

# ORTHO TRIBUNE

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**AAO snapshots**  
The annual meeting  
in photographs.

▶Page 6



**Meet Dr. Wheeler**  
The orthodontist gives his  
take on using aligners.

▶Page 10



**Dr. Hardy's check up**  
He won our makeover  
contest. See how it's going.

▶Page 18

## Showing off at AAO

109th annual session unveils new insights, new technology, new products

By Kristine Colker, Managing Editor

By the time the attendees of the American Association of Orthodontists' 109th Annual Session, held May 1-5 in Boston, headed home, they were leaving with more than they had come with. Some carried products — everything from wires and brackets to toothpaste and floss. Some carried souvenirs of Boston — Red Sox hats and “Cheers” pint glasses, to name a few.

One man, Dr. Paul McAllister of Lincoln, Neb., had a brand new Mini Cooper he won from Dentsply GAC.



→ **OT** page 8 A view of the exhibit hall floor during the AAO Annual Session. (Ortho Tribune photo/Fred Michmershuizen)

## Elevating the standard of our care

**How using 3-D  
treatment planning  
software put  
one doctor back  
in control**

By Mark Feinberg, DMD

Part 2 of 3

The fundamental basis of medical/dental practice is predicated on treatment strategies that are derived from an accurate diagnosis.

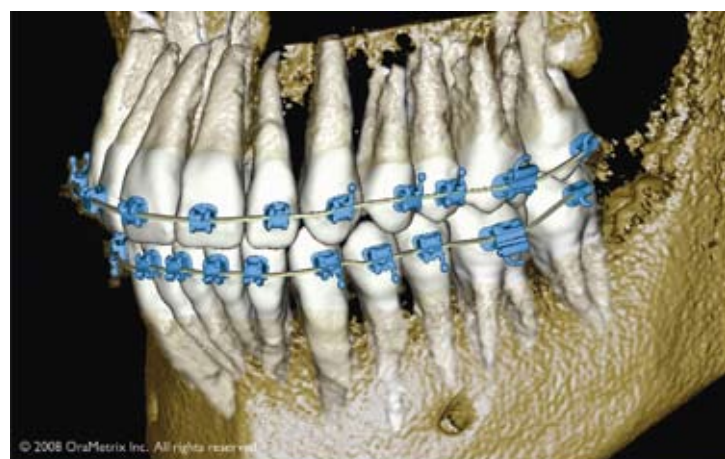


Fig. 1: SureSmile has successfully integrated cone beam CT images into its 3-D software planning tools.

With the exception of recent innovations in the realm of 3-D cone beam CT radiography, and to a lesser extent digital cephalometric analysis and static 3-D models, the diagnostic landscape in orthodontics has not yielded much in the way of innovation during the past 100 years.

Orametrix Inc., as the provider of SureSmile technology, has proven an anomaly in this regard. Under the guiding influence of its vision-

ary founder, Dr. Rohit