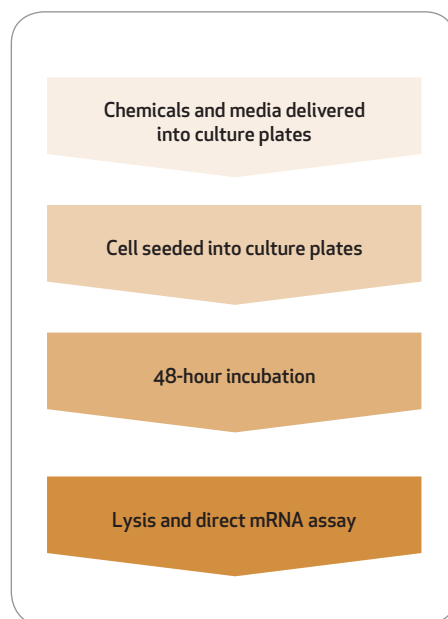


FIGURE 3B.



FIGURE 3C.

**FIGURE 3.** (3A) Light microscopy photograph of CCL-1 cells 48 hours after automatic seeding into a 96-well plate with media containing dimethylsulfoxide. Cell morphology, and growth patterns are normal. (3B) Flowchart showing the sequence of events in the developed high throughput assay. More than 30,000 chemicals can be automatically delivered with media into culture plates. Cells are then seeded, and a 48-hour incubation takes place. In the last step, lysis and direct measurement of mRNA levels take place over 24 hours. (3C) Photograph of one section of the high throughput automated screening device. This device can automate chemical deliverance, incubation and the direct mRNA assay.

unusual cell morphology, as compared to other fibroblastic cells (FIGURE 1). The cell motility plays an important role in the mechanism of tissue contraction at the wound site and requires cells to be polarized. The loss of FGFR1OP2/wit3.o appeared to lose the cell polarity.

To find molecular regulators of unknown genes, a research team may have to run thousands of experiments. The gold standard for measuring mRNA expression level in cells is through RT-PCR. This process can prove to be long and tedious due to the necessity of isolating genetic material, reverse transcribing mRNA into DNA, and performing RT-PCR. The objective of the authors' study was to develop a

high throughput assay so there was a more efficient screen for the effect of exogenous factors on the expression of wit3.o in mouse fibroblasts. To achieve this goal, the authors utilized bDNA assay, a direct mRNA measurement system. The obtained z-score using bDNA assay was promising, representing this assay's sensitivity and reproducibility suitable for high throughput drug screening<sup>7</sup> (FIGURE 2).

The authors cooperated with the University of California at Los Angeles Molecular Screening Shared Resource laboratory that houses a custom-built robot that can automate screening assays to screen its 100,000 available chemicals. There, they have obtained

a promising set of bioactive small chemical compounds that await further characterization (FIGURE 4).

High throughput drug screening on fibroblasts can elucidate the molecular control of the gene and give a better understanding of the oral wound repair process. Discovery of chemicals that upregulate FGFR1OP2/wit3.o could provide faster wound closure in the oral cavity or induce an oral wound phenotype in skin wounds. Chemicals that downregulate FGFR1OP2/wit3.o could provide surgeons a method to control wounds that heal too rapidly and a means to study the relationship of soft tissue and alveolar bone in the oral cavity. ■■■■



	1	2	3	4	5	6	7	8	9	10	11	12
A	0.068844	0.089627	0.093317	0.103701	0.09642	0.095768	0.106249	0.115948	0.113909	0.071229	0.101159	0.081294
B	0.076692	0.087093	0.098812	0.094708	0.043278	0.085641	0.104805	0.10802	0.102328	0.071158	0.093727	0.088702
C	0.095847	0.103071	0.107522	0.110769	0.113185	0.091273	0.097794	0.094538	0.107112	0.080616	0.088538	0.098169
D	0.098214	0.10272	0.106463	0.108396	0.110451	0.103919	0.101147	0.110722	0.105208	0.083712	0.088425	0.11764
E	0.093818	0.098461	0.106033	0.113393	0.118672	0.093991	0.109394	0.106097	0.105807	0.083403	0.102759	0.110553
F	0.096676	0.111489	0.10236	0.121	0.107852	0.098406	0.104739	0.101048	0.114295	0.077263	0.095054	0.120828
G	0.097629	0.12272	0.113874	0.119661	0.124962	0.090107	0.099117	0.109242	0.099803	0.079225	0.098093	0.09829
H	0.09937	0.12464	0.111212	0.130257	0.115386	0.109202	0.116527	0.114784	0.109488	0.076098	0.084389	0.098642

FIGURE 4A.

## wit3.0 ATPLITE vs Quantigene

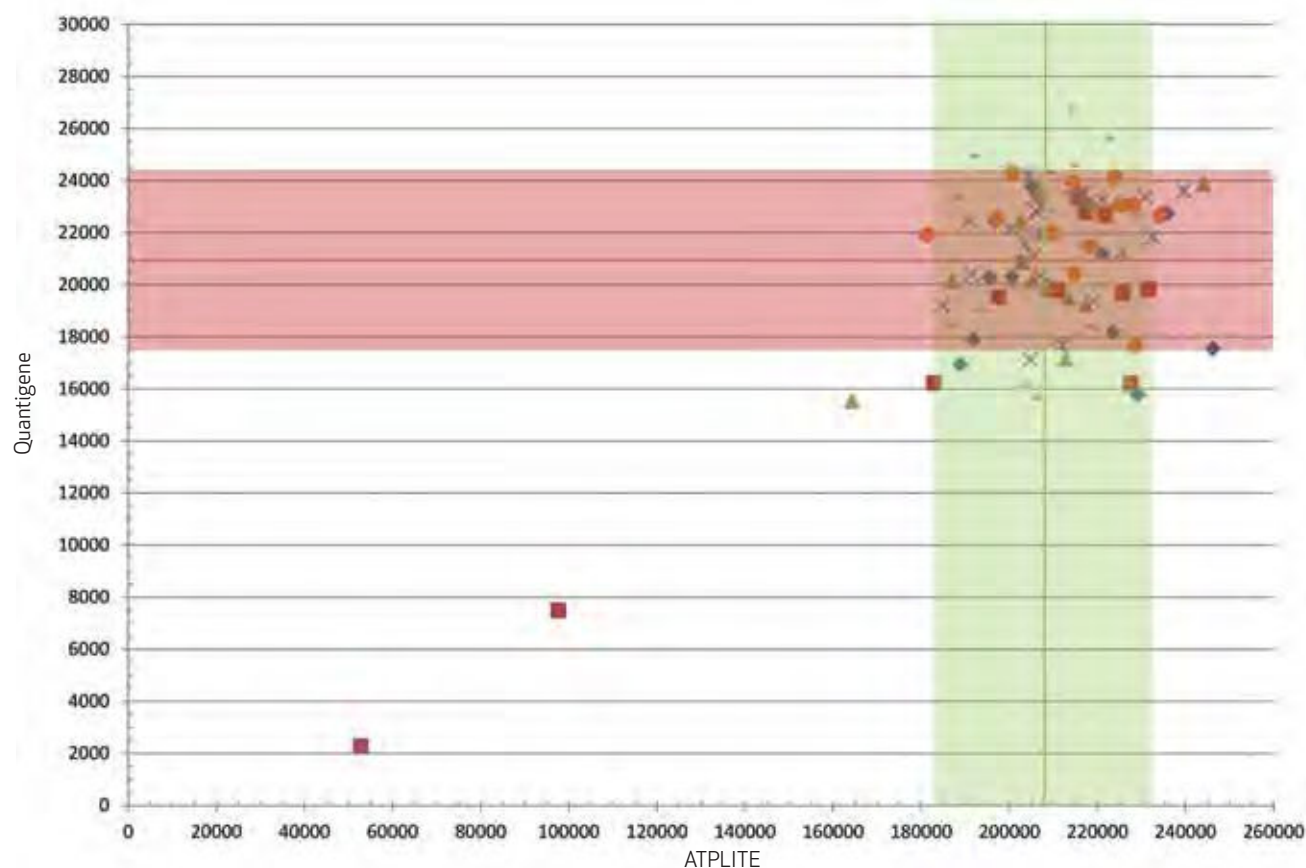


FIGURE 4B.

**FIGURE 4.** (4A) 96-well plate "hit map" of the ratio of Quantigene/ATPLite. Results are from the incubation of CCL-1 cells with enzyme inhibiting chemicals performed using the high throughput screening protocol. The plate map is color coded from high (green) to low (red) genetic expression. (4B) Scatterplot of ATPLite vs. Quantigene values. Possible up- and down-regulatory candidates are located in the green regions, above or below the red zone. These hits represent those that stayed within one standard deviation of the mean viability, but are more than one standard deviation away from the mean gene expression level.



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**Timothy G. Giroux**  
DDS/Broker

## ASK THE BROKER

### As the year comes to a close...

Whether your candidate won or lost in last month's presidential election, I am sure we are all glad that it is over. From California's election, one thing is certain...taxes will increase for most dentists! I mentioned in last month's feature that we would report back on a relatively new tax-deferred strategy known as the Deferred Sales Trust. An east coast firm specializes in setting this up for dentists and veterinarians. It is essentially an installment sale through the trust. Every accountant I consulted with about this strategy felt that it would not cut the muster with the IRS. I discussed the accountants' concerns with the representative for the firm. While he understood and addressed our concerns, the strategy really has not been fully tested and the investors/Sellers would need to understand the implications if the IRS ultimately ruled against the strategy.

#### Here is my year-end advice for Sellers

If your practice is currently on the market or you are contemplating selling your practice next year, finish the year strong!! Lenders and Buyers value your practice almost exclusively on the most current year-end P&L. Try **not** to take too much time away from the office until January. Make all of your December bank deposits on time and try to have them posted **before** January, as opposed to some accountant's advice for you to wait until January so that the tax burden is delayed for a year. If you are currently under contract, many accountants are advising their clients to close this calendar year due to the tax changes. In the past, most accountants advised their Sellers to close in January. If you are thinking of selling next year, begin the process now so that you are ready for what is traditionally the busiest time of the year for buyers coming into the market, which is usually late January.

#### Here is my year-end advice to Buyers

If you are under contract, work to close **this** year. Sellers are much more amenable to closing this year. If you are frustrated searching for the right opportunity, I believe that the inventory will start to pick up next year as compared to the past few years because many Sellers who have been holding on may decide that it is time to finally retire next year as they probably realize that taxes will only increase in the future.

To all of you, have a safe and happy holiday season!

**Timothy G. Giroux, DDS** is currently the Owner & Broker at **Western Practice Sales** ([westernpracticesales.com](http://westernpracticesales.com)) and a member of the nationally recognized dental organization, ADS Transitions. You may contact **Dr Giroux** at: [wps@succeed.net](mailto:wps@succeed.net) or 800.641.4179

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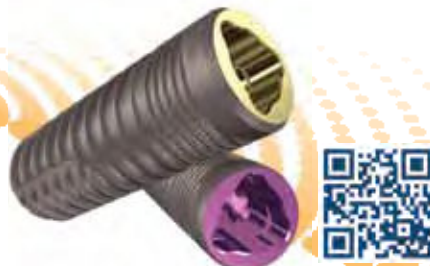
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# Discovery of Specific Ligands for Oral Squamous Carcinoma to Develop Anti-cancer Drug Loaded Precise Targeting Nanotherapeutics

FAN YANG, BEN; RUIWU LIU, PHD; RANDALL KRAMER, PHD; WENWU XIAO, PHD; RICHARD JORDAN, DDS, PHD; AND KIT S. LAM, MD, PHD

**ABSTRACT** Oral squamous cell carcinoma has a low five-year survival rate, which may be due to late detection and a lack of effective tumor-specific therapies. Using a high throughput drug discovery strategy termed one-bead one-compound combinatorial library, the authors identified six compounds with high binding affinity to different human oral squamous cell carcinoma cell lines but not to normal cells. Current work is under way to develop these ligands to oral squamous cell carcinoma specific imaging probes or therapeutic agents.

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*Conflict of Interest*  
*Disclosure: None reported.*

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*Disclosure: None reported.*

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*Conflict of Interest*  
*Disclosure: None reported.*

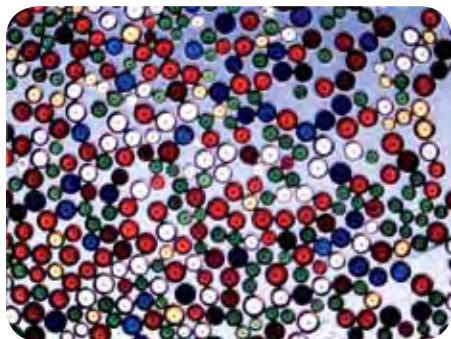
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*Conflict of Interest*  
*Disclosure: None reported.*

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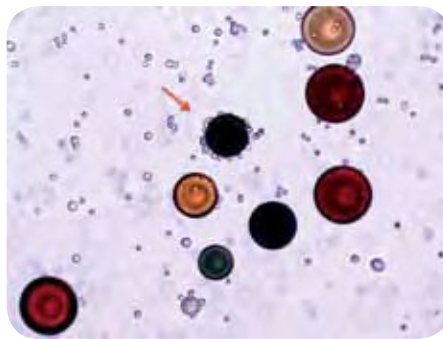
This work is supported by COHORT Training Grant US/DHHS/NIH/NIDCR T32.

Oral squamous cell carcinoma (OSCC) is one of the biggest causes of morbidity worldwide with a low five-year survival rate that may be due to late detection and an absence of effective tumor-specific therapies.<sup>1,2</sup> Development of early detection techniques and innovative therapies is greatly needed.

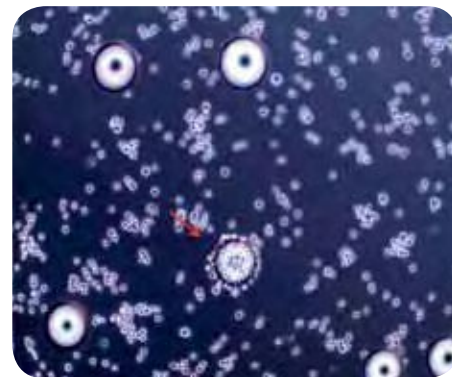
The one-bead one-compound (OBOC) combinatorial library method has been applied to discover ligands against a number of biological targets, such as cell protein kinase substrates and inhibitors, protease substrates and inhibitors, cell surface receptor, artificial enzymes, and various ligands



**FIGURE 1.** Photomicrograph of rainbow beads generated using organic dyes; one color denotes one OBOC library.



**FIGURE 2.** Photomicrograph of screening with mixture of color-coded OBOC libraries. A binding bead was identified from the blue color-coded OBOC library (arrow).



**FIGURE 3.** Photomicrograph of the OSCC cell-binding bead identified from X1 OBOC library (arrow).

for the preparation of affinity column media.<sup>3-7</sup> In this study, the authors employed OBOC combinatorial library technology to look for the ligands that can bind OSCC cells with high-binding affinity and specificity.

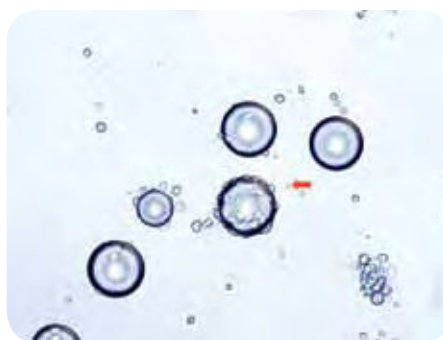
## Material and Methods

### Cells

Normal and tumor cell lines were obtained from American Type Culture Collection, except as otherwise described. Normal human keratinocytes (NHK) were gifted from Dr. Fong Tong Liu of the Department of Dermatology, University of California at Davis Medical Center. The authors prepared normal peripheral white blood cells using the Ficoll-Paque gradient method from peripheral blood of a healthy donor.

### Synthesis of the Initial and Focused OBOC Libraries

The authors generated the OBOC libraries on TentaGel S NH<sub>2</sub> resin (Rapp Polymere Bmbh) using a “split-mix synthesis” approach as previously reported.<sup>3</sup> Standard solid-phase peptide synthesis techniques with 9-fluorenylmethoxycarbonyl chemistry and N-hydroxybenzotriazole/N,N'-diisopropylcarbodiimide coupling were used in the construction of the OBOC libraries. The completion of each coupling step was determined with a ninhydrin test.



**FIGURE 4.** Photomicrograph of a non-NHK-binding bead that was identified from OSCC-binding beads (arrow).

### Generation of Rainbow Beads

Individual OBOC libraries were labeled with oil-based organic dyes that are used as the coding tags.<sup>8</sup> In this “rainbow beads” method, saturated solution of organic dyes such as Sudan black B, Sudan blue 2, scarlet red, disperse yellow, and purpurin were prepared in dimethylformamide and mixed with individual libraries for one hour and washed with hexane, water, and phosphate buffered saline prior to screening with live OSCC cells (**FIGURE 1**).

### Preliminary Screening With Color-Coded OBOC Libraries

OSCC3 cells were grown in Dulbecco's Modified Eagle Medium with antibiotics and 10 percent fetal bovine serum. After reaching 80 percent confluence, cells were harvested by trypsin. Small samples of each color-coded OBOC library were then combined and screened concurrently



**FIGURE 5.** Photomicrograph of live OSCC cells binding to LYL 13 compound beads after one-hour incubation.

against live OSCC cells for three hours in 5 percent CO<sub>2</sub> at 50 rpm. The preferred libraries with OSCC cell binding were readily identified with the color code and selected for subsequent large-scale screenings for cell surface binding ligands.

### Large-Scale Cell-Based Screening With Selected OBOC Libraries

The six preferred OBOC libraries selected from preliminary screening were screened in a large scale (about 750,000 beads/each OBOC library) against live OSCC cells. The compound beads with a full-coating of OSCC cells were selected and treated with 8 M guanidine hydrochloride to remove the binding cells and adsorbed proteins. The OSCC cell-binding beads were then reincubated with OSCC cells



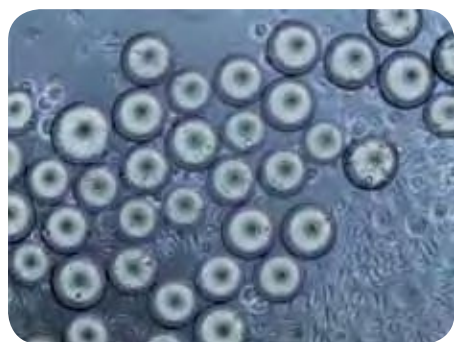


FIGURE 6A.

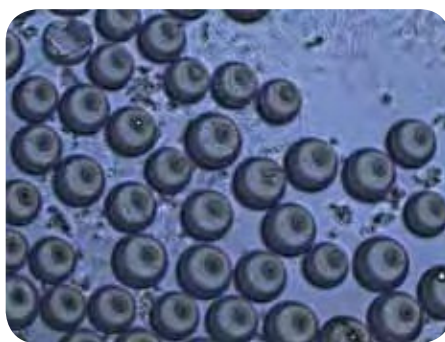


FIGURE 6B.

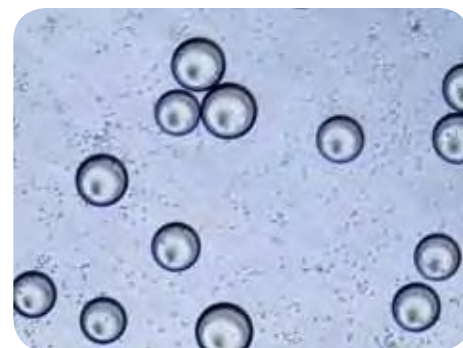


FIGURE 6C.

**FIGURE 6.** Photomicrograph of OSCC-binding compound beads challenged with normal human cells. After incubation of OSCC-binding beads with human normal cells of normal human keratinocytes (6A), fibroblast cell (6B) and white blood cells (6C) for eight hours, six of the OSCC-binding compounds were identified as not binding to these normal human cells. Some of cells attached to the surfaces of a petri dish with time (6A and 6B).

to confirm their binding ability. The OSCC binding beads were treated with 8 M guanidine hydrochloride again and screened with NHK for eight hours in EpiLife medium at 37 degrees Celsius and 50 rpm. The OSCC binding beads that did not bind to NHK were picked up. The chemical structures and sequences of the selected compound beads were determined by an automatic microsequencers as previously described.<sup>3</sup>

### *Evaluation of OSCC Binding Compounds' Affinity and Specificity*

The OSCC binding compounds discovered from the above study were resynthesized on TentaGel beads and evaluated with five different human OSCC cell lines, including OSCC 3, OSCC 4, OSCC 10A, OSCC HOK313, and OSCC MOK 101 for one hour in EpiLife medium and inspected under the microscope. The compounds were also challenged with NHK, fibroblast cells, endothelial cells, and while blood cells for eight hours in EpiLife medium at 37 degrees Celsius, 50 rpm, and inspected under the microscope.

### *Hemolytic Assay*

The standard hemolytic assay was used to evaluate the potential toxicity of the compounds identified.<sup>9</sup> Briefly, the compounds were synthesized in solution form and purified on C18 reversed phase high-pressure liquid chromatography. The compound structures were confirmed by

matrix-assisted laser desorption/ionization-time of flight mass spectrometry. The compounds were serially diluted in sterile saline (0.9 percent) and incubated with healthy human red blood cells (4x10<sup>6</sup> red blood cells/ml) for six hours, and absorbance was read by microplate reader at 550 nm. Triton X-100 1 percent was served as 100 percent hemolytic positive control. Red blood cells without added compounds was used as the negative control.

### **Results**

After preliminary screening of 24 OBOC libraries, six libraries were selected for further studies for having positive binding beads to OSCC, including one cyclic focused X1 OBOC library, one 7-mer arginine-glycine-aspartic acid based cyclic OBOC library and four random linear and cyclic OBOC libraries. As shown in **FIGURE 2**, a binding bead showed a layer of cell binding on the bead from a blue color-coded OBOC library (arrow). As a result, the blue color-coded OBOC library in this screening was selected for the large-scale screening. A total of 137 OSCC cell-binding beads were identified from X1OBOC library (~750,000 beads). As shown in **FIGURE 3**, only the compound beads with a full coating of OSCC cells were picked up (arrow). The 137 OSCC cell binding beads were then screened with NHK. As shown in **FIGURE 4**, some OSCC binding beads have more keratinocyte binding while

some have less NHK cell binding, and one nonbinding bead was identified (arrow). Thirteen compound beads were finally identified for their strong binding to OSCC cells but not binding to NHK. The chemical structures of the 13 compounds were determined by Edman chemistry. Even with the small number, a specific motif was observed. The authors have not identified a specific OSCC cell-binding compound from the other five OBOC libraries.

After resynthesis of 13 peptides on a large number of beads, the authors evaluated these compounds' binding property using five different human OSCC cell lines in EpiLife medium.

**FIGURE 5** shows that peptide LYL13 was completely coated with a monolayer of OSCC cells after one-hour incubation. The 13 peptides were also challenged with normal human cells for eight hours. As shown in **FIGURE 6**, some compounds do not bind to the following normal human cells including human keratinocytes (6A), fibroblast cells (6B) and white blood cells (6C). The screening results of 13 compounds against OSCC as well as normal human cells are summarized in the **TABLE**. Six compounds were selected for further studies for their strong binding ability to OSCC cells but not to normal human cells (highlighted red). No cytotoxicity was observed to human blood cells for any of the six compounds up to the concentration of 640 ug/ml.

TABLE

## Screening Results\* of 13 Compounds (LYL1-LYL13)\*\* With OSCC Cell Lines and Normal Human Cells

Cell Name***	LYL1	LYL2	LYL3	LYL4	LYL5	LYL6	LYL7	LYL8	LYL9	LYL10	LYL11	LYL12	LYL13
OSCC3	4+	4+	1+	4+	4+	-	4+	4+	4+	+	1+	4+	4+
OSCC4	4+	4+	3+	4+	4+	-	4+	4+	3+	-	4+	3+	3+
OSCC10A	4+	3+	1+	4+	3+	-	2+	4+	3+	-	1+	3+	4+
OSCCHok313	4+	1+	1+	-	4+	2+	2+	2+	2+	-	2+	4+	4+
OSCCMok101	2+	±	-	+	±	-	±	+	2+	-	±	±	2+
NHK	-	±	-	+	-	+	+	-	2+	-	-	-	±
HUVEC	-	-	-	-	-	-	-	-	-	-	-	-	-
NUFF	-	-	-	-	-	-	-	-	+	-	-	-	+
WBC	-	-	-	-	-	-	-	-	-	-	-	-	-

Six compounds were selected for further studies for their strong binding ability to OSCC cells but not to normal human cells (highlighted red).

\*4+: bead full coated with cells; 3+: bead 3/4 coated with cells; 2+: bead 2/4 coated with cells; 1+: bead 1/4 coated with cells; and ±: only fewer beads have cell binding.

\*\*LYL1 to LYL13 are the names of OSCC binding compounds.

\*\*\*OSCC: oral squamous carcinoma cell line; NHK: human keratinocyte; HUVEC: human endothelial cell; NUFF: human fibroblast cells; WBC: human granulocytes.

## Discussion

Combinatorial chemistry is one of the most important approaches in medicinal chemistry to identify the specific targets on live tumor cells. Combinatorial libraries can be created using synthetic chemistry by joining a large number of compounds ranging from natural and synthetic small molecules randomly with various building blocks. By screening diverse initial and focused OBOC peptidomimetic libraries, the authors identified six compounds with high-affinity binding to different human OSCC cell lines but no binding to NHK, fibroblast cells, endothelial cells, and granulocytes. These six compounds were composed of natural and synthetic amino acids; therefore, they might resist proteolysis in vivo. A motif was observed among the six compounds. Given that these six compounds are not toxic to human red blood cells, and not binding to human white blood cells, they can be considered safe candidates for further study.

X1 OBOC library from which the authors discovered six OSCC binding compounds is the focused library based on a cyclic peptide motif to bind preferentially to ovarian cancer with high specificity against  $\alpha_3$  integrin, therefore, it was expected these six OSCC binding ligands involved  $\alpha_3$  integrin interactions.<sup>10</sup> However, to characterize and

confirm the integrins involved, the authors needed to conduct a cell adhesion-blocking assay utilizing a saturated amount of control mouse immunoglobulin G or anti-human integrin adhesion-blocking monoclonal antibodies to validate the ligand and receptor interaction.

OSCC is derived from the epithelial lining of the oral mucosa. Given the fact the oral cavity is easily accessible, the disease should be detected earlier. Current diagnostic techniques involve light-based detection systems, fluorescence visualization and brush cytology.<sup>11,12</sup> Unfortunately, only 35 percent of cases are caught early. The ligands discovered from the authors' study demonstrated clearly that they bind strongly to OSCC cells but do not bind to normal keratinocytes in this in vitro study. Work is under way to evaluate these ligands with pre-OSCC lesions (dysplastic) or benign lesions (ulcer). If these ligands are not specific enough, the authors will generate more focused OBOC libraries to search for the highly specific ligands for OSCC, with the OSCC cell-binding motif fixed or biased while other nonessential positions contain a large number of natural and unnatural amino acids or amino acid derivatives. The specific OSCC-binding ligands can be biotinylated and complexed with Qdot streptavidin conjugate (or organic

fluorophore) for cell staining and flow cytometry analysis. The most specific and high-affinity ligands might be used as the chairside primary OSCC screening tool. In addition, these fluorescent conjugates can be used as the probes for in situ detection of OSCC in clinics.

The most specific and high-affinity ligands for OSCC can also be used to develop anti-cancer drug-loaded precise-targeting nanotherapeutics. Recently, Dr. Lam's lab developed several novel nanocarriers for the delivery of paclitaxel (PTX) or other hydrophobic anti-cancer drugs.<sup>13-17</sup> The PTX-loaded and targeting ligand decorated nanoparticles (PEG5k-Cys4-CA8) exhibit superior antitumor efficacy and lower systemic toxicity profile in nude mice bearing ovarian cancer tumor xenografts when compared with equivalent doses of nontargeted PTX nanoparticles, as well as clinical PTX formulation (Taxol).<sup>18</sup> Specific OSCC-binding ligands discovered in the authors' study will be conjugated to PEG5k-Cys4-CA8 nanoparticles with loading of anti-OSCC drugs to study their precise targeting and treatment effect in in vitro and in vivo studies.

This project involves the identification of OSCC-specific ligands to develop more efficacious and less toxic imaging agents and nanotherapeutics for OSCC's

earlier diagnosis and potential treatment alternative. If proven successful in animal models, the new technology can be translated into novel and effective therapeutic agents for human oral carcinoma. As a result, the authors expect patients with refractory oral carcinoma will benefit from such novel nanotherapies. ■■■■

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The University of California, San Francisco, School of Dentistry seeks applicants for a full time Clinic Director position. This is a non-tenure-track position in the Predoctoral Clinic. This is one of two Clinic Director positions working under the direction and leadership of the Associate Dean of Clinical Affairs.

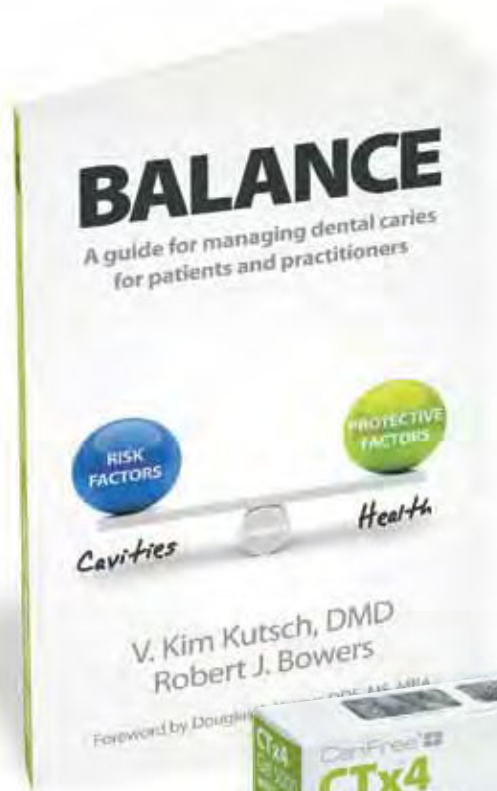
The Clinic Director shares responsibility for management of all patient care within the Predoctoral Clinics including developing patient care policies and procedures; providing student education; participating in the assignment and reassignment of patients within the program; handling and resolving patient complaints; and reviewing patient records to assess quality of care. The Clinic Director collaborates with the Division Chairs, Course Directors, faculty and other Administrative Team members in the implementation of policy and procedures.

Candidates must possess good clinical skills, dental knowledge, and ability to effectively communicate verbally and in writing. The Clinic Director will be required to provide clinical supervision one day per week in which he/she is expected to oversee the clinical activity in the Predoctoral dental clinics. The Clinic Director will participate one half day per week in an intramural faculty practice.

Candidates must have an active DDS or DMD degree. Interested applicants should submit a cover letter and a complete curriculum vitae to: <http://ucsfhr.ucsf.edu/careers/> Key word: Dental Job Requisition 37707BR

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V. Kim Kutsch, DMD received his undergraduate degree from Westminster College in Utah and then completed his DMD at the University of Oregon School of Dentistry in 1979. He is an inventor, holding numerous patents in dentistry, product consultant, internationally recognized speaker, past president of the Academy of Laser Dentistry and the WCMID. He has also served on the board of directors for the WCLI and the AACD. As an author, Dr. Kutsch has published dozens of articles and abstracts on minimally invasive dentistry, caries risk assessment, digital radiography, and other technologies in both dental and medical journals and has also contributed to several textbooks. He acts as a reviewer for several journals including JADA. Dr. Kutsch serves as CEO of Oral BioTech. As a clinician, he is a graduate and mentor in the prestigious Kois Center and maintains a private practice in Albany, Oregon.

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# Continuing Education Courses

Listed are C.E. courses offered by California's dental schools, local dental societies, ethnic dental societies and specialty organizations, from January through June 2013. For more information, please contact the course provider.

TOPIC	DATE		LOCATION	COST	UNITS
<b>ALPHA OMEGA DENTAL FRATERNITY</b>					<b>310-398-9626</b>
California Employment Laws	Feb. 27	David Albert Pierce, Esq.	Westwood	\$90	3
Implant Prosthodontics and Dental Anesthesia	March 13	Harel Simon, DMD; Ziv Simon, DMD, MSc; Stanley Malamed, DDS	West Los Angeles	\$295	7
Ethics and Law in Practice Development	April 24	Alvin Rosenblum, DDS	Westwood	\$90	3
<b>ARTHUR A. DUGONI SCHOOL OF DENTISTRY</b>					<b>dental.pacific.edu/ce1</b>
Stay Out of Jail: Avoid Coding Errors and Excel in Insurance Administration	Jan. 12	Charles Blair, DDS	San Francisco	\$225 dentist; \$165 allied dental professional	6
From Stress to Success: Stress Management Skills to Keep You and Your Dental Practice Healthy, Harmonious and Thriving!	Jan. 26	Mary O'Neill, MA, MFT	San Francisco	\$225 dentist; \$195 allied dental professional	6
Smile Reconstruction Using Porcelain Veneers	Feb. 2-3	Dino Javaheri, DMD; Howard Chi, DMD, MA	San Francisco	\$1,095	16
Low-Dose Radiation: Answering Your Patients' Concerns	Feb. 7	Gurminder Sidhu, BDS, DDS, MS	San Francisco	\$75	3
19th Annual Pacific/UCSF Island Dental Colloquium	Feb. 11-15	Brian Kenyon, DDS; Steven Sadowsky, DDS; Gaurav Setia, DDS	Maui, HI	\$695 dentist; \$475 allied dental professional	20
Infection Control and the California Dental Practice Act	Feb. 23	Eve Cuny, BA, MS; Bruce Peltier, PhD, MBA	San Francisco	\$125	4
A "Recipe for Success" with Direct Composites	March 2	Douglas Lambert, DDS	San Francisco	\$145	5
Clinical Pathologic Correlations for the General Dentist	March 16	Darren P. Cox, DDS, MBA; Jasjit Dillon, DDS, MD, BDS	San Francisco	\$245 dentist; \$185 allied dental professional	7
Is Sugar Addictive and Hazardous to Your Health?	April 11	Robert H. Lustig, MD	San Francisco	\$75	2
28th Annual Charles A. Sweet Sr. Pediatric Dentistry Memorial Lecture: Dental Care for Patients with ADHD and Autism	April 13	Barbara L. Sheller, DDS, MSD	San Francisco	\$345 dentist; \$265 allied dental professional	7
Pain Management: Best Practices with Fewer Narcotics	April 27	Andrew Young, DDS, MSD	San Francisco	\$225 dentist; \$165 allied dental professional	6
Implant Dentistry: Restorative and Aesthetic Fundamentals for the General Practitioner	May 3-4	Dino Javaheri, DMD; Ali Alijanian, DDS	San Francisco	\$995	16
Are You Numb Yet? The Anatomy of Local Anesthesia	May 11	Alan Budenz, MS, DDS, MBA	San Francisco	\$195 dentist; \$175 allied dental professional	7
<b>CALIFORNIA ASSOCIATION OF ORAL AND MAXILLOFACIAL SURGEONS</b>					<b>calaoms.org</b>
CALAOMS 2013 Anesthesia Symposium	Jan. 19-20	Andrew Herlich, DMD, MD; Frank Pavel, DMD; Thomas Dodson, DMD	La Quinta Resort & Club	TBD	TBD
CALAOMS 2013 Annual Meeting	May 4-5	Paul Petrungaro, DDS	San Francisco	TBD	TBD

TOPIC	DATE	LECTURER(S)	LOCATION	COST	UNITS
<b>CALIFORNIA DENTAL SOCIETY OF ANESTHESIOLOGY</b>					<b>cdsahome.org</b>
Always Being Prepared for the Unexpected in Office-Based Anesthesia	March 13,14	Robert L. Campbell DDS; Joel M. Weaver DDS PhD	Costa Mesa; San Jose	\$349	8
<b>CALIFORNIA SOCIETY OF PEDIATRIC DENTISTS</b>					<b>cspd.org</b>
The Affordable Healthcare Act — Its Effect on Pediatric Dental Practice	April 25	TBD	Rancho Mirage	\$615 full conference registration	0
A Pediatric Dentist Guide to Orofacial Myology	April 26	Kirk and Katherine Bowman	Rancho Mirage	\$615 full conference registration	2
Embezzlement: Simple Strategies to Avoid Theft in Your Dental Practice	April 26	Ali Oromchian, JD, LLM	Rancho Mirage	\$615 full conference registration	3
Financial Planning and Asset Protection	April 26	Stewart Carnes	Rancho Mirage	\$615 full conference registration	0
Simple Tips to Start a Sedation Practice	April 26	David Rothman, DDS	Rancho Mirage	\$615 full conference registration	1.25
A Review of Medical and Dental Emergencies: How to Recognize, Treat and Prevent Them	April 27	Joseph Renzi Jr., MA, DDS	Rancho Mirage	\$615 full conference registration	2
Infection Control	April 27	Leslie Canham, CDA, RDA	Rancho Mirage	\$615 full conference registration	2
What To Expect When You're Sedating: Basics of Sedation for the Advanced Practitioner	April 27	David Rothman, DDS	Rancho Mirage	\$615 full conference registration	3
Insurance Coding Workshop	April 28	Mary Essling	Rancho Mirage	\$615 full conference registration	3
<b>CONTRA COSTA DENTAL SOCIETY</b>					<b>ccdds.org</b>
The Diagnosis and Mgmt of Obstructive Sleep Apnea and The Mgmt of Life-Saving Medical Emergencies in Dentistry	Feb. 15	M. Anthony Pogrel, DDS, MD	Walnut Creek	\$195 ADA member	7
Giving Patients What They Want: Immediate Satisfaction with Dental Implants	Feb. 19	Scott Keith, DDS	Concord	\$40	2
California Dental Practice Act and Infection Control	March 8	Robyn Thomason and Diane Morgan-Arns	Concord	\$80 ADA member; \$105 nonmember	4
An Update on Local Anesthesia and Sedation for the Dental Team	April 26	J. Bruce Bavitz, DMD	Walnut Creek	\$195 ADA member	7
<b>FRESNO-MADERA DENTAL FOUNDATION</b>					<b>fmdentalfoundation.org</b>
Medical-Dental Pharmacology	Jan. 11	Diana Morton, PharmD	Piccadilly Inn-Airport	\$80 FMDF member dentist; \$100 non-FMDF member dentist; \$50 RDH, RDA, tech; \$35 associate member RDH, RDA	3
Periodontitis / Peri-Implantitis	Feb. 1	Richard Nathan, DMD, MS	Piccadilly Inn-Airport	\$140 FMDF member dentist; \$170 non-FMDF member dentist; \$90 RDH, RDA, tech; \$75 associate member RDH, RDA	7
OSHA, Infection Control and Dental Law	March 1	William Carpenter, DDS, MS; Bruce Peltier, PhD, MBA	Piccadilly Inn-Airport	\$140 FMDF member dentist; \$170 non-FMDF member dentist; \$90 RDH, RDA, tech; \$75 associate member RDH, RDA	7
Interdisciplinary Orthodontic Tooth Movement	April 5	William Mihram, DDS	Piccadilly Inn-Airport	\$140 FMDF member dentist; \$170 non-FMDF member dentist; \$90 RDH, RDA, tech; \$75 associate member RDH, RDA	7

TOPIC	DATE	LECTURER(S)	LOCATION	COST	UNITS
Hormone Balance and Living Physically Fit	May 17	Charles Carpenter, MD	Piccadilly Inn-Airport	\$140 FMDF member dentist; \$170 non-FMDF member dentist; \$90 RDH, RDA, tech; \$75 associate member RDH, RDA	7
TBA	June 7	TBA	Piccadilly Inn-Airport	\$140 FMDF member dentist; \$170 non-FMDF member dentist; \$90 RDH, RDA, tech; \$75 associate member RDH, RDA	7
HERMAN OSTROW SCHOOL OF DENTISTRY OF USC CONTINUES ON NEXT PAGE					uscdentalce.org
USC Periodontal and Implant Symposium: Hands-On Workshop I— Microsurgery and VISTA	Jan. 23	Homa Zadeh, DDS, PhD	Los Angeles	\$1,795	8
USC Periodontal and Implant Symposium: Hands-On Workshop II — Maxillary Sinus Augmentation	Jan. 24	Steve Wallace, DDS	Los Angeles	\$1,895	8
The 38th Annual USC International Periodontal and Implant Symposium	Jan. 25-26	Dr. Homa Zadeh, DDS, PhD, and faculty	Los Angeles	\$545 dentist; \$345 auxiliary	14
The 38th Annual USC International Periodontal and Implant Symposium: Dental Hygiene Forum	Jan. 26	Stefan Bughi, MD; Stanley Malamed, DDS	Los Angeles	\$155 dentist; \$155 auxiliary	5
The 38th Annual USC International Periodontal and Implant Symposium: Dental Hygiene Forum — Optional Hands-On Workshop	Jan. 26	TBA	Los Angeles	\$105 dentist; \$105 auxiliary	2
USC Periodontal and Implant Symposium: Hands-On Workshop III — Ridge Augmentation in the Esthetic Zone	Jan. 27	Maurice Salama, DMD	Los Angeles	\$1,895	8
Mastering Molar Endodontics	Feb. 1-2	Ilán Rotstein, DDS, and USC endo faculty	Los Angeles	\$1,545	14
Oral Surgery for the General Practitioner	Feb. 2	Bach Le, DDS, MD, FICD, and faculty	Los Angeles	\$295 dentist; \$225 auxiliary	7
Implant CPR! Successful Management of Prosthetic Implant Complications (Modules I — Lecture)	Feb. 8	Harel Simon, DMD	Los Angeles	\$295 dentist; \$225 auxiliary	7
Implant CPR! Successful Management of Prosthetic Implant Complications (Modules I-II — Lecture and Hands-On)	Feb. 8-9	Harel Simon, DMD	Los Angeles	\$1,595 dentist; \$1,055 auxiliary	14
Implant CPR! Successful Management of Prosthetic Implant Complications (Module II — Hands-On)	Feb. 9	Harel Simon, DMD	Los Angeles	\$1,465 dentist; \$945 auxiliary	7
Emerging Diseases, Infection Control, and California Dental Practice Act	Feb. 9	Joyce Galligan, RN, DDS; Patricia Galligan, JD	Los Angeles	\$195 dentist; \$155 auxiliary	6
Chronic Orofacial, Orodonal and Headache Pains for the Dentist	Feb. 22-23	Glenn Clarck, DDS, MS, and USC faculty	Los Angeles	\$495 dentist; \$385 auxiliary	14
Porcelain Veneers: Optimizing Results Using Supre-Gingival Principles, and Understanding Adhesion and Occlusion	March 8	Jose-Luis Ruiz, DDS, FAGD, and USC faculty	Los Angeles	\$245 dentist; \$175 auxiliary	7
USC Ruth Ragland 27th Dental Hygiene Symposium	March 9	Diane Melrose, RDH, BS	Los Angeles	\$195	7
Implant Therapy in the Esthetic Zone (Course C)	March 15-17	Homa Zadeh, DDS, PhD, and USC faculty	Los Angeles	\$1,995 dentist; \$995 auxiliary	20

TOPIC	DATE		LOCATION	COST	UNITS
HERMAN OSTROW SCHOOL OF DENTISTRY OF USC			CONTINUES ON NEXT PAGE		uscdentalce.org
Esthetic Full Mouth Implant Reconstruction: From Treatment Planning to Fixed Restorations (Modules I, II, and III — Lecture and Hands-On)	March 22-24	Harel Simon, DMD and USC faculty	Los Angeles	\$1,995 dentist; \$1,695 auxiliary	21
Esthetic Full Mouth Implant Reconstruction: From Treatment Planning to Fixed Restoration (Module I — Lecture)	March 22	Harel Simon, DMD	Los Angeles	\$295 dentist; \$225 auxiliary	7
Esthetic Full Mouth Implant Reconstruction: From Treatment Planning to Fixed Restoration (Module II — Lecture)	March 23	Harel Simon, DMD	Los Angeles	\$295 dentist; \$225 auxiliary	7
Mastering Bone Grafting for Implant Site Development — Lecture and Hands-On Workshop (Module I)	March 23	Bach Le, DDS, MD, FICD, and USC faculty	Los Angeles	\$1,295 dentist; \$695 auxiliary	8
Esthetic Full Mouth Implant Reconstruction: From Treatment Planning to Fixed Restoration (Module III — Hands-On)	March 24	Harel Simon, DMD, and USC faculty	Los Angeles	\$1,875	7
Mastering Bone Grafting for Implant Site Development — Cadaver Workshop (Module II)	March 24	Bach Le, DDS, MD, FICD, and USC faculty	Los Angeles	\$1,795 dentist; \$1,095 auxiliary	7
Fundamentals of Restorative Implant Dentistry for the General Dentist (Part I — Lecture)	March 29	Baldwin Marchack, DDS, MBA	Los Angeles	\$325 dentist	7
Fundamentals of Restorative Implant Dentistry for the General Dentist (Part I and II — Lecture and Hands-On)	March 29-30	Baldwin Marchack, DDS, MBA	Los Angeles	\$1,095 dentist	14
Obstructive Sleep Apnea, Snoring and Dental Advancement	March 29-30	Glenn Clark, DDS, MS, and faculty	Los Angeles	\$495 dentist; \$385 auxiliary	14
Basic Protocols in Bone and Soft Tissue Grafting in Implant Therapy (Course D)	April 5-7	Homa Zadeh, DDS, PhD; Ira Sy, DDS, MS	Los Angeles	\$1,995 dentist; \$995 auxiliary	20
Applied Hypnosis: Treat Pain, TMD and Other Dental Conditions	April 20-21	Peter Stone, DDS; Ronald Kaminishi, DDS	Los Angeles	\$595 dentist	14
Esthetic Periodontal Surgery for the General Practitioner (Module I — Lecture)	April 26	Ziv Simon, DMD, MSc	Los Angeles	\$295 dentist; \$225 auxiliary	7
Esthetic Periodontal Surgery for the General Practitioner (Module I and II — Lecture and Hands-On)	April 26-28	Ziv Simon, DMD, MSc	Los Angeles	\$1,845 dentist	21
Common Oral Lesions: Soft and Hard Tissue Diseases	May 3	Parish Sedghizadeh, DDS, MS, and USC faculty	Los Angeles	\$245 dentist; \$175 auxiliary	7
Learning Implant Dentistry for the Restorative Dentist	May 4	George C. Cho, DDS, FACp	Los Angeles	\$245 dentist; \$195 auxiliary	7
Atraumatic Extraction and Minimally Invasive Implant Site Development (Modules IA — Lecture and Hands-On)	May 11	Bach Le, DDS, MD, FICD, and USC faculty	Los Angeles	\$345 dentist; \$245 auxiliary	5
Atraumatic Extraction and Minimally Invasive Implant Site Development (Modules IA and IB — Lecture, Hands-On, and Cadaver Workshop)	May 11	Bach Le, DDS, MD, FICD, and USC Faculty	Los Angeles	\$995 dentist; \$745 auxiliary	8
Physical Evaluation	May 13	Stanley Malamed, DDS; Kenneth Reed, DMD	Los Angeles	\$295 dentist; \$225 auxiliary	7
Emergency Medicine	May 14	Stanley Malamed, DDS; Kenneth Reed, DMD	Los Angeles	\$295 dentist; \$225 auxiliary	7

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C.E., CONTINUED FROM 948

TOPIC	DATE		LOCATION	COST	UNITS
<b>HERMAN OSTROW SCHOOL OF DENTISTRY OF USC</b>			<b>uscdentalce.org</b>		
Pharmacology	May 15	Stanley Malamed, DDS; Kenneth Reed, DMD	Los Angeles	\$295 dentist; \$225 auxiliary	7
Monitoring and SIM-MAN	May 16	Stanley Malamed, DDS; Kenneth Reed, DMD	Los Angeles	\$445 dentist; \$295 auxiliary	7
Prepress Porcelain Veneers	May 18-19	Domenico Cascione, MDT, BS; Sillas Duarte, DDS, MSc	Los Angeles	\$1,195 dentist; \$495 auxiliary	14
Temporomandibular Disorders, Arthrocentesis and Botox/Trigger Point Injections	May 31-June 1	Glenn Clark, DDS, MS, and faculty	Los Angeles	\$495 dentist; \$385 auxiliary	14
Endodontics from A-Z: Hands-On Workshop for the General Practitioner	June 7-9, 21-23	Ilan Rotstein, DDS and USC faculty	Los Angeles	\$2,995 dentist	42
Advanced Soft Tissue and Bone Grafting with Cadaver Workshop (Course E)	June 7-9	Homa Zadeh, DDS, PhD, and USC faculty	Los Angeles	\$2,995 dentist; \$1,595 auxiliary	24
Simplifying Anterior Restorations: Problem Solving in the Esthetic Zone (Part I - Lecture)	June 28	Abdi Sameni, DDS, and faculty	Los Angeles	\$295 dentist; \$225 auxiliary	7
Simplifying Anterior Restorations: Problem Solving in the Esthetic Zone (Part I and II — Lecture and Hands-On)	June 28-30	Abdi Sameni, DDS, and faculty	Los Angeles	\$1,995 dentist	21
<b>HUMBOLDT DEL NORTE DENTAL SOCIETY</b>			<b>hdnds.org</b>		
Changing Concepts in Periodontics: What the General Dentist Should Know	Jan. 25	William Lundergan, DDS, MA	Arcata	\$135	6
Evidence Based Dentistry	March 14	Ronni Brown	Eureka	\$50	2
Implant Prosthetics in the Aesthetic Zone	March 22	Todd Schoenbaum, DDS	Arcata	\$135	6
<b>KERN COUNTY DENTAL SOCIETY</b>			<b>kerncountyds.org</b>		
Infection Control, Dental Practice Act, OSHA Compliance	Jan. 18	Leslie Canham	Bakersfield	\$200 member dentist; \$300 nonmember dentist; \$75 auxiliary	6
Infection Control, Dental Practice Act, OSHA Compliance	Jan. 18	Leslie Canham	Bakersfield	\$200 member dentist; \$300 nonmember dentist; \$75 auxiliary	6
Restorative Solutions with Comprehensive Diagnosis and Treatment Planning	Feb. 22	Lane Ochi, DDS	Bakersfield	\$200 member dentist; \$300 nonmember dentist; \$75 auxiliary	6
3D Imaging: Interpretation, Diagnosis, Treatment Planning	March 22	Gurminder Sidhu, DDS	Bakersfield	\$200 member dentist; \$300 nonmember dentist; \$75 auxiliary	6
The Modern Restorative Practice	May 17	Michael DiTolla, DDS	Bakersfield	\$200 member dentist; \$300 nonmember dentist; \$75 auxiliary	6
<b>MARIN COUNTY DENTAL SOCIETY</b>			<b>mcdsweb.org</b>		
Health Care Provider CPR	Jan. 24, Feb. 28, March 21, April 25, May 30	TBD	San Rafael	\$75 member/staff	3.5
Marin County Dental Society Conference	Feb. 23-March 2	Patrick L. Roetzer, DDS FICD	Jackson Hole, WY	Contact MCDS	18
Infection Control	Feb. 12	Eve Cuny, MS	San Rafael	\$49 member/staff	2
Cone Beam Imaging	March 20	Samer Ebeid, DDS	San Rafael	\$49	2

TOPIC	DATE		LOCATION	COST	UNITS
<b>MID-PENINSULA DENTAL SOCIETY</b>					<b>mpds.org</b>
Infection Control/Dental Practice Act	Jan. 25	Eve Cuny, MS	Palo Alto	\$85	4
<b>MONTEREY BAY DENTAL SOCIETY</b>					<b>montereybaydentist.com</b>
The Christensen Bottom Line — 2013	Jan. 18	Gordon J. Christensen, DDS MSD PhD	Seaside	\$280 CDA member; \$350 nonmembers; \$130 auxiliary	7
TBA	March 15	To be Announced	Seaside	\$250 CDA member; \$350 nonmember; \$115 auxiliary	7
California Dental Practice Act and Infection Control — Dental Board Mandated	May 17	Ron Goldman, JD; Eve Cuny, MS	Monterey	\$140 CDA member; \$280 nonmember; \$60 auxiliary	4
<b>LOMA LINDA UNIVERSITY SCHOOL OF DENTISTRY</b> CONTINUES ON NEXT PAGE					<b>dentistry.llu.edu</b>
Treatment Alternatives for Non-healing Root Canal Treatments	Jan. 20-21	Mahmoud Torabinejad, DMD, MSD, PhD; Joseph Kan, DDS, MS	Loma Linda	\$545 dentist/auxiliary	16
CAD/CAM — Primetime Yet?	Feb. 7	Paul M. Richardson, CDT	Loma Linda	\$20 dentist; \$20 auxiliary	1
Color Matching — The Key to Success	Feb. 7	Satoshi Sakamoto, RDT	Loma Linda	\$20 dentist; \$20 auxiliary	1
Dental Anatomy Revisited: Why it is So Important to Dentist, Hygienists and Periodontists	Feb. 7	Martyn Green, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Dental Anesthesia Review (hands-on)	Feb. 7	Patricia Lennan, RDH	Loma Linda	\$40 dentist; \$40 auxiliary	2
Digital Impressions	Feb. 7	Faisal Al-Qarni, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Esthetic Crown Lengthening	Feb. 7	Maria Landaez, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Evidence-Based Tooth Preparation	Feb. 7	Wayne Campagni, DMD	Loma Linda	\$20 dentist; \$20 auxiliary	1
FAQs of Pediatric Dentistry: Tips for Treating the Pediatric Patient	Feb. 7	Jung-Wei Chen, DDS, MS, PhD	Loma Linda	\$40 dentist; \$40 auxiliary	2
How to Ensure Passive Fit of Dental Implant Prosthesis	Feb. 7	Petch Oonpat, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Immediate Provisionalization on Completely Edentulous Patients with Digital Provisional Dentures	Feb. 7	Antoanela Garbacea, DDS; Thomas Maveli, DDS	Loma Linda	\$30 dentist; \$30 auxiliary	1.5
Implant Maintenance Therapy 101 for the Dental Team — Essentials for Predictable Implant Maintenance and Longevity	Feb. 7	Jim Grisdale, BA, DDS, MRCD(C)	Loma Linda	\$20 dentist; \$20 auxiliary	1
Implant Supported Provisional Restorations in the Esthetic Zone	Feb. 7	Catherine Kwon, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Indications and Benefits of Gingival Modifications and Augmentation: A Clinical Overview	Feb. 7	Erik Sahl, DDS, MSD	Loma Linda	\$20 dentist; \$20 auxiliary	1
Is Metal-Ceramic Technology Passe?	Feb. 7	Patrick Naylor, DDS, MPH, MS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Is Oral Sex Really a Dangerous Carcinogen?	Feb. 7	Lane Thomsen, DDS, MS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Latrogenic Effects on the Periodontium and Their Prevention	Feb. 7	Dennis Smith, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
My Aching Back! A Review of Dental Ergonomics and the Art of Remaining Healthy	Feb. 7	Doyle Nick, DDS, MS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Oral Complications of Cancer Treatment in Pediatric Patients	Feb. 7	Samah Omar, DDS, MS	Loma Linda	\$40 dentist; \$40 auxiliary	2
Panoramic Errors	Feb. 7	Dwight Rice, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1

TOPIC	DATE		LOCATION	COST	UNITS
LOMA LINDA UNIVERSITY SCHOOL OF DENTISTRY <small>CONTINUED</small>			dentistry.llu.edu		
Pediatric Dental Myth Busters (is the news, right?)	Feb. 7	Bonnie Nelson, DDS, MS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Preoperative Guidelines for Extraction and Immediate Implant Placement	Feb. 7	Jaime Lozada, DMD	Loma Linda	\$30 dentist; \$30 auxiliary	1.5
Prosthodontic Cases Presentation	Feb. 7	TBA	Loma Linda	\$20 dentist; \$20 auxiliary	1
Recognizing the Need for Early Treatment in Orthodontics	Feb. 7	Lysle E. Johnston Jr., DDS, MS, PhD; Patrick Turley, DDS, MSD, MEd	Loma Linda	\$175 dentist; \$125 auxiliary	7
Review of the Medically Compromised Patient	Feb. 7	Shelley Hayton, RDH, MAT	Loma Linda	\$20 dentist; \$20 auxiliary	1
Safety Protocols — Avoiding Accidents While Treating Children	Feb. 7	Wesley Okumura, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Saving a Compromised Tooth (Part 1)	Feb. 7	Gary Golden, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Saving a Compromised Tooth (Part 2)	Feb. 7	Fred Berry, DDS	Loma Linda	\$40 dentist; \$40 auxiliary	2
Simplified Sinus Graft for Maxillary Posterior Implants	Feb. 7	Aladdin Al-Ardah, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Simplified Sinus Graft for Maxillary Posterior Implants	Feb. 7	Aladdin Al-Ardah, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Soft Tissue Around Dental Implants, Does It Really Matter?	Feb. 7	Chun-Xiao Sun, DMD, MSD, PhD	Loma Linda	\$20 dentist; \$20 auxiliary	1
Surgical Ridge Expansion Techniques	Feb. 7	Jeffrey Miller, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
The Role of CAMBRA in Prosthodontic Therapy	Feb. 7	Ewa Parciak, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Treatment Options for Oral HPV Lesions	Feb. 7	Susan Richards, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Treatment Outcomes	Feb. 7	Madelyn Fletcher-Stark, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Treatment Plan of the Complicated Patients — Multi Disciplinary Presentations	Feb. 7	Morris DeLeon, DDS; Jocelyn Lee, DDS	Loma Linda	\$40 dentist; \$40 auxiliary	2
Ultrasonic Instrumentation (hands-on)	Feb. 7	Shirley Lee, RDH, MS	Loma Linda	\$40 dentist; \$40 auxiliary	2
Understanding and Interpreting Cone Beam CT Images	Feb. 7	Ashish Sharma, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Use of the Oral HPV Test in the Dental Office	Feb. 7	Heidi Christensen, DDS, MS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Why Some of My Implants Have Bone Loss?	Feb. 7	Chun-I Lu, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
CAD/CAM Applications in Complete Dentures	Feb. 8	Charles Goodacre, DDS, MSD	Loma Linda	\$20 dentist; \$20 auxiliary	1
Convention Complete Dentures 101	Feb. 8	Mathew Kattadiyil, DDS, MS	Loma Linda	\$20 dentist \$20 auxiliary	1
Conventional Complete Dentures 101	Feb. 8	Mathew Kattadiyil, DDS, MS	Loma Linda	\$20 dentist; \$20 auxiliary	1
Current Trends in BRONJ	Feb. 8	Kourt Chatelain, DDS	Loma Linda	\$10 dentist; \$10 auxiliary	0.5
Dental Alveolar Surgery Complications	Feb. 8	Nicholas Breig, DDS	Loma Linda	\$10 dentist; \$10 auxiliary	0.5
Endodontic Extravaganza: Updates in Endodontics	Feb. 8	Chad Gustafson, DDS; Elena Justice, DDS	Loma Linda	\$40 dentist; \$40 auxiliary	2
Evidence-based Screening and Diagnosis of Oral Cancer	Feb. 8	Justin Weaver, DDS	Loma Linda	\$10 dentist; \$10 auxiliary	0.5
Implant Pilikia	Feb. 8	Ronald Young, DMD	Loma Linda	\$20 dentist; \$20 auxiliary	1



TOPIC	DATE		LOCATION	COST	UNITS
Nerve Injury	Feb. 8	Chad Allen, DDS	Loma Linda	\$10 dentist; \$10 auxiliary	0.5
Obstructions and Perforations and Isolation — Oh No! Managing Common Endodontic Complexities	Feb. 8	C. John Munce, DDS, MS	Loma Linda	\$30 dentist; \$30 auxiliary	1.5
Orthognathic Surgery	Feb. 8	Trevor Griffiths, DDS	Loma Linda	\$10 dentist; \$10 auxiliary	0.5
Overview of Techniques for Oral Antral Fistulas Closures	Feb. 8	Jennifer Henkin, DDS	Loma Linda	\$10 dentist; \$10 auxiliary	0.5
Pediatric Oral Sedation (This course qualifies for California Sedation permit renewal)	Feb. 8	Peter Jimenez, DDS; Thomas Lenhart, DMD	Loma Linda	\$175 LLU Pediatric Dentistry Alumni; \$200 non LLU Pediatric Dentistry Alumni	8
Principles of Distraction Osteogenesis	Feb. 8	Aleksander Ross, DDS	Loma Linda	\$10 dentist; \$10 auxiliary	0.5
RPDs — Keeping it Simple	Feb. 8	Mark Estey, DDS	Loma Linda	\$30 dentist; \$30 auxiliary	1.5
Selection of Denture Teeth: Art or Science?	Feb. 8	Wendy Gregorius, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
The Restoration of Endodontically Treated Teeth	Feb. 8	Rami Jekki, DDS	Loma Linda	\$20 dentist; \$20 auxiliary	1
The Role and Responsibility of the Oral Health Provider in Detecting and Reporting Domestic Abuse	Feb. 8	Jocelyn Coupal, Esq.; Amy Young-Snodgrass, MD	Loma Linda	\$160 dentist; \$105 auxiliary	6
Trauma and Emergency Management	Feb. 8	Ryan Falke, DDS	Loma Linda	\$10 dentist; \$10 auxiliary	0.5
33rd Annual Anesthesia Symposium: Pain in the Dental Office	Feb. 10	Steve Ganzberg, DDS; Dezireh Sevanesian, DDS	Loma Linda	\$195 dentist; \$135 auxiliary	7
Restoration of the Worn Dentition	Feb. 10	Terrance Donovan, DDS	Loma Linda	\$175 dentist; \$125 auxiliary	7
Infection Control and California Dental Practice Act	March 3	Nancy Andrews, RDH, BS; Bette Robin, DDS, JD	Loma Linda	\$175 dentist; \$125 auxiliary	7
The Non-Odontogenic Toothache	March 10	Rodolfo Acosta-Ortiz, DDS, MS	Loma Linda	\$175 dentist; \$125 auxiliary	7
LLUSD and AAI Implant MaxiCourse®	Semimonthly Mar.14–Dec.6	Jaime Lozada, DMD; Mathew Kattadiyil, DDS, MS	Loma Linda	\$13,500	300
Celebrating 35 Years of Implant Dentistry at Loma Linda University School of Dentistry, Anterior Implant Esthetics: The Perio-Restorative Connection	March 24-25	Jaime Lozada, DMD; Joseph Kan, DDS, MS	Loma Linda	\$400 dentist; \$225 auxiliary	16
Restore Your Confidence in Pediatric Restorative Care	April 28	Greg Psaltis, DDS	Loma Linda	\$175 dentist; \$125 auxiliary	7
Smile Line Revitalization	May 5	George Priest, DDS	Loma Linda	\$175 dentist; \$125 auxiliary	7
Medical Emergencies in the Dental Practice	May 19	Steven Filler, DDS	Loma Linda	\$175 dentist; \$125 auxiliary	7
NORTHERN CALIFORNIA DENTAL SOCIETY CONTINUES ON NEXT PAGE				ncdsonline.org	
TMD, Appliance Therapy and Equilibration in Restorative Practice	Jan. 18	Gary M. DeWood, DDS, MS	Red Bluff	\$125 member; \$225 nonmember; \$55 auxiliary; \$15 late fee at door	7
Employment Compliance for Dentists, Successful Staff Management, Recruiting and Hiring	Feb. 15	Tim Twig, Bent Ericksen and Associates	Red Bluff	\$125 member; \$225 nonmember; \$55 auxiliary; \$15 late fee at door	6
Overview of Forensic Dentistry	March 8	James Wood, DDS	Red Bluff	\$125 member; \$225 nonmember; \$55 auxiliary; \$15 late fee at door	6

TOPIC	DATE		LOCATION	COST	UNITS
<b>NORTHERN CALIFORNIA DENTAL SOCIETY</b> <small>CONTINUED</small>			<b>ncdsonline.org</b>		
CDPA, OSHA Refresher, Infection Control	April 19	Leslie Canham, CDA, RDA	Red Bluff	\$125 member; \$225 nonmember; \$55 auxiliary; \$15 late fee at door	6
Life is Your Best Medicine and Nutrition for the Dental Team	May 10	Tieraona Low Dog, MD	Red Bluff	\$125 member; \$225 nonmember; \$55 auxiliary; \$15 late fee at door	6
<b>ORANGE COUNTY DENTAL SOCIETY</b>			<b>ocds.org</b>		
California Dental Practice Act and Infection Control	Jan. 8	Leslie Canham, CDA, RDA	Irvine	\$79	4
Basic Life Support for the Healthcare Provider	Jan. 16	Helen McCracken, RDH, MS	Orange	\$69	3
Managing Risk Factors in Implant Dentistry	Feb. 5	Martyn Green, DDS	Irvine	\$79	2.5
Ethics in Dentistry-The Secret to Long Term Success	May 5	Alvin Rosenblum, DDS	Irvine	\$79	2.5
No Trauma...No Drama: Sedation, Phobias, Special Needs and Pediatrics	May 7	Stanley F. Malamed, DDS	Irvine	\$79	2.5
<b>PACIFIC COAST SOCIETY FOR PROSTHODONTICS</b>			<b>pcsp.org</b>		
78th Annual Scientific Session of the Pacific Coast Society for Prosthodontics	June 26-29	John Sorensen, DMD, PhD, FACP	Anchorage, AL	\$695	16
<b>PUNJABI DENTAL SOCIETY</b>			<b>pdsociety.com</b>		
California Law, Infection Control and Risk Management	Jan. 27	Att. Patrick Wood; Rodney M. Stine; Gail Harris	Montebello	\$79	7
California Law, Infection Control and Risk Management	Feb. 24	Att. Patrick Wood; Rodney M. Stine; Gail Harris	San Jose	\$89	7
Esthetic Dentistry	March 24	DR DEDNEY	Montebello	\$79	7
Endodontics for the General Dentist	May 19	Lynne Brock, DDS	San Jose	\$89	7
Medical Emergencies in Dental Offices	June 23	Jeffrey A. Elo, DDS, MS	Montebello	\$79	7
<b>SACRAMENTO DISTRICT DENTAL SOCIETY</b>			<b>sdds.org</b>		
Practical Methods for Treating Elders in the Community	Jan. 8	Elisa Chavez, DDS; Christine Miller, RDH	Sacramento	\$60 member	2
New Labor Laws for 2013	Jan. 17	Mari Bradford	Audio Conference	\$45 member	1
CPR Basic Life Support for the Healthcare Provider	Jan. 19, April 6	SDDS Instructors	Sacramento	\$65 member	4
SDDS 33rd Annual MidWinter Convention	Feb. 7-8	Visit sdds.org for speaker listing	Sacramento	Visit sdds.org for pricing	14+
Write Your Own Employee Handbook — Workshop	March 1	Mari Bradford	Sacramento	\$149 member	4
Wellness for the Dental Team: Mind, Body and Emotional Health	March 12	Stephen Peters, MD	Sacramento	\$60 member	2
Associateships, Partnerships, Acquisitions, Oh My!	March 21	Jason Wood, Esq.	Sacramento	\$69 member	2.5
Innovate or Hibernate: The Next Step for Your Practice	March 22	Steve Swafford	Sacramento	\$199 member	5
Lasers in Dentistry — The Art and Science	April 9	Peter Pang, DDS	Sacramento	\$60 member	2
Hiring, Interviewing, Retaining	April 18	Mari Bradford	Audio Conference	\$45 member	1

CONTINUES ON 956

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**NEW LISTING - Price TBD, Endodontic Practice in the Bay Area**, Northern California with four (4) operatories, sterilization/lab combo, staff lounge, business office, private office, PBS Endo software, Kodak digital radiography with two (2) sensors and two (2) Zeiss microscopes. Contact our office for more information.

**NEW LISTING - \$300,000 - General Dentistry Practice in Newport Beach**, Orange County, Southern California with three (3) operatories, includes equipment, Zoom bleaching, sterilization/lab and over 40 years of goodwill at the same location. Located near Newport Center/Fashion Island in a desirable building with views from each operator. **IN ESCROW.**

**\$709,000 - General Dentistry Practice in Coastal Orange County**, Southern California, with four (4) operatories, fully equipped. Great location near shopping center. Modern, beautifully appointed office with high end finishes. Must see! Call our office for more information.

**PRICE REDUCTION - \$95,000 - Leasehold Improvements in Pasadena**, Los Angeles County, Southern California with six (6) Adec Chairs/Lights in a great part of town. Contact our office for more information.

**\$450,000 - General Dentistry Practice in N. San Diego County**, Southern California with five (5) operatories, sterilization room, adjustment lab, dark room, reception area, staff lounge, and business office. Located in a professional building. Established over 37 years, this practice refers out all specialty work. Room to grow!

**NEW LISTING - Price TBD - General Dentistry Practice in Downey**, Los Angeles County, Southern California, with fourteen (14) operatories, 1 large sterilization room, 1 small sterilization room, reception room, staff lounge, private office, business office, 2 storage rooms, and 2 consultation rooms all located in a free-standing building near shopping and freeway. Contact our office for more information.

**NEW LISTING - \$415,000 - Perio Practice in Orange County**, Southern California with five (5) operatories, fully equipped, one (1) plumbed, not equipped, sterilization room, staff lounge, private office, business office, consultation room, storage room. Great location on the first floor near freeways, hospital, and shopping. Call our office for more information.

**NEW LISTING - \$275,000 - General Dentistry Practice in Palm Springs**, Riverside County, Southern California with four (4) operatories. This practice is located on a main street, and has been established since 2005. Seller is moving out of the area. This is a PPO/Fee For Service practice, no HMO.

**\$80,000 - Dental Leasehold Improvements and Equipment in Lake Forest**, Orange County, Southern California with four (4) operatories, sterilization room, reception room, staff lounge, and private office in a retail center with plenty of foot traffic.

**\$545,000 - Amalgam-free General Dentistry Practice in Westwood**, Los Angeles County, Southern California with five (5) operatories, includes equipment, wet lab, consultation/seminar room, sterilization room. Doctor retiring. Great location across from UCLA campus in a professional building.

**NEW LISTING - Price TBD - General Dentistry Practice in the South Bay**, Los Angeles County, Southern California, with four (4) operatories, sterilization room, adjustment lab, reception room, staff lounge, private office, and consultation room. This practice is fully digital and paperless. Contact our office for more information.

**\$1,100,000 - This office does it all! General Dentistry / Specialty Practice in Sacramento**, Sacramento County, Northern California, with two (2) suites, one consists of general dentistry, the other does Specialty work. Nine (9) total operatories, six (6) equipped, three (3) plumbed, not equipped, with sterilization room, adjustment lab, x-ray room, dark room, reception area, staff lounge, private office, and storage room. Digital xrays, paperless office. Member of most PPO/HMO plans, **large monthly CAP CHECKS!**

**PRICE REDUCTION - \$395,000 - Prosthodontic Practice in Walnut Creek**, Contra Costa County, Northern California with three (3) operatories, fully equipped, two-desk laboratory, administrative office, and private office near a retirement community. Doctor retiring, 28 years in the same location.

**NEW LISTING - \$275,000 - Perio Practice in Coastal Orange County**, Southern California with five (5) operatories, lab, sterilization area, business office, private office in a professional building. Great location. Seller is retiring with 33 years of goodwill. Call our office for more information.

**PRICE REDUCTION - \$300,000 - General Dentistry Practice in Los Alamitos**, Orange County, Southern California with seven (7) operatories, sterilization room, wet lab, business office, private office, staff lounge. Located on a busy street with plenty of frontage.

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C.E., CONTINUED FROM 954

TOPIC	DATE		LOCATION	COST	UNITS
<b>SAN GABRIEL VALLEY DENTAL SOCIETY</b>					<b>sgvds.org</b>
Management of Orofacial Pain / TMD: Evidence vs. Eminence	April 24	Charles McNeill, DDS, FACD, FICD	Sacramento	\$174 member	4
Houston, We have a Problem — IT Security, Data Recovery, HIPAA Compliance	May 1	Jonathan Szymanowski, DMD, MMSc	Sacramento	\$69 member	2.5
Baby Steps: Infant and Preschool Dental Care for the General Practitioner	May 14	Greg Psaltis, DDS	Sacramento	\$60 member	2
Licensure Renewal: California Dental Practice Act and Infection Control	May 31	Marcella Oster, RDA	Sacramento	\$139 member	4
<b>SAN FERNANDO VALLEY DENTAL SOCIETY</b>					<b>sfvds.org</b>
Awaken the Instinctive Leader in You and Great Phone Skills	Jan. 16	Katherine Eitel	Van Nuys	\$175 CDA member; \$300 nonmember; \$90 ADHP and student; \$75 retired member	7
Endodontics for the General Dentist	Feb. 20	John West, DDS, MSD	Van Nuys	\$175 CDA member; \$300 nonmember; \$90 ADHP and student; \$75 retired member	7
Esthetic materials, Techniques and Prevention	March 27	Dr. Gerard Kugel, DMD, MS, PhD	Van Nuys	\$175 CDA member; \$300 nonmember; \$90 ADHP and student; \$75 retired member	7
CA Dental Practice Act, Infection Control and OSHA Refresher	April 17	Diane Morgan Arns	Van Nuys	\$175 CDA member; \$300 nonmember; \$90 ADHP and student; \$75 retired member	7
Dental Materials	June 19	Ed Hewlett, DDS	Van Nuys	\$175 CDA member; \$300 nonmember; \$90 ADHP and student; \$75 retired member	7
<b>SAN FRANCISCO DENTAL SOCIETY</b>					<b>sfds.org</b>
CPR Renewal	Jan. 30	Adrian Curry, EMT	San Francisco	\$65 (\$12 extra for required CPR book)	4
General Membership CE Meeting — Non-Surgical Perio	Feb. 7	Mark Ryder, DMD	TBA	\$74	2
Infection Control/ Bloodborne Pathogens/ HazCom Refreshers	Feb. 22	Marcella Oster, RDA	San Francisco	\$95	4
California Dental Practice Act	Feb. 22	Marcella Oster, RDA	San Francisco	\$60	2
CPR Renewal	Feb. 27	Adrian Curry, EMT	San Francisco	\$65 (\$12 extra for required CPR book)	4
CPR Renewal	April 24	Adrian Curry, EMT	San Francisco	\$65 (\$12 extra for required CPR book)	4
General Membership CE Meeting — Endodontic Advances for the General Practice	May 2	Ove Peters, DMD, MS, PhD	TBA	\$74	2
CPR Basic Life Saving	May 18	Adrian Curry, EMT	San Francisco	\$95 (\$12 extra for required CPR book)	4
California Dental Practice Act	May 24	Marcella Oster, RDA	San Francisco	\$60	2
Infection Control/ Bloodborne Pathogens/ HazCom Refreshers	May 24	Marcella Oster, RDA	San Francisco	\$95	4
CPR Renewal	June 19	Adrian Curry, EMT	San Francisco	\$65 (\$12 extra for required CPR book)	4



TOPIC	DATE		LOCATION	COST	UNITS
<b>SAN GABRIEL VALLEY DENTAL SOCIETY</b>					<b>sgvds.org</b>
Infection Control and California Dental Practice Act	Jan. 22	Leslie Canham	Alhambra	\$65 member; \$100 nonmember	4
New Advancements in Bonded Restorations	Feb. 19	Sillas Duarte, DDS	Alhambra	\$65 member; \$100 nonmember	3
Stop Cancellations — Practice Management	March 19	Steve Anderson	Alhambra	\$65 member; \$100 nonmember	3
Oral Pathologic Lesions	April 16	David Gilbert, DDS	Alhambra	\$65 member; \$100 nonmember	3
<b>SAN JOAQUIN DENTAL SOCIETY</b>					<b>sjds.org</b>
Sleep Medicine	Feb. 21	Deepak Shrivastava, MD, FAASM, RPSGT	Stockton	TBD	2
Restorative Dental Materials	March 15	James Dunn, DDS	Stockton	TBD	7
Endodontic Forum	April 23	Local Member Endodontists	Lodi	TBD	5
Caries Assessment and Management by Risk Assessment	May 23	Jean Creasey, DDS	Murphys	TBD	2
<b>SAN MATEO COUNTY DENTAL SOCIETY</b>					<b>smcds.com</b>
General Membership Meeting	Jan. 24	TBA	Foster City	\$45 member; \$55 nonmember	3
BLS CPR Renewal Course	Jan. 29	Stephen R. John, DDS	Redwood City	\$45 member; \$60 nonmember	4
CBCT Scans: Results Interpretation	Feb. 21	Gurminder Sidhu, BDS, DDS, MS	Foster City	\$45 member; \$55 nonmember	3
BLS CPR Renewal Course	Feb. 25	Richard A. Fagin, DDS	Redwood City	\$45 member; \$60 nonmember	4
Tax Strategies	Feb. 28	Kelly Clark	Redwood City	\$10 member; \$25 nonmember	0
BLS CPR Renewal Course	March 19	Stephen R. John, DDS	Redwood City	\$45 member; \$60 nonmember	4
Implant Complications	March 28	Anthony Pogrel, DDS	Foster City	\$45 member; \$55 nonmember	3
BLS CPR Renewal Course	April 8	Richard A. Fagin, DDS	Redwood City	\$45 member; \$60 nonmember	4
Medical Infections of Dental Origin	April 18	Scott Smith, MD	Foster City	\$45 member; \$55 nonmember	3
BLS CPR Renewal Course	April 23	Stephen R. John, DDS	Redwood City	\$45 member; \$60 nonmember	4
BLS CPR Renewal Course	May 13	Richard A. Fagin, DDS	Redwood City	\$45 member; \$60 nonmember	4
General Membership Meeting	May 23	TBA	Foster City	\$45 member; \$55 nonmember	3
BLS CPR Renewal Course	May 13	Richard A. Fagin, DDS	Redwood City	\$45 member; \$60 nonmember	4
BLS CPR Renewal Course	May 28	Stephen R. John, DDS	Redwood City	\$45 member; \$60 nonmember	4
BLS CPR Renewal Course	June 10	Richard A. Fagin, DDS	Redwood City	\$45 member; \$60 nonmember	4

TOPIC	DATE		LOCATION	COST	UNITS
<b>SANTA BARBARA VENTURA COUNTY DENTAL SOCIETY</b>					<a href="http://sbvcds.org">sbvcds.org</a>
TBD	March 22	Douglas A. Young, DDS, MS, MBA	Thousand Oaks	\$185	7
Member Benefit Day	May 3	Noel Kelsch, RDH; Jason Wood, Esq.	Oxnard	TBD	TBD
Aging and Oral Systemic Disease; Geriatrics Dentistry; Know your Audience	June 7	Eric Shapira, DDS, MAGD, MA, MHA	Oxnard	\$185	7
<b>SOUTHERN CALIFORNIA OROFACIAL ACADEMY</b>					<a href="http://socalorofacial.org">socalorofacial.org</a>
Southern California Orofacial Academy 11th Annual Scientific Meeting	April 17	Alan S. Herford, DDS, MD; Peter K. Moy, DMD	Los Angeles	\$390	8
<b>TRI-COUNTY DENTAL SOCIETY</b>					<a href="http://tcds.org">tcds.org</a>
Composites	Jan. 17	Phil Maldonado, DDS	Riverside	Early bird: \$45 member; \$55 nonmember. After Jan. 1: \$20 more	2
Hiring to Firing: If It Were Only That Simple	Jan. 17	Katie Fornelli	Riverside	Early bird: \$45 member; \$55 nonmember. After Nov. 1: \$20 more	2
Hidden Pathology and Cone Beam CT and Dentist's Responsibility	March 14	Bruno Azevedo, DDS, MS	Riverside	Early bird: \$45 member; \$55 nonmember. After March 1: \$20 more	2
<b>TULARE-KINGS DENTAL SOCIETY</b>					<a href="http://tkdentalsociety.com">tkdentalsociety.com</a>
Aesthetic Restorative Dentistry, The Economy and Pretty Dental Pictures	Feb. 15	James R. Dunn, DDS	Visalia	TBA	7
Ensuring a Safe Workplace: Regulatory Compliance Manual Workshop	March 14	Marcella Oster, RDA	Visalia	TBA	2
Esthetic Anterior and Posterior Indirect Restorations from A to Z	April 19	Edward McLaren, DDS	Visalia	TBA	7
Bio-Integrated Restorative Dentistry	May 9	Costin Marinescu, DDS	Visalia	TBA	2
<b>UCSF FRESNO</b>					<a href="http://fresno.ucsf.edu/continuing_ed">fresno.ucsf.edu/continuing_ed</a>
Implant Prosthetics in the Aesthetic Zone	March 15	Todd Schoenbaum, DDS	Fresno	\$155 dentist; \$129 RDA/CDT; \$109 RDH; \$96 resident	7
New Materials in Restorative Dentistry	April 26	Marc Geissberger, DDS	Fresno	\$155 dentist; \$129 RDA/CDT; \$109 RDH; \$96 resident	7
California Dental Practice Act	May 20	Arthur Schultz, DDS, JD	Fresno	\$80	4
Lasers 2013	June 21	Don Coluzzi, DDS	Fresno	\$155 dentist; \$129 RDA/CDT; \$109 RDH; \$96 resident	7
<b>UNIVERSITY OF CALIFORNIA LOS ANGELES SCHOOL OF DENTISTRY CONTINUES</b>					<a href="http://dentistry.ucla.edu/continuingeducation">dentistry.ucla.edu/continuingeducation</a>
RDAEF2: Module 3	Jan. 19-20, Jan. 26-27, Feb. 9-10, Feb. 16-17, March 9-10, March 16-17, March 23-24, April 6-7, 20-21	Richard Stevenson, DDS; Cristina Lopez, DMD	Los Angeles	\$5,595 RDA; \$3,995 RDAEF	186 units RDA; 142 units RDAEF
Sleep Medicine Mini-Residency	Feb. 1-2, March 1-2, April 5-6, May 3-4, June 7-8	Robert Merrill, DDS, MS; Dennis Bailey, DDS; and others	Los Angeles	\$5,995	60
TMD/OFP Mini-Residency	Feb. 8-9, March 8-9, April 12-13, May 10-11, June 14-15	Robert Merrill, DDS, MS	Los Angeles	\$3,950	68

TOPIC	DATE		LOCATION	COST	UNITS
Social Media and the Internet: A Hands-on Course on How to Connect, Engage and Grow Your Practice	Feb. 9	Rich Hirschinger, DDS, MBA	Los Angeles	\$198	7
Hypnosis and its Application to Dentistry	Feb. 9-10	Don Goodman, PhD, CCHt	Los Angeles	\$495	14
Advanced Technique and Updates for your Implant Practice	Feb. 23	George Perri, DDS; Shariar Parvizpour, DDS	Los Angeles	\$198	7
RDA Required Course – Pit and Fissure Sealants	Feb. 23-24	Cara Batson RDA, Charlene Flowers RDA	Los Angeles	\$575	16
1st Annual Byoung-In Suh Distinguished Lecture in Restorative Dentistry	March 2	Byoung-In Suh, PhD; Richard Stevenson, DDS	Los Angeles	\$198	7
Advanced Anterior Esthetics	March 8-10, April 19-21	Jeff Morley, DDS; Todd Schoenbaum, DDS, FAGD, FACD	Los Angeles	\$5,995	46
Re-Certification in Pediatric Oral Sedation	March 9	Steven Ganzberg, DMD; Christine Quinn, DDS, MS; and others	Los Angeles	\$295	8
UCLA Endodontic Continuum	March 14-17, April 4-7	Bernice Ko, DDS; Mo Kang, DDS, PhD, MS; and others	Los Angeles	\$3,995	58
Evidence-Based Dentistry for the Clinician	March 23	Janet Bauer, DDS, MS	Los Angeles	\$198	7
California Dental Practice Act and Infection Control	March 30	Andy Wong, DDS	Los Angeles	\$135 dentist; \$95 auxiliary	4
Digital Dentistry	March 30	Richard Stevenson, DDS; Todd Schoenbaum, DDS, FAGD, FACD	Los Angeles	\$398	8
Dental Ethics for a Changing Profession	April 6	Gary Herman, DDS	Los Angeles	\$198	7
Update on Removable Partial Denture Therapy	April 6	Ting Ling Chang, BDS; Kumar Shah, BDS	Los Angeles	\$198	7
Moderate Sedation with Multiple Oral and Parenteral Agents	April 19-21, May 15-19	Steven Ganzberg, DMD; Christine Quinn, DDS, MS; and others	Los Angeles; Vancouver, WA	\$11,955	80
UCLA Implants A to Z 2013	8 sessions: April 20; May 18, June 22, July 13, TBA: Aug., Sept., Oct., Nov.	George Perri, DDS; Shariar Parvizpour, DDS; Sanda Moldovan, DDS, MS; and others	Los Angeles	\$3,995	56
Real-World Implementation of the Medical Model in Caries Assessment and Management: CAMBRA A Minimally Invasive Approach	April 27	Richard Stevenson, DDS, Mark Cruz, DDS	Los Angeles	\$298	8
RDA Required Course – Infection Control	April 27	Cara Batson, RDA, Charlene Flowers, RDA	Los Angeles	\$250	8
Dental Photography Workshop and Digital Presentations for Esthetic Treatment Planning	June 1	Brian LeSage, DDS	Los Angeles	\$395	7
Advanced MicroEndodontics, Molar-Endo with Hands-on Workshops and Patients	starts June 8 (5 sessions)	Mo Kang, DDS, PhD; Shane White, BDS, PhD; Nadia Chugal, DDS, MPH; and others	Los Angeles	\$2,995	35
The UCLA 2013 Restorative Update	June 15	Richard Stevenson, DDS; Todd Schoenbaum, DDS, FAGD, FACD	Los Angeles	\$298	7
Advanced Implant Therapy	June 17-21	Henry Takei, DDS, MS; Sascha Jovanovic, DDS, MS, and others	Los Angeles	\$3,995	40
California Dental Practice Act and Infection Control	June 29	Andy Wong, DDS	Los Angeles	\$135 dentist; \$95 auxiliary	4

TOPIC	DATE		LOCATION	COST	UNITS
UNIVERSITY OF CALIFORNIA LOS ANGELES SCHOOL OF DENTISTRY <small>CONTINUED</small>			<a href="http://dentistry.ucla.edu/continuingeducation">dentistry.ucla.edu/continuingeducation</a>		
Pre-Conference Hawaii 2013	June 29	Scott Keith, DDS, MS	Lanai, HI	\$198 dentist; \$98 auxiliary/staff	4
UCLA Aesthetic Continuum 2013	July 18-21	Brian LeSage, DDS; Jimmy Eubank, DDS; Jeff Morley, DDS, and others	Los Angeles	\$6,995	90
Pediatric Clinical Tips to Achieve Excellence in Your Everyday General Practice	June 1	Daniela Rodrigues Silva, DDS, MS	Los Angeles	\$198 dentist; \$98 auxiliary	7
UNIVERSITY OF CALIFORNIA SAN FRANCISCO			<a href="http://dentistry.ucsf.edu/cde">dentistry.ucsf.edu/cde</a>		
Complete Denture	Feb. 1	Frederick Finzen, DDS; Mark Dellinges, DDS	San Francisco	TBA	7
20th International Symposium in OMFS Pre-Conference, Clinicopathological Correlations	Feb. 2	MA Pogrel, DDS, MD; Richard Jordan, DDS, MSc, PhD	Kauai, HI	\$245	4
Confronting the Challenges in Oral Surgery Today, 20th International Symposium	Feb. 4-8	MA Pogrel, DDS, MD	Kauai, HI	\$1150 dentist; \$795 auxiliary	20
UCSF/UOP Island Dental	Feb. 11-15	Various	Maui, HI	\$695 dentist; \$475 auxiliary	20
Renewal: Pediatric Oral Conscious Sedation	Feb. 22	Thomas Lenhard, DMD	San Francisco	TBA	7
Periodontal Update	Feb. 23	Paulo Camargo, DDS, MS	San Francisco	TBA	7
Geriatrics and Elder Abuse	March 1	Susan Hyde, DDS, MPH, PhD; Mary Twomey, MSW	San Francisco	TBA	7
Medical Emergencies	March 16	Mehran Hossaini, DMD	San Francisco	TBA	7
Thomas Curtis Memorial Lecture — Prosthodontics	April 13	HP Weber, DMD	San Francisco	TBA	7
UCSF Dental Alumni Meeting	April 26-27	Various	San Francisco	TBA	15
TMD and Orofacial Pain	May 17	Jeffrey Okeson, DDS	San Francisco	TBA	7
Ceramic Bonded Restorations	June 1	Nasser Barghi, DDS	San Francisco	TBA	7
Perio/Restorative	June 15	Arun Sharma, BDS, MS; Craig Yonemura, DDS	San Francisco	TBA	7
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Licensure in a Day: Infection Control, CA Dental Practice Act, OSHA Refresher	Jan. 11	Marcella Oster, RDA	Culver City	\$195 ADA member dentist; \$295 nonmember dentist; \$95 staff	6
Systemic Perio: Where are the links?	Feb. 5	Joan Otomo-Corgel, DDS, MPH	Culver City	\$75 ADA member dentist; \$120 nonmember dentist; \$60 non-dentist	3
Upper Airway Resistance Syndrome: Screening, Diagnosis and Management	May 7	Mark A. Cruz, DDS	Culver City	\$75 ADA member dentist; \$120 nonmember dentist; \$60 non-dentist	3
Dental Implants	June 25	Bach T. Le, DDS, MD	Culver City	\$75 ADA member dentist; \$120 nonmember dentist; \$60 non-dentist	3



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A look into the latest dental and general technology on the market.

**Evernote** (*free*) is a note-taking app that has been around for some time and has matured over the years to become highly useful. You can create individual notes and input almost anything you desire into them from pictures to important websites you don't want to forget. You also can include tags in your notes so that you can sort them based on your assigned keywords. What really separates this app from the rest is the fact that you can synchronize your notes with virtually any computer or mobile device (Mac, Windows, iOS, Android, Blackberry, Windows Phone 7 and WebOS) so you can take your notes with you wherever you go and not forget a thing. On the downside, because of an increase in the functionality of this app, it has become slightly more complicated to use. However, if you stick to the basics of what this app does (simple, fast note taking), you should enjoy seamless productivity among your devices. A free Evernote account is required to use this app.

**Tooth Brushing Motivator** (*Dr. Illing, \$2.99*) maps out where you need to brush and for how long in each spot over two to three minutes of brushing time. The idea is simple – make sure you brush adequately in each area of your mouth. The app motivates the user to do so by supplying a tooth grid that color-codes quadrants of teeth. As you brush, a timer makes sure you brush long enough and finishes with a motivational, “your teeth are clean now!” The timer is accurate and a nice benefit of Tooth Brushing Motivator is the iPhone does not automatically go into sleep mode while in use, which is good because you do not have to hold the phone while you are brushing. There is an option to play music while you brush but it doesn’t always work. You also get the option to brush for two or three minutes and select left- or right-handed. Other than that, the app is pretty bare bones.

**Wunderlist** (6 Wunderkinder, free) is a task manager app that helps you organize your life and its many to-do's. You can create individual tasks on the fly and sort them into custom lists. For each task, you can assign a due date and bookmark it if you always want to see it at the top of your list. If you have a task that is due today, Wunderlist will send you an e-mail reminder that you have something to complete. Among the other features that this app provides is the ability to share your lists with others using e-mail, Facebook, or Twitter. Your tasks and to-do lists can be synchronized with virtually any computer or mobile device (Mac, Windows, Linux, iOS, Android, Blackberry and Windows Phone). This app is one of the less-complicated task managers available and the only one that can be used seamlessly across multiple platforms and devices, making it the most easy to use and most versatile. A con of Wunderlist is the inability to add tags to your tasks, but, according to the developer, this function will be implemented in a future release. A free Wunderlist account is required to use this app.

**JabberMouth** (*Pixel Research Labs, 99 cents*) allows you to overlay your mouth on any photo, make the person (or animal) in the photo talk in a video format and share it with others. Want to make your dog talk? Want to make your own talking baby commercial? It is all there and it works pretty well. JabberMouth gives you the option to take a photo, choose a photo from your library, or even search the Internet (which is very user friendly) for a photo to use. Once the photo is uploaded, you line the subject's mouth up with your mouth and hit record. You can move your mouth anywhere on the photo and increase or decrease the size of your mouth to fit to scale. Then you are free to e-mail your video to your friends or share it on Facebook. It would be nice if it gave you the option to put the video on YouTube or share it on Twitter. The ability to add music would have been a good feature as well. JabberMouth does exactly what it advertises and provides the opportunity for some goofy humor that will make your friends and family chuckle.

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*John Knipf & Robert Palumbo*

## LOS ANGELES COUNTY

**BELLFLOWER** (Pract. & Bldg) - Long established practice w/ 5 eq ops in a single story bldg. Some HMO. Corner location ID #4197.  
**CULVER CITY** - Leasehold & Equip Only! 10 eq op office in a single story bld. In residential area. Heavy traffic flow. ID #4261.  
**LA PUENTE** (GP) - 5 eq op office located in single story bldg. Seller open to sell bldg. Great starter office with great visibility ID #4253.  
**LONG BEACH** (Ortho) - 46 yrs of goodwill. Located in a 3 story medical bldg. 4 chairs in open bay. In residential area. ID # 4255.  
**LOS ANGELES** - General Practice w/ 18 yrs gdwll in free standing bldg with 5 spacious ops. Monthly revenues of \$30K/mo. ID# 4113.  
**LOS ANGELES** (GP) - State-of-the art off w/ 34 yrs gdwll on one of the busiest blvds. Has 4 eq. ops w/. Dentrux software. ID#4147  
**MALIBU** (GP) - Turn-Key. Located in very desirable upscale area w/ excellent exposure & visibility. Has 4 ops. Low sales price. ID 3651.  
**SAN GABRIEL** (Ortho/Endo/Perio/O.S) - Practice consist of 3 chairs in open bay & 1 fully eq op in a corner bldg. Great signage. ID#4139.  
**WESTLAKE VILLAGE** - Equip & Charts! Beautiful office set up for Paperless / Digital. Located on 2nd floor of Med bldg. ID #3211.  
**WESTWOOD** (GP) - With over 30 years of goodwill this modern designed office is in a 12 story med/dent bldg. 2 eq ops. ID # 4181.  
**WHITTIER** - Estab. in 1955. Large state-of-the-art off. located in a single story strip mall. Net \$484K. Mo. revenues of \$127K. ID #4259.

## ORANGE COUNTY

**FOOTHILL RANCH** - Modern contemporary designed office w/ 6 fully eq ops. Established in 2006. Mo. revenues of \$34K. ID #4209.  
**IRVINE** - Located in busy shopping cntr w/ lots of foot traffic. Modern designed w/ 4 eq. ops. Over 10 years of goodwill. ID #4053.  
**LADERA RANCH** (Ortho) - Beautiful state-of-the-art office w/ 5 eq chairs in open bay. Established in 1978. Med/Dent Bldg. ID #4209.  
**LAGUNA HILLS** - General practice located in 2 story busy shopping center. 19 yrs gdwll. 4 eq. ops. NET OF \$230K. ID # 4155.  
**ORANGE** - Fee for service practice open 4 days/wk located in a single story med center w/ 4 eq. ops., on a 1,040 sq. ft. suite. ID #3531.  
**SAN JUAN CAPISTRANO** - Equip & Charts! Modern designed practice w/ 3 fully eq. ops. in a 1,113 sq. ft. suite. ID #3071  
**SANTA ANA** (GP) - Turn-Key Location. Absentee owner. Long established practice w/ 4 eq ops. Seller owns Bldg. ID #4071.  
**SANTA ANA** - Leasehold & Equip Only! Well designed practice consists of 4 eq ops in multi story med bldg. Excellent lease. ID #4221.  
**TUSTIN** - Leasehold & Equip Only! Beautiful state-of-the-art off. Great for GP or Spec. 5 eq ops/3 plmbd not eq for expansion. ID #4225.  
**TUSTIN** - Leasehold & Equip Only! Great office located in a busy shopping center with heavy traffic flow. 3 eq ops. ID # 4273.

## RIVERSIDE / SAN BERNARDINO COUNTIES

**LA QUINTA** - Price Reduced. Leasehold & Equip Only! Located in strip shopping center W/ 3 eq. ops, 1,000 sq. ft. ste. ID#4063  
**MURRIETA** (GP) - Beautiful office w/ 3 eq ops surrounded by major anchor tenants. Some Capitation. 4 day/wk office. ID #4247  
**RIVERSIDE** (GP) - Established in January 2012 in busy shopping center. 4 fully eq ops. In residential area. Heavy traffic flow. ID #4269.  
**TEMECULA** - Leasehold & Equip Only! Bank owned office with 2 eq. ops, 2 plumbed not eq. in a 3 story prestigious building. ID #4159  
**WRIGHTWOOD** (GP) - 21 years of goodwill. Only dentist in town. Fee for service. Consists of 4 eq ops in 1,265 sq. ft. ste. ID #4243.

## SAN DIEGO C OUNTY

**SAN MARCOS** - Leasehold & Equip Only! Modern designed offic. Established in 2007. Consists of 2 eq ops in 800sqft ste. ID #4217.

## VENTURA & KERN COUNTY

**CENTRAL COAST** - Located in a Historic Colony District on a 1 story bldg. Fee for Service. 3 eq.. ops. Proj. \$1M for 2012. ID # 4201.  
**PORT HUENEME** (GP) - Absentee Owner Practice. Established in 1980. Consists of 3 eq. ops, in a 920 sq. ft. suite. ID #4167.  
**THOUSAND OAKS** (GP) - Modern designed off. w/ 6 eq ops. Seller owns bldg/ not for sale. 50 yrs of goodwill. Absentee owner. #4257  
**VENTURA** - Turn Key office w/ 3 eq. ops. 24 years of goodwill. Located in single strip mall on one of the busiest intersections. ID #4193.

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## How to Place a Free Classified Ad

The *Journal* has changed its classified advertising policy for CDA members to place free classified ads online and publish in the *Journal*. Only CDA members can place classified ads. Non-CDA members can place display ads.

All classified ads must be submitted through [cda.org/classifieds](http://cda.org/classifieds). Fill out the blank fields provided, including whether the ad is to appear online only or online and in the *Journal*. Click "post" to submit your ad in its final form. The ad will post immediately on [cda.org](http://cda.org) and will remain for 90 days. Space permitting, your ad will run one time in the next issue of the *Journal* following the posting of your online ad. After 90 days, you will need to repost your ad if you wish to continue running it online.

Classified ads for publication in the *Journal* must be submitted by the fifth of every month, prior to the month of publication. Example: Jan. 5 at 5 p.m. is the deadline for the February issue of the *Journal*. If the fifth falls on a weekend or holiday, then the deadline will be 5 p.m. the following workday. After the deadline closes, classified ads for the *Journal* will not be accepted, altered or canceled. Deadlines are firm.

Classified advertisements categories are: Equipment for Sale, Offices for Sale, Offices for Rent or Lease, Available Positions, Opportunities Wanted, and Practices for Sale.

### How to Place a Display Ad

Non-members are welcome to place display ads. For information on display advertising, please contact Corey Gerhard at 916-554-5304 or [corey.gerhard@cda.org](mailto:corey.gerhard@cda.org).

CDA reserves the right to edit copy and does not assume liability for contents of classified advertising.

## OFFICES FOR RENT/LEASE

### OFFICE FOR RENT OR LEASE —

Newly constructed GP office in Encino with three operatories fully equipped. Subleased two to three days a week. Ideal for Endo, Perio or Oral Surgeon. Please email: [bdedental@gmail.com](mailto:bdedental@gmail.com) if interested or for more information.

**OFFICE FOR RENT OR LEASE —** Share dental office in a beautiful, bright location of North County San Diego. Right next to school (K-8). 1,000 sq. ft., 3 chairs, fully equipped, X-ray, sterilization, lab and private office. Available 2-3 days per week. Terms are

negotiable. Please contact [dentalofficespace1@gmail.com](mailto:dentalofficespace1@gmail.com) to learn more.

**OFFICE FOR RENT OR LEASE —** We're offering a great opportunity to sublease 2 operatories in our 5 operatories office with a great location just off the 5 Freeway in Irvine. The office suite is in a 3-story medical building. The operatories are plumbed and ready to add your chairs, units, and X-ray heads. There is plenty of room for your supplies and a front desk area for your use. Ideal for someone looking to cut overhead. Email us at: [russellcannondds@earthlink.net](mailto:russellcannondds@earthlink.net). Check out our website at: [www.DrRussellCannon.com](http://www.DrRussellCannon.com). Please call us at 949-552-7874.

CONTINUES ON 970

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CLASSIFIEDS, CONTINUED FROM 969

### OPPORTUNITIES AVAILABLE

#### OPPORTUNITIES AVAILABLE —

Immediate hire after working interview at fast growing dental practice in the Fremont area. We are looking for the following qualities in new hire: 1. Reliable and punctual. 2. Able to work in the front and back of a dental office. 3. Willing to learn and possess good communication skills. Previous dental experience (including taking digital X-rays) is welcome; however, we can train and provide experience in dental field. This is a great opportunity to build up strong working knowledge and skills in clinical dentistry and patient care. Please send your resume to anaghaj@yahoo.com.

#### OPPORTUNITIES AVAILABLE —

Looking for a general dentist or a specialist who would like to establish his/her own practice in my office. I am also open for another existing dental office to move into my large facility. The successful partner will be a starting or well-seasoned dentist who already has an established patient base. This could be a great opportunity for mentoring and camaraderie. My office is modern, well equipped and has a great location in Sunnyvale. We will be sharing a five operatory, 3000 sq. ft. facility. Contact sunnyvaledental@sbcglobal.net.

#### OPPORTUNITIES AVAILABLE —

Looking for a Periodontist to see our selected family practice patients for: perio surgeries, implants, perio maintenance. Will start out once per month and build from there. Please send resume and cover letter describing your situation to DrD@MyDiamondDental.com.

#### OPPORTUNITIES AVAILABLE —

Orthodontic office in Newhall, CA looking for Board Certified Orthodontist to join current practice. Contact 661-259-5959.

**OPPORTUNITIES AVAILABLE —** If you have a minimum of 4 years of post schooling experience we have a tremendous long-term opportunity in a stable yet growing private dental office in San Jose. Ideal candidates should be: Efficient treating patients without compromising quality; Experience with anterior/bicuspid root canals and simple extractions is required. Invisalign experience is a plus. Please send your resume to bayareadentist2009@gmail.com.

#### OPPORTUNITIES AVAILABLE —

New state-of-the-art general dental office in need of a well credential orthodontist 1-2 days a month. More days will be needed in the future. Partnership is a possibility. Contact vunvhuy@yahoo.com or 408-489-3177.

#### OPPORTUNITIES AVAILABLE —

Established endodontic office is seeking an individual for our full time front office position. Experience with dental insurance billing is desired, but training is available for the motivated and personable applicant. We are a low volume office that puts emphasis on a positive experience for our patients, and are seeking an individual that will contribute to this positive patient experience. If you are interested, please email your resume to dentalsteve1@yahoo.com.

**OPPORTUNITIES AVAILABLE —** Need a full time dental hygienist for a brand new digital office. Contact faribatabibi@gmail.com or 310.895.0133.

**OPPORTUNITIES AVAILABLE —** Our well established group practice is seeking an associate who desires the opportunity to become a part of our growing business model. Strong clinical and communication skills are important, and the ability to create positive relationships with patients, team members, and Partners is essential.

Our goal is to find a future partner who shares our core values of high standards and ethics, as well as a willingness to collaborate, learn, and grow. If you're a leader, and you'd like to become a part of a progressive environment in one of the most beautiful places in the world, please forward your curriculum vitae to: mpdghiring@gmail.com.

#### OPPORTUNITIES AVAILABLE — A

Periodontal Office looking for a qualified part-time or full-time DA/RDA receptionist who has enthusiastic, cheerful & friendly personality to work in front office, is willing to help out in back office with some chair-side assistance and X-rays, has good work ethics and good professional conduct, must be organized, self-sufficient, provide excellent patient care, must have excellent command of the English language. Skills required: excellent verbal and written communication skills; proficient with computers, Microsoft Office, must have current Dental Assisting Certification. Skills preferred: experience with Dentrax, with insurance billing and payments, with scheduling efficiency; coronal polishing certification is a plus. Please email resumes to info@implantesthetics.com.

**OPPORTUNITIES AVAILABLE —** Career opportunities for associate dentists are ample at Western. Dentists can enjoy a reliable, steady flow of patients, practice high quality dentistry, develop skills in all aspects of clinical dentistry and office leadership, achieve earnings levels that are among the highest in the industry for associates, and advance to managing dentist positions, where earnings potential and leadership opportunities increase even more. Western pays a guaranteed base plus incentive compensation. Contact recruiting@western dental.com.

CONTINUES ON 974



# WESTERN PRACTICE SALES

John M. Cahill Associates

## BAY AREA

**AC-085 SAN FRANCISCO-** Long established. 2<sup>nd</sup> floor. 1,433 sf overlooking Park Presidio. 4 large ops. Skylights/large windows **\$189k**

**AC-123 SAN FRANCISCO-** Located on corner store front. Busy, major thoroughfare in well-established area. 1,032 sf w/ 3 ops **\$450k**

**AG-125 SAN FRANCISCO** - Relaxed schedule (Saturdays/Sundays by appt only. Professional building, major thoroughfare, highly desirable area. 1,000 sf w/2 ops. Plumbed for 1 add'l **\$125k**

**B-9851 SAN RAMON Facility**—This opportunity will not wait! Office ~ 1,700sf w/ 3+ ops **\$219k**

**BG-106 Facility UNION CITY** -Intersection w/ monumental signage & excellent visibility. Open floor plan. 1,800sf w/ 6 fully equipped ops. New Computers and New Telephone Systems. **\$150k**

**BN-051 HAYWARD Facility** - Seller Motivated! Office is ~1000sf w/ 3 fully equipped ops. **\$150k**

**CC-056 MARIN CO-** With beautiful garden setting, this well maintained office is centrally located near popular shopping center. Easy access to Hwy 101. 1200sf w/ 3 ops. Room for 2 add'l ops **\$350k**

**CC-077 BENICIA-** Highly visible. Within walking distance of downtown. 820 sf w/2 ops **\$125k**

**CC-109 PETALUMA** - Priced for a quick sale! Reasonable overhead & below market rent. Don't miss this excellent opportunity! 2 ops. Plumbed for 3 add'l. **\$170k**

**CC-118 Vacaville - Turnkey Facility** - Midway between SF and Sacramento. Highly visible, easily accessible, attractive building w/ ample parking in growing city. 859 sf w/3 ops. Option to lease/purchase suite. **\$245k**

**D-9091 ATHERTON** -Turnkey operation 969 sf & 3 ops **Call for Details!**

**D-960 Facility only SAN JOSE** -Opportunity to purchase condo suite also! 1,158sf w/3 ops **REDUCED! NOW ONLY \$48k**

**DC-113 MILPITAS** - Seller retiring! Great location 1,009 sf w/ 3 ops. Plumbed for 1 add'l **\$140k**

**DN-112 SAN JOSE**— Established Fee-for-service practice, ~1008sf w/ 2op and plumbed for 2 add'l. **\$100k**

**DN-063 SAN JOSE** - Long-established, Popular Retail Shopping Center. 780 sf w/ 2 ops **\$70k**

## BAY AREA CONTINUED

**DG-107 Facility MOUNTAIN VIEW** - Located w/in 3 mi. from Google Headquarters. \$400k + in build-outs. Top-of-the-line, state-of-the-art, Sirona Eq w/ built-in intra-oral cameras & curing light units. 1,800 sf w/3 fully equipped ops. Plumbed for 1 add'l **\$270k**

**DG-124 MILPITAS-** Near Silicon Valley's East Foothills. Highly visible 2-story building in desirable area. 960 sf w/ 2 ops. Room for 3<sup>rd</sup> op **\$130k**

**DN-099 Facility SAN JOSE-** Ultra-modern facility. Well-established, attractive Dental Professional building complex. 1,450 sf w/5 fully equipped ops **\$125k**

**DN-084 PALO ALTO** - Drawing from an educated, upper middle class community, this facility is "move-in" ready! 700 sf w/3 ops **\$125k**

## NORTHERN CALIFORNIA

**E-8641 SACRAMENTO-FACILITY** - 2,100+ sf w/ 3 ops & plumbed for 1 add'l **\$50k**

**EN-026 ROSEVILLE**—Warm Caring Environment, ~1000sf, w/ 3 ops. **\$380k**

**EN-114 ANTELOPE FACILITY** - Location, Location, Location! This "move-in-ready" practice has 4 ops + 1 add'l. **\$120k**

**F-1013 FORTUNA**-Well respected FFS GP. Loyal stable patient base. 1,000 sf w/ 3 ops **\$195k**

**FN-087 LAKE COUNTY**—Quality practice w/ friendly staff! ~2400sf w/3+ops. **\$775k**

**G-883 CHICO VICINITY**— Quality FFS GP. Attractive Prof Plaza. 1,990 sf w/ 5 ops **\$495k**

**G-998 CHICO/PARADISE**—Breathtaking natural beauty! ~898sf, 3 ops. **Now \$240k**

**GN-058 YUBA CITY**— Emphasis on quality dental care / patient comfort, 1,704sf w/ 4 ops **\$450k**

**GN-075 YUBA CITY**—Well established practice w/ loyal patient base! ~3000 sf w/ 8 ops. **\$250k**

**GN-103 CHICO**—Successful, highly esteemed practice! ~3500sf, 8 ops + 2 addtl. **\$850k**

**HN-059 LASSEN CO**-Quality, well-established, family-oriented practice. 1600sf w/3 ops **\$120k**

**FN-088 SISKIYOU CO**— Family Friendly Location! ~1300sf w/ 2 ops. **\$85k /Real Estate: TBD**

## CENTRAL VALLEY

**I-9721 STOCKTON** —Prof. complex 1,450 sf w/3 ops & plumbed for 1 add'l op. **\$75k.**

**I-1005 SAN JOAQUIN VLY-** Long-established High-End . 2,500+ sf w/ 6 ops **\$650k**

**IC-066 TRACY** - Modern, paperless, FFS practice. Excellent visibility! 1,600 sf w/ 4 spacious, fully-equipped ops; plumbed for 2more **\$495k**

**IG-067 STOCKTON-** Fully computerized, paperless, digitalized. 5,000 sf w/10ops **\$475k**

**IN-102 STOCKTON-** Seasoned staff. Unlimited potential w/increased marketing & work schedule! 1,100 sf 2 ops **REDUCED! \$80k**

**IG-129 MERCED**— Attractive, modernly appointed. Great location! Grossed more than \$630k in 2011. ~1550 sf /3 Ops +2 add'l **\$289k**

**J-1000 TULARE**— Highly visible location! ~1650sf w/ 4ops **Practice: \$465k /Real Estate: \$249k**

**J-1001 LINDSEY**— All American City! Conveniently located ~3,380sf w/5ops. **\$220k**

**JN-086 FRESNO FAC**—Low Rent/Overhead! <1yr old, ~1200sf, 3 ops + poss. 4th! **\$139K**

## SPECIALTY PRACTICES

**I-7861 CTRL VLY ORTHO-** 2,000sf, open bay w/8 chairs. FFS. 60-70 patients/day. Prof Plaza. **\$370k**

**I-9461 CENTRAL VALLEY/ORTHO** - . ~ 1,650 sf w/5 chairs/bays + (2) add'l plumbed. **\$180k**

**G-975 CHICO ORTHO**—Denti-Cal patient base. ~ 900 sf w/ 2 + ops. **\$90k**

**BC-033 ALAMEDA CO ORTHO** — ~ 50 pats/day. Highly visible. 1,250 sf w/4 Chairs/Bays **\$450k**

**EN-089 ORTHO- ROCKLIN AREA** - Contracted as a Preferred Provider w/one of the largest Medical Systems in area. Large, stable referral base. 1,500 sf w/3 chairs/bays. **\$350k**

**AG-096 ORTHO- PACIFICA** - Exc location, easy accessibility, solid referral base. Excellent opportunity for a practice merger or secondary office. 1,400 sf w/5 chairs. **REDUCED! \$178k**

**CG-105 ORTHO VACAVILLE** - Strong, loyal, widespread referral base. 30+ pats/day w/ 5-6 new starts/mo. Great location! 2,000 sf w/ 4 chairs/bays **\$280k**

**GN-117 ENDO SACRAMENTO/NORTH VALLEY** - Highly esteemed, FFS, **Endo** practice sets the bar for other practices! Office consist of ~2000sf w/3ops. **\$310k**

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- **AMADOR COUNTY:** For Sale-General Dentistry Practice. Owner retiring. 2011 gross receipts of \$710K+. There are 4 1/2 to 5 1/2 days of hygiene on a four day week. This well designed and spacious 2,400 sq. ft. office includes 5 ops, Laser, Intra-oral camera, Dexis Digital X-ray, and Pano. Almost paperless. Av. age of dental equipment is less than 5 years. Abundant recreational opportunities are available close by. #CA510
- **ANAHEIM:** For Sale-General Dentistry Practice. This 3 op had \$253,000 in collections in 2011. There are 3 ops in this 864 sq. ft. office with 1.5 days of hygiene. Owner works 3 days per week. No welfare or 401k. Laser, Dentrix Software and Intra-Oral Camera.
- **BISHOP:** For Sale-General Dentistry Practice & Building. After 29 years in the same location this retiring dentist is selling both his practice and building. Collections were \$1,000,243 in 2011 with \$387,000 adjusted net income. There are 6 days of hygiene in this 5 op., 1,800 sq. ft. building. 100% financing available for both building and practice. Owner has reduced price below valuation price. #14390
- **CHICO:** For Sale-General Dentistry Practice. The collections in 2011 were \$1,209,207. There are 7 days of hygiene in this 5 op., 2,400 sq. ft. office. Equipment includes Laser, Intra-Oral Camera, new Cone Beam X-ray and Dentrix software. This excellent practice has 1,824 active patients with 12 new patients a month. Owner will consider an Associate to Buy-In position leading to the purchase of this practice. #14392
- **CHULA VISTA:** For Sale-General Dentistry Practice and Building. **DECEASED DENTIST** as of March 25th, 2012. This beautiful 11 op. office located in a highly visible prime area in Chula Vista, had collected over \$1,684,000 in 2011 and \$1,730,000 in 2010. There are 5 days of hygiene with approx. 30 new patients per month. Lasers, Intra-Oral Camera, Pan-Ceph, etc. Practice has been in this location since 1998. 100% financing available for practice and building. Staff will stay. #14394
- **EAST BAY:** For Sale-ENDODONTIC PRACTICE. The adjusted net income was \$186,000 in 2011 in this 3 operator, 1000 sq. ft. office. Includes Microscope, X-ray Scanner and PBS software. Transfer of referral base should be excellent. Ideal office for new endodontist or as a satellite practice for established practitioner. Dr. is retiring.
- **FRESNO:** For Sale-General Dentistry Practice: \$935K in collections in 2011, w/adjusted net income of \$337K. Office is 2,300 sq. ft. and is located in north Fresno in a highly visible professional office complex on a main thoroughfare. There are 6 equipped operatories, owner reports average age of equipment is 4 years. Practice has been operating in present location for over 20 years. Eaglesoft software, owner is retiring. #CA502
- **FRESNO:** For Sale-General Dentistry Facility. One of the best opportunities this year. This 3 op dental office comes equipped. It is in a great location and has about 200 active patients. Owner is in the process of completing his Orthodontic training and will work in the office 5 days a month. Complete pictures of the office and an inventory list of included furniture and fixtures are available. Everything included for only \$85,000 You can't afford to pass this up. #14383
- **GRASS VALLEY:** For Sale-General Dentistry Practice. Gross Receipts of \$491K with an adjusted net income of \$130K. Overhead 73%. Office leased 1,555 sq. ft., 4 equipped operatories, 5 available. Laser, Intra-oral Camera, Cerec, & Eaglesoft Software. Owner would like to retire. #14379
- **GRASS VALLEY:** For Sale-General Dentistry Practice. GR 545K 3 days/wk (4 avail). 3 hygiene days/week. 5 Ops (6 Avail) 1,950 sq. ft. Refers out most/all Ortho, Perio, Endo, Surgery. Office has Laser, Intraoral Camera, Pano, & Dentrix Software. Owner retiring. #14372.
- **GRASS VALLEY:** For Sale-General Dentistry Practice. Owner relocating. 2011 gross receipts \$505K on 4 days per week with 5 days of hygiene. This well-established practice with approximately 1,300 active patients is located in an 1,100 sq. ft. office with 4 ops, Dentrix software, Panoramic X-ray, Cerec, Intra-oral Camera, and X-rays in all ops. #CA509
- **GRASS VALLEY:** For Sale-General Dentistry Practice. Owner retiring. Well-designed 1,550 sq. ft. office with 4 ops plumbed, 3 ops furnished. Gross Receipts for 2011 were \$309K on easy 3 days/wk with low (47%+) overhead. Practice refers out Endo, Perio, Surgery & Ortho. Pano, PBS software. May be able to merge with another existing practice that will also be for sale in the near future. This merger would result in \$800,000 gross annually. #CA503
- **GREATER CHICO/YUBA CITY:** For Sale-General Dentistry Practice. 2011 GR \$592,520 on 4 days. 1,200 sq. ft. office with 4 equipped ops. Intra-Oral Camera, Pano, 1,100+ patients. Owner retiring after 33+ years in this picturesque and prosperous community with abundant recreation, close to the mountains and near one of the largest lakes in N. CA. #14359
- **GREATER SACRAMENTO:** For Sale-Periodontal Practice: Retiring owner is the only Periodontist in a community of 50+K with a draw area of 100K. Implant
- experience a must. Great opportunity to work closely with a Prosthodontist and an Endodontist. Nicely appointed 1,500 sq. ft. office with 5 operatories, Digital X-rays and Dentrix software. 2011 gross receipts of \$719K. #CA500.
- **HAWAII (MAUI):** For Sale-General dentistry practice. Gross Receipts of \$636K. Office has four equipped operatories in 1198 sq.ft. Pano, Laser, I.O. Camera, Fiber Optics, 2 1/2 days of hygiene. Owner retiring: Don't miss this opportunity to live and work in paradise. #20101
- **HAYWARD:** For Sale-General Dentistry Practice. This practice consists of 1,600 sq ft with 4 treatment rooms in an excellent location. 2010 Gross was \$501,000 with a \$228K adjusted net income. Dental Vision software, Average age of equipment is 8 yrs. Approximately 1,200 active patients.
- **LANCASTER:** For Sale-General Dentistry Practice. This 4 operator office is located in 2,360 Sq Ft on the second floor of an attractive Medical Dental office building. Gross receipts were \$676,000 with a \$174K adjusted net income. Dentist is retiring after 39 years. 4 days of hygiene. Additional operatories could be added to existing space. Great location. #14376.
- **LAS VEGAS:** For Sale-General Dentistry Practice. This 4 operator practice is in a great location in a high-end professional building with a view of the city of Las Vegas. It is equipped with an Intra-oral camera, Pano, Laser, and Dentrix software. There are 2 days of hygiene. The staff is well trained to efficiently run this low overhead office with great potential for further growth, 2011 gross receipts were \$727K with adj. net income of \$331K. Doctor moving out of state. #NV500
- **LEMOORE/HANFORD AREA:** For Sale-General Dentistry Practice & Building. Owner has worked in this location since 1971. Gross Receipts were \$378K with \$139K adj. net income. There are 3 equipped operatories and 3 days of hygiene. Purchase of the building is optional to the Buyer. 100% financing is available for both building and practice. Excellent opportunity for new grad or satellite practice. #14375.
- **MERCED:** For Sale-General Dentistry Practice. This is a tastefully done, 4 op., 1,550 sq. ft. office with 4 and 1/2 days of hygiene/week. All equipment is less than 10 years old and includes 2 Lasers, Intra-oral Camera, Panoramic X-ray, Digital X-rays, and Dentrix Software. Molar endo and involved oral surgery cases referred out. Basic general (non-amalgam) type dentistry. 2011 gross was \$878,000 with 4 weeks out as a result of a medical issue. 2010 collections were \$956,000. Excellent location. Seller retiring. #CA512
- **MILLBRAE:** For Sale-General Dentistry Practice. This beautiful, well-established office is located on the main

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Transitions Consultant  
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thoroughfare of the North Peninsula, offering great exposure that generates 25-30 new patients per month. 5 treatment rooms (6th plumbed) in approx. 1,500 sq. ft. equipped with Digital Pan, Digital Imaging and Intra-Oral Camera. 2011 gross receipts of \$651,000 with \$230,000 adjusted net income. Owner is retiring. Don't delay, this won't last long! #14395

• **MODESTO:** For Sale - General Dentistry Practice. Collections have been approximately \$700K per year with a 62% overhead on 3 days per week schedule. Six days of hygiene in this 4 op. office. Eaglesoft software and Panoramic X-ray. Approximately 2,000 active patients. Perio and Endo referred out. Excellent location. #CA505

• **MODESTO AREA:** For Sale-General Dentistry Practice. Owner is a senior partner in a practice set up to share expenses and reduce overhead. Each partner has their own patients, operatories, etc. Selling partner's gross receipts in 2011 were over \$950,000 with only 54% overhead or \$443,777 adj. net income. There are 8 days of hygiene. Intra-oral camera, Panoramic X-ray, digital X-rays, and Dentrix software. Owner is retiring. #CA506

• **MODESTO-TRACY-AREA:** For Sale-Pediatric Practice. \$677,000 in collections in 2010 with a \$357,000 net income. This 3-chair office is located in approximately 1,250 sq. ft. & has recently been remodeled. Patient Base software. Office equipped for NO2 & IV sedation. Practice has operated in its present location for 20 years.

• **MOUNTAIN VIEW:** For Sale-General Dentistry Practice: This 2 day per week satellite office is located the heart of Silicon Valley, surrounded by most of Mountain View's largest employers. 2 fully equipped treatment rooms (expandable to 4), Pano, Digital Processor and Dentrix Software in approx. 1500 sq. ft. With household names as your neighbors, few opportunities are this good! #14398

• **MORGAN HILL:** For Sale-General Dentistry Practice & Building. **DECEASED DENTIST AS OF JUNE 6TH, 2012.** The office and equipment are only 5 years old. The office is beautifully decorated and efficiently laid out with 5 operatories. The condominium space is located in highly visible, upscale, professional office building. 2011 gross receipts were \$846,000. Intra-oral Camera, Panoramic X-Ray and Digital X-Ray. Staff and hygiene are working daily with out-of-the-area doctor covering. Approximately 1,700 active patients. #14399

• **NEWPORT BEACH:** For Sale-General Dentistry Practice. This 4 operator practice is located in beautiful Newport Beach and is part of a larger office complex. Gross receipts were \$490K in 2011, with an average of 20 new patients per month.

The office is 920 sq. ft. with Dentrix software, Dental laser, and up-to-date equipment. #14397

• **NORTHERN CALIFORNIA:** For Sale-Pediatric practice. Owner has operated in same location for 32 years. Approx 1,760 active pts, 1,160 sq ft. Panoramic X-Ray, Dexis Digital and Dentrix software in this 5-chair office. 2009 Gross Receipts \$713K with 48% overhead. Owner retiring. Call for Details.

• **NORTH OF SAN FRANCISCO:** For Sale - PERIODONTAL PRACTICE. Owner retiring: Great opportunity for a Periodontist with experience in dental implant placement. This well appointed practice is located in a 1,300 sq. ft. office with 4 operatories along the busy 101 corridor north of San Francisco. 2011 gross receipts of \$558,000. DSN software. Buyer will be the only full-time periodontist in an area with the population of approximately 60,000. #14396

• **ORINDA:** For Sale-FACILITY SALE. If you are thinking about relocating or building out a new office in a prime location, then you need to look at this opportunity. At half the cost or less, you can have an outstanding, fully furnished, 3 operator office (2 additional plumbed) in a great location with good parking in an upscale building. Pictures and a complete list of equipment and furnishings are available. Office is suitable for Endo, Oral Surgery, or General Dentistry. #CA508

• **ROSEVILLE:** For Sale-General Dentistry Practice. Great Location. 2009 GR \$900K with adjusted net income of \$300K. 1,975 sq. ft. with 6 ops, 8 days hygiene/wk. Digital, Intra-Oral Camera, Dentrix, Trojan, fiber optics, P & C chairs - all less than 5 years old. Owner is retiring. #14327

• **SACRAMENTO:** For Sale-General Dentistry Practice. **Ideal start-up or satellite practice.** This is a satellite practice of the owner. this is a 5 op. office that includes Intra-oral camera, Panoramic X-ray, and Soft Dent software. 2011 gross receipts were \$202,000. Average age of equipment is 5 to 10 years. Purchase price is far less than purchasing equipment and paying for leasehold improvements in a new location. This office also comes with approximately 450 active patients that provides an immediate cash flow. #CA507

• **SACRAMENTO:** For Sale-General Dentistry Practice. Gross Receipts \$546K with adjusted net income of \$159K. Office is 2,400 sq ft with 7 operatories. Practice has been operating in the same location for the past 50 years. Pano, Softdent software. Owner to retire. #14374

• **SAN FRANCISCO:** For Sale-General Dentistry Practice. This 1000 sq. ft. office is located in the heart of the financial district. It is a corner office with each of the 3 operatories looking out at the incredible views on Golden Gate side of the bay. The 2011 collections were \$1,200,000 with a low overhead. The practice averages approximately 15 new patients a month.

• **SAN JOSE:** For Sale - FACILITY SALE ONLY - NO PATIENTS: Exclusive Willow Glen district offering 4 fully equipped treatment rooms, 2 additional plumbed, in approximately 1,900 sq. ft. Digital Scanner, Intra-Oral Camera in a very elegant setting. This facility only sale offers favorable lease terms as well. #CA504

• **SAN LUIS OBISPO:** For Sale - Two Doctor General Dentistry Practice. Gross receipts \$1,537,142 for 2010 with an adjusted net income of \$691K. The office has 2,331 sq. ft. with 8 equipped operatories. Pano, E4D, and Dentrix software. Practice started in 1990 and has been in its present location since 1998. Approx. 3000 active patients. Great location with nice views. #14353.

• **SAN RAMON:** For Sale-FACILITY SALE. Great San Ramon location in professional complex: equipment, leaseholds & furnishings only. 1,400 sq. ft. with 4 equip. treatment rooms (2 additional plumbed), Pano X-ray, Computer Server & Workstations w/Dentrix, Intra-oral Camera & wired for digital. Priced to sell in an upscale community that's home to Chevron, AT&T, Robert Half International, Accenture and Safeway Stores. #CA511

• **SANTA BARBARA:** For Sale-General Dentistry Practice. Wonderful opportunity to live and work in one of California's most desirable areas. 2010 Gross Receipts were \$974,000 with a \$370,00 adjusted net income. Six days of hygiene. Dentrix software, Intra-Oral Camera and Panoramic X-Ray. Owner is retiring. #14382

• **SANTA CRUZ:** For Sale-General Dentistry practice. This excellent practice is centrally located in a professional complex. Office is approx. 1,885 sq. ft. 4 operatories with room for one additional. There are approx. 2,000 active patients with 6 days of hygiene per week. Practice Pano, Intra-Oral Camera and Easy Dental software. Owner is retiring. Reasonable lease available. #14361

• **VICTORVILLE:** For Sale - General Dentistry Practice. This practice is worked just on a three day a week schedule. There are 3 operatories with 10 off-street parking spaces. Practice has high visibility. The practice was acquired from previous owner in 2002. #14393

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## CLASSIFIEDS, CONTINUED FROM 970

**OPPORTUNITIES AVAILABLE —**

Riverside Dental Group and Dental Associate Offices have 7 locations across the Inland Empire. Our practices provide comprehensive general and specialty dental care for all ages in multiple offices that are convenient to many residents. We currently have a job opportunity for a Registered Dental Assistant. Must be a REGISTERED Dental Assistant with 3-5 years of experience. The ideal candidate must be energetic, passionate about their career, have excellent communications skills, dedicated to patient satisfaction and committed to ongoing growth and development. If you are ready for a challenge in a fun, exciting, professional environment and you have a positive attitude, we want you! We offer a competitive wage and benefits. Submit your resume by emailing Donna Dahlen at ddahlen@amdpi.com.

**OPPORTUNITIES AVAILABLE —**

Western Dental Services, Inc. seeks multiple dentists for various offices in Central CA. Locations: Fresno, Visalia, Hanford, Tulare, Merced, Turlock. Must have DDS or foreign equivalency and valid CA dental license. Western Dental and its affiliates offer excellent career opportunities, with outstanding incentives and rewarding compensation packages that include: Highly competitive salaries; Comprehensive benefits packages; Clear career paths with advancement opportunities; Extensive training and continuing education; Professional, state-of-the-art facilities; Solid job security; Company paid professional liability insurance; H-1B and Green Card Sponsorship available. Our doctors join us from a wide array of career paths – straight out of school, a residency or a specialty program, moving from another town or state, filling in extra days while building a private practice, leaving private practice or moving from other dental companies. Email resumes to LCuica@westerndental.com.

**OPPORTUNITIES AVAILABLE —** Great family practice busy private office. Great reputation, flexible ownership, part-time or full time, short-term or long-term. Very short commute from exceptional communities like Santa Cruz, Capitola, Aptos, and Monterey. Contact jergensen@gmail.com or 510-413-8413.

**OPPORTUNITIES AVAILABLE —** We would like to invite a board eligible or board certified Endodontist to join our team of specialists and work in our multi-specialty multi-location offices on a part time basis. Please call or email your resume to bayareadentist2009@gmail.com.

**OPPORTUNITIES AVAILABLE —** We would like to invite a board eligible or board certified Pedodontist to join our team of specialists and work with our multi-specialty multi-location offices on a part time basis. Please email your resume to bayareadentist2009@gmail.com.

**OPPORTUNITIES AVAILABLE —** We would like to invite a board eligible or board certified oral Surgeon to join our team of specialists and work with our multi-specialty multi-location offices on a part time basis. Please email your resume to bayareadentist2009@gmail.com.

**OPPORTUNITIES AVAILABLE —** Part-time in family practice. Must be familiar with all phases of dentistry and able to treat complicated cases or willing to learn. Minimum 2 years experience or GPR. Contact 510-932-9040.

**OPPORTUNITIES AVAILABLE —** Pacific Dental Services and its affiliated owner dentist are looking for an experienced dentist to work full time in our state of the art practice in Encinitas. Our office is fully digitalized and equipped with CAD/CAM. Full time dentist given excellent benefits including medical, dental,

vision, free CE, and matching 401k. Apply online at [www.pacificdentalservices.com](http://www.pacificdentalservices.com).

**OPPORTUNITIES AVAILABLE —**

CommuniCare Health Centers is currently seeking an on-call dentist to work with the dental program team, providing dental services to clients at our clinics in Davis, Woodland, and W. Sacramento. CommuniCare Health Centers is a Federally Qualified Health Center providing comprehensive patient-centered primary care services including medical, dental, substance abuse treatment, behavioral health and outreach services to low income, multi-ethnic, uninsured and underinsured populations. Contact [employment@communicarehc.org](mailto:employment@communicarehc.org) or 530-753-3498.

**OPPORTUNITIES AVAILABLE —** We are looking for an Oral Surgeon to provide services for our private practice once a month. Good manners and excellent doctor/patient communication skills are a must. Please email CV to [endo12dds@hotmail.com](mailto:endo12dds@hotmail.com). Board Certified or Board Eligible only.

**OPPORTUNITIES AVAILABLE —** PT/FT GP dentist with a year minimum working experience. Motivated, private office with friendly staff. Please email CV to [mylmbp@gmail.com](mailto:mylmbp@gmail.com).

**OPPORTUNITIES AVAILABLE —**

Established practice with excellent supporting staff and dentists looking for a GP who has great rapport with patients. Must be able to diagnose efficiently. Day to day procedures are exams, bondings, crown and bridges, some partials and we placed and restore most of our implants. We have our own endodontist and periodontist. Minimum 3 years experience. Please email resume to Dr. Limhengco at [gilbertlim@msn.com](mailto:gilbertlim@msn.com).

CONTINUES ON 976



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### **3086 SONOMA COUNTY GP**

Seller retiring after 30 years of practice located in highly desirable suburban area. Excellent reputation with local community and relationship with large, stable patient base of approx. 1,400, avg. 15 new pts./month. State-of-the art fully-equipped practice w/pano, laser, intra-oral camera, Dentrrix. 2011 GR \$1.1M+, 2012 on schedule for \$1.2M. Asking \$828K.

### **3085 STANISLAUS COUNTY GP**

General, family practitioner now retiring. Offering well-est. successful, state-of-the-art practice in approx. 2,800 sq. ft. facility w/7 fully-equipped ops. Great location & exceptional long term staff. Owner willing to help in transition. Estimated 2,500+ active pts. 5 year avg. GR \$1.4M w/net of approx. \$500K & just 3.5 doctor days & 10 hyg. days/wk. This practice is for an established dentist or 2 dentists w/experience & who will appreciate a high quality practice. Asking \$895K.

### **3078 GILROY DENTAL FACILITY**

1,280 sq. ft. turn-key dental facility w/5 ops in medical/professional office complex adjacent retirement community near Westwood Shopping Center. Great opportunity to establish a practice with little start-up cost or open a satellite office. Asking \$75K.

### **3080 SAN BENITO COUNTY GP**

State-of-the-art family practice. 1,558 sq. ft. facility. Approx. 1,100 active pts. 3 Dr. days. 2011 GR \$449K+. Asking \$305K.

### **3089 GILROY GP**

Seller retiring from well-est. high quality practice w/approx. 1,200 active pts. 2011 GR \$513K+ w/3.5 doctor days/wk. 5 fully-equipped ops in 1,440 sq. ft. modern facility. Seasoned and dedicated staff providing a relaxed atmosphere to loyal pt. base. Asking \$350K.

### **3082 SONOMA COUNTY GP**

Well-established, family-oriented practice in charming community located in the hub of Sonoma County. Stable patient base. 4 doctor days, 3 hygiene days/week. Approx. 14 new pts./month. Approx. 1,500 active pts. 3 fully-equipped ops., recently upgraded equipment, in 900 sq. ft. state-of-the-art office. 2011 GR \$552K+. Asking \$384K.

### **3083 SONOMA COUNTY GP & BLDG**

Well established & respected GP known for personalized, quality dental care in a family oriented community. Seasoned staff, stable patient base, approx. 1,500 active pts. Located in the heart of Sonoma County in ample 2,088 sq. ft. facility w/6 ops. 2011 GR \$767K+ w/4 doctor days. Seller retiring & willing to help for smooth transition. Asking for practice \$560K. Building is also available for purchase.

### **3081 SANTA CLARA GP**

1,200 sq. ft. 4 op., newly equipped and fully networked modern office w/ laser, Dexis digital x-ray and Dentrrix practice software. Located in a well-travelled area approx. 1 mile from Santa Row. 2011 GR \$208K+. Asking \$145K.

### **3059 SANTA CRUZ COUNTY GP & BDG**

Charming practice tucked among soaring redwoods in Santa Cruz County. Well established and part of the small community landscape. 2011 GR \$626K+ w/3 doctor days. All fee-for-service. This is a great turn key practice and opportunity to own a hidden gem. Practice asking price \$373K, building is also available.

### **3080 SAN BENITO COUNTY GP**

State-of-the-art family practice. 1,558 sq. ft. facility. Approx. 1,100 active pts. 3 Dr. days. 2011 GR \$449K+. Asking \$305K.

### **UPCOMING:**

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CLASSIFIEDS, CONTINUED FROM 974

## OPPORTUNITIES WANTED

**OPPORTUNITIES WANTED —** Implant Surgeon/Periodontist For Your Office — Implant Surgery/Bone Grafting/Perio Surgery/3rd Molar Extractions/Surgical Extractions/Gingival Grafting all done in your office. Email: bayareaperio@gmail.com or call 617-869-1442.

**OPPORTUNITIES WANTED —** General dentist seeking part-time/full time position. Please email denisovdds@gmail.com or visit website www.SmileForSanDiego.com for resume and qualifications.

**OPPORTUNITIES WANTED —** Specialist interested in renting one or two operatories in Cupertino or surrounding areas, one or two days per month. Contact implantological@yahoo.com or 408-905-0033.

**OPPORTUNITIES WANTED —** Hispanic dentist licensed in California, want partner to establish dental office, preferred managing dental or professional marketing. Send information to luismiguelcollazos@yahoo.com, or 818-605-1584.

**OPPORTUNITIES WANTED —** I am a 2011 USC graduate looking for an associate dentist position in the Orange County area. I am a friendly outgoing personable dentist with over a year of professional experience that has given me a broad range of clinical experiences as well as front office knowledge (insurance). I am comfortable working in any type of practice from a small private practice to a large multi-specialty practice. Please contact me if you would like to discuss associateship opportunities and my qualifications. Contact associatedentist2011@hotmail.com or 714-878-0405.

**OPPORTUNITIES WANTED —** Specialist needs satellite office of one or two operatories in Downtown/Midtown Sacramento, one or two days per month. Contact 916-847-7015.

**OPPORTUNITIES WANTED —** Specialist interested in renting one or two operatories one or two day per month in Cupertino or surrounding cities. Contact 408-905-0033.

## DENTAL EQUIPMENT FOR SALE

**DENTAL EQUIPMENT FOR SALE —** Equipment for sale: New handheld portable X-ray unit(\$3500). New intraoral wall X-ray unit (\$1650). New mobile X-ray on wheels (\$1695). New chairs/units operator packages (\$3695). New implant motors (\$1850). Everything is brand new, with warranty. Contact nycfreed@aol.com or 561-703-1961.

## DENTAL PRACTICES FOR SALE

**DENTAL PRACTICE FOR SALE —** This is a wonderful opportunity for an associate who is interested in a partial or full purchase. Looking for someone who is proficient in all phases of general dentistry, including molar endo, with at least 5 years of practice experience. This is a well-established successful practice in Simi Valley, Ventura County, emphasizing quality dentistry and patient education. We have 6 operatories, Dexis X-ray, digital Pano, Eaglesoft software, computers & TV's in all ops. No HMO's or Medi-Cal. Please email your resume to simidentalpractice@gmail.com.

**DENTAL PRACTICE FOR SALE —** Located rural community NE California. 5 year old equipment, newly remodeled

office, 4 operatories, Pano, Nobel Biocare Implant system and much more. 3 days/week hygiene. Collected \$746K in 2010 on 5 days/week, \$527K in 2011 on 3 days/week. Great staff, reasonable rent. Asking \$175K. Contact ddspractice4sale@yahoo.com or 530-386-5110.

**DENTAL PRACTICE FOR SALE —** This practice boasts strong collections, an excellent location, room for expansion, a stable and growing patient pool and a paperless, state-of-the-art design and is located in Tracy, California. The office occupies 1,600 square feet and features 4, fully equipped, spacious operatories and is plumbed for 2 more. The office has a beautiful reception area, doctor's office, business office, sterilization center, staff lounge, lab, storage room and restroom. Floor-to ceiling windows give the office an open and airy feel. Appraised at \$445K; asking \$445K. Contact dds1033@hotmail.com or 209-834-6863.

## MISCELLANEOUS

**MISCELLANEOUS FOR SALE —** Original mint condition bound journals of the Journal of Prosthetic Dentistry and the Journal of Prosthodontics. These are bound copies, which means that each year is bound into one book. Professionally done, rare copies that can only be found in a university library. My loss is your gain. Volume 1, which is the year 1951 through 2005 for JPD. Also, year 1 volume one of the Journal of Prosthodontics. My bound collection for both publications ends at 2005-6. \$10,000.00 firm. Once again the majority of these are out of publication and impossible to find. In color prints all the way back to the 50's are incredible. Contact sfprosth@gmail.com or 925-360-5891.





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- 6008 MENDOCINO COAST - FORT BRAGG** Cultural haven offers attractive lifestyle. 2011 collected \$725,000 on Owner 3-day week. 4-days of Hygiene. Digital radiography. Computers in ops.
- 6020 PEDO PRACTICE - ATTRACTIVE FAMILY COMMUNITY** 2012 trending \$550,000+ in collections with Available Profits of \$280,000+. Remarkable office with investment here topping \$345,000. Computerized charting with digital Pano and Ceph. Full price \$240,000.
- 6025 CENTRAL MARIN COUNTY - SAN ANSELMO** Well established practice collected \$490,000 in 2011 on 3-day week. 2+ days of Hygiene.
- 6026 SACRAMENTO** 2011 collected \$825,000 on 3-day week. Practice coupled with facility and location and much more. Bring in specialists. Strong foundation can be developed into busier practice.
- 6029 NORTHEAST CALIFORNIA - ALTURAS** Trade in smog and congestion for soaring mountains and close-knit communities. 2012 tracking \$600,000 on 3-day week. 3+ days of Hygiene. Strong Recall. Great staff. Beautiful office. 3-ops with Adec delivery systems. Be busy, be happy and take vacations. No worries here. Full price \$185,000.
- 6030 SANTA ROSA AREA** 2012 tracking \$850,000+ in collections, reflecting growth over 2011. Strong profits. 4-days of Hygiene per week. Digital x-rays. Building optional purchase.
- 6031 MODESTO** Owner retiring. 2012 tracking \$430,000 in collections. 4-ops. Bilingual staff.
- 6032 MODESTO** Currently collecting \$520,000+ with Available Profits of \$210,000. 3-days of Hygiene.
- 6033 PINOLE AREA** \$550,000 per year. Has done \$700,000-to-\$800,000+ per year. 3.5 days of Hygiene.
- 6034 SAN LEANDRO AREA** Did \$650,000 in 2011. Owner reduced time in 2012. Shall collect \$475,000. 5-ops. Nice Hygiene schedule. Great blue collar practice.
- 6035 SAN FRANCISCO'S EAST BAY – ORTHO** Part-time practice grossing \$350,000 per year. Very desirable location.
- 6036 SAN JOSE'S 827 BLOSSOM HILL ROAD - FACILITY ONLY** Highly coveted address. Complex 100% occupied. Phenomenal access per proximity to intersection of Almaden Expressway & Blossom Hill Road, and right off Highway 85 and Guadalupe Expressway. 5 equipped Ops in attractive 1,500 sq.ft. suite. Digital radiography.

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- SAN DIEGO BEACH CITY** Absentee Owner. Grosses \$800,000. FP \$550,000.
- 210/57 FREEWAY INTERCHANGE** Join senior Doc in 5-year "buy out". Grosses \$1+ Million.
- MONTCLAIR** Need cash or bank loan for \$250,000 using other assets as collateral. 6 op.
- HEMET** "Western Dental" like location. Owner's 2-days Grosses approximately \$700,000. Previously \$1 Million. Full Price \$550,000.
- MURIETTA - TEMECULA** Gr \$750,000 3.5 days. NO PPO or HMO. Full Price \$550,000.
- BALDWIN PARK** Grosses \$200,000+. Next to large medical complex. Full Price \$185,000.
- RESEDA** Hi identity location. Projects \$1 Million.
- ANAHEIM** 1.5 day week Grosses \$200,000. Previously opened 4 days. Full Price \$150,000.
- LA QUINTA - PALM DESERT** Great location. 2012 projects \$840,000. FP \$660,000.
- YUCCA VALLEY** Huge sign. Small building. 600 sq.ft. 2 ops. Full Price \$110,000.
- SMALL TOWN NEAR BAKERSFIELD** Gross \$20,000-to-\$40,000/month. Bargain.
- APPLE VALLEY - HESPERIA** Grosses \$700,000+. Absentee.
- SANTA PAULA AT FILLMORE** Gross \$400,000+. Like new. Beautiful office.
- WESTWOOD - BEVERLY HILLS** Gross \$350,000. \$350,000+ invested. Full Price \$350,000.
- LAMONT- ARVIN** Next to McDonalds. Very part time. Full time DDS will do \$500,000.
- APPLE VALLEY SHOPPING CENTER** Grosses \$650,000 part-time.
- CATHEDRAL CITY** Hi identity. FP \$150,000. Previous \$1,000,000 location.
- TEMECULA - HEMET** Grosses \$600,000 part time. 8 ops. Full Price \$565,000.
- VICTORVILLE** Grosses \$700,000+, nets approx \$300,000. Full Price \$550,000.
- SANTA ANNA** Grossing \$40-to-60K/month. Net \$200,000 to \$300,000. Absentee Owner.
- LANCASTER** Gross \$480,000 part time. Manager says "Full time Doc will do \$1 Million."
- ORANGE COUNTY** Right DDS will Gross \$2 Million. Financing in place. 9 Hygiene days.
- CARLSBAD** 12 ops. Absentee. Grosses \$700,000. Full Price \$585,000.
- BALDWIN PARK** 3 ops 50% Latino & 30% Filipino.
- LONG BEACH** Hi Identity condo and practice. \$750,000 package.
- SANTA ANA** Hi Identity. 1,400 sq ft rents for \$2,300. 40 new patients/month.
- PALM SPRINGS & PALM DESERT** Gross \$2 Million with both or buy separately.
- GARDEN GROVE** Korean patients. Grosses \$450,000. 3 ops. Full Price \$300,000.

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DR. BOB, CONTINUED FROM 981

What if there was a dentist, examined from every angle, who surpassed you in every aspect of your professional and personal life? How would you feel about a guy like that? Let's say he's cuter than you are, has more attractive hair, and looks better in his clothes? Let's further suppose that everything he does, he does more efficiently, faster, and probably better than you. Would you still admire him, wish him well? OK, his wife is not only extremely attractive, but holds advanced degrees in subjects too complex to consider. Now what? His kids are clean cut, aren't on anything, and have regular haircuts and unpierced body parts. What if his office and staff operated so smoothly it made yours look like the Three Stooges amok in a foundry? Do you think people would continue to respect a superior person like this? People would. He's Dr. Gordon Christensen and I feel really ashamed, because once I thought what if one of his porcelain veneers cracked while he was putting it on? Ha, ha, wouldn't that be great? And, what if when he got it on, the shade was a mile off? Isn't that terrific? Why, I bet he's no hotter than I am, I bet he's had a bridge come loose on one end. Maybe, at least one of his patients didn't like their partial. Who am I kidding?

A fantasy, pure and simple. I think the answer is obvious to anyone who knows Christensen — he's an alien from some advanced civilization and could as easily be a technical consultant on Third Rock From the Sun as practicing dentistry in Provo, Utah, and giving courses all over the world. I like him anyway. ■■■■



## PRACTICE SALES AND LEASING



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Broker/Owner

**"HAPPY HOLIDAYS!!"**

**ANTELOPE VALLEY** – (7) op comput. G.P. in a free standing bldg. Newer eqt., digital X-rays. Annual Gross Collect \$1.5M. Cash/Ins/PPO pts. 20-30 new pts/mos. (50) yrs of Goodwill.

**ANAHEIM #3** – (3) op comput. G.P. in a one story prof. bldg.. Gross Collect \$20K+/mos on 2 ½ days/wk. Does no advertising. Cash/Ins/PPO pts. Low rent and overhead.

**BAKERSFIELD #21** – (10) op comput. G.P. & Bldg. on main St. (3) ops fully eqt'd. (3) ops part eqt'd & (4) plumbed. Store front w exposure. Collects ~\$500K/yr. on 3 days/wk. Cash/Ins/PPO.

**BAKERSFIELD #24** – 4 ops/2 eqt'd. G.P. in a strip ctr. Cash/Ins/PPO. Gross \$180K p.t. **SOLD**

**CENTRAL VALLEY/So. FRESNO COUNTY** – (3) op comput. G.P. in smaller town w ltd. competition. Newer eqt. Networked & digital. Dentrix & Dexis. Gross Collect \$40K+/mos **NEW**

**HACIENDA HTS #2** – (3) op comput. G.P. Cash/Ins/PPO. 2012 Projected Gross Collect @ \$525K+. (38) yrs of Goodwill. 4½ days of Hygiene/wk. (10) new pts/mos. Seller retiring. **NEW**

**IRVINE** – (3) op Turnkey office located in a shop. ctr. Newer equipment. Reasonable rent. **NEW**

**MAYWOOD/COMMERCE** – (4) op computerized G.P. located in a very busy shopping center. Heavy foot traffic with many walk-ins. (20+) yrs of Goodwill. Cash/Ins/PPO pt. base w some kids Denti-Cal. Annual Gross Collections between \$400K - \$500K. Seller retiring. **NEW**

**NORTHRIDGE** – (6) op comput. G.P., (5) ops eqt'd. In a remodeled prof. bldg. Cash/Ins/PPO & HMO pts. ~\$2K/mos in cap cks. Annual Gross Collect \$350K+ on (2) days/wk. **REDUCED**

**PORT HUENEME #2** – Turnkey w charts. (4) ops/(3) eqt'd. G.P. Digital. Strip Ctr. **SOLD**

**RESEDA #6** – (3) op comput G.P. located in a prof. bldg. Gross Collect. ~\$140K/yr p.t. Cash/Ins/PPO pts. Digital X-rays & Dentrix. Great starter or 2nd office. **PENDING**

**SAN JOAQUIN VALLEY** – G.P. & Bldg. in small town w ltd. competition. (4) op comput. office. Cash/Ins/PPO. Annual Gross Collect \$500K+. Very low overhead. Seller retiring. **NEW**

**SANTA BARBARA #3** – (3) op comput. G.P. in a prof/med/dental bldg. Cash/Ins/PPO. 8-10 new pts/mos. Gross Collect. \$250K+ on a (4) day wk. Digital x-ray. Seller retiring. **PENDING**

**SANTA BARBARA #4** – (3) op p.t. G.P. (2) ops eqt'd. 40+ yrs of Goodwill. On main St.

**So. TULARE COUNTY - PORTERVILLE AREA** – (6) op comput. G.P. in a major Shop. Ctr. Exposure/visibility/signage. Cash/Ins/PPO/Kids Denti-Cal pts. Gross Collect. \$500K+/yr.

**VALENCIA – DROP DEAD GORGEOUS!** (6) op comput. G.P. Digital X-Rays & Pano. Dentrix and Dexis s/w. CEREC. All the toys and whistles. Newer build out and eqt. 2012 Projected Gross Collect. \$770K. 22+ years of Goodwill. Seller has a degenerative condition & is calling it quits before it worsens. Seller will assist with transition. **NEW**

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DR. BOB, CONTINUED FROM 982

(and who is not?). The bracket table and operating light are in the way and the armrests will rupture your spleen.

Barcalounger and La Z Boy recognized this problem by providing a handle on the side to retract the footrest. And it doesn't cost \$4,000!

Toothbrush manufacturers, having tried every kind of brush design they can think of, recently concentrated their advertising budgets on promoting the handles. When they perfected heads with two colors of bristles, there was nowhere else to go. We now have handles that bend, flex, twist, and are inlaid with precious plastics in 256 decorator colors.

Imagine how much better toilets would work and how much more willing we'd be to use them if flushing handles came in a variety of shapes and colors.

Dental floss used to come in two types: waxed and unwaxed. Waxed floss used to come in two types: regular and tape. Patients used to come in two types: those who flossed and those who claimed they did, but were lying in their teeth.

Now there are 56 kinds of floss including braided, crocheted, and macrame. Floss comes in 17 colors and eight flavors from licorice to marinated weasel. Patients still come in the same two types — except now they start lying at an earlier age.

In the beginning there were two surfaces: labial and buccal. Everybody knew they were dealing with either anterior or posterior teeth. Labial and buccal told them which. Life was simple. But not simple enough, so all surfaces that used to be labial or buccal, by order of the World Court are now facial. Lingual surfaces are confused; they didn't even get a choice. Dentists practicing more than 25 years took to this simplification as readily as they would to changing all procedure codes to Mandarin. I envy patients

who are still free to utter any redundancies they want like "upper back molars." We do as we're told; the authorities could instruct us to walk funny like soldiers in foreign armies and we would.

I just love these guys who go out and buy every new dental product that comes on the market. "Have you heard about this new proactive, supermodulated zirconium focused dirt based laser that can actually prep a class I cavity in less than .3 nanoseconds?"

"Yep, got one."

"Get outta here! Really? What'd it set you back?"

"Thirty nine grand, plus tax, shipping and handling."

"Wow! Can you do pit and fissure sealants with it too?"

"Vaporizes those babies right down to the apex." "CAD CAM?"

"Got one."

"Use it?"

"Unh huh."

"What else?"

"Got six way power syringe with buttons for double latte and extra milk. Got a water chair with sitz bath provision and a titanium handpiece that only accepts burs handmade by Old World artisans indentured to the Krupp Works. My computers all have 50-inch screens in 3 D and are hooked into NASA's global positioning system, so I can tell at any given moment where I am in the oral cavity."

"You are really a piece of work, you know that?"

"Exactamento, avant garde. Right on the cutting edge, pushing the envelope, leading the troops, lighting the way and spending money like an inebriated seaman."

Every city needs a guy like this.

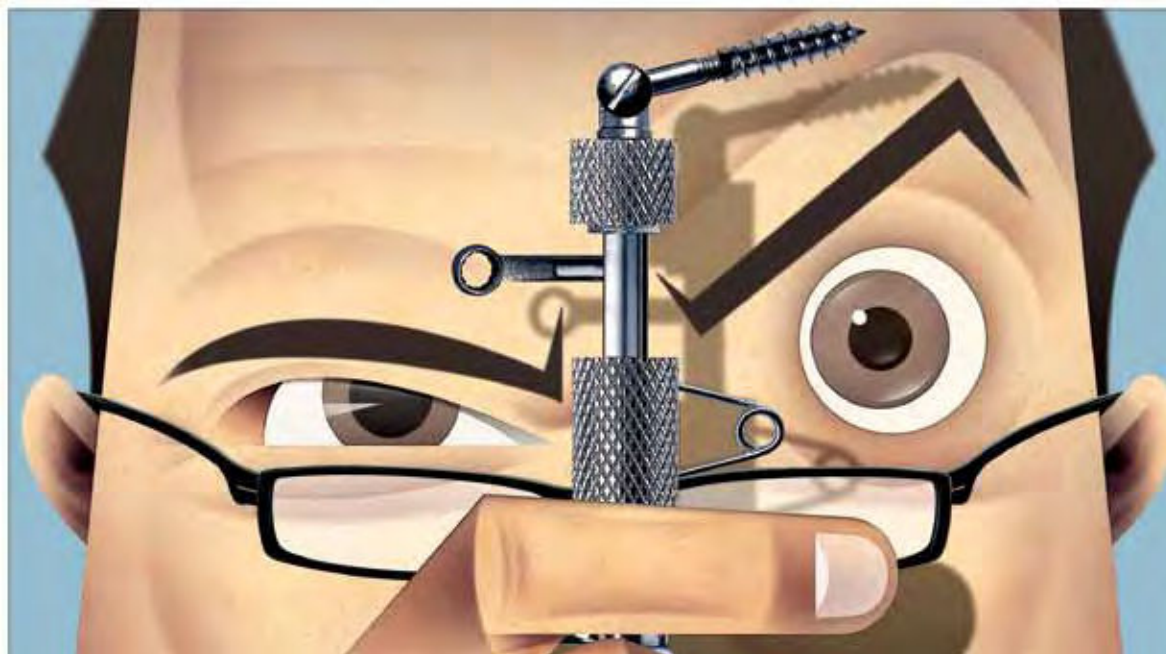
Every two years on your birthday, as if you didn't have enough trouble coping with this, you've got to prove to the Department of Consumer Affairs that

you've satisfied the 50 units of continuing education requirement to renew your license. Then you can resume doing what you've been doing for the last three or four decades. It would make more sense to have to prove to the DMV that you'd traveled 50 hours on California's freeways without getting killed by some lane swapping, tail gating, bombed out of his mind jerk with a Saturday night special. But that's bureaucracy for you. For reasons best known to the department, at least 25 of those C.E. credits must be granted for attending in-person some course given in a remote city. In this setting, it is believed you can learn more by mingling with other dentists, sitting in straight back chairs for seven hours and eating lunch or dinner that you could have had at home or McDonald's for less. That's the first thing you learn. Sometimes the speaker has something to say relevant to your practice. Considering that the outing will cost you anywhere from \$65 to several hundred dollars, you certainly hope so. There's no test to determine if you absorbed anything and taking notes is optional. Sometimes all you get is a sore bum and heartburn.

I have great confidence in any product that is promoted as being "scientifically formulated," clinically tested," or "medically approved." Should any product have all three of these attributes and be demonstrated by a distinguished gentleman in a white coat, who confides that this panacea is not available in stores, but if I call the 800 number below and have my credit card handy, operators will be standing by to take my order and I'll get it in six to eight weeks — well, then I couldn't get to the phone fast enough. I don't care what it is, everybody my age that I know is sick with something. The trick will be lasting six to eight weeks.

CONTINUES ON 979

# Notions, Doubts and Opinions



If you are over the age of 12,  
it is impossible to seat  
yourself gracefully in a  
modern dental chair.

➔ Robert E.  
Horseman,  
DDS

ILLUSTRATION  
BY VAL B. MINA

It's widely known that many performers in the entertainment industry get so up-tight before they go on, that they throw up just prior to doing their thing. Sometimes the nature of their talent is such that a similar reflex is duplicated by the audience, but that's beside the point. Yet, the performers continue to do this, claiming the reward of audience adulation more than makes up for the wear and tear on their nervous systems. As nonactors, the rest of us are not considered sensitive enough to appreciate what they sacrifice for their "art."

What a crock! If every time you went in to prep a six-unit bridge you had to go to the john first and toss your Oreos, how long do you think it would take you to figure out you should be in another line of work?

Does it surprise you to know they are still making saliva ejectors? The only difference between those now available and those used in the 1940s is that the new ones are made of plastic and can be bent to not work in any configuration you care to try. Saliva ejectors never did work very well, even when patients sat up. They only served to give people whose salivary ducts were entangled in the ejectors something to do. Lying supine, patients find the current ejectors are useful solely for inserting up the nostrils, but we're trying to discourage that.

If you are over the age of 12, it is impossible to seat yourself gracefully in a modern dental chair. It is even harder to exit, particularly if you're in a hurry

CONTINUES ON 981

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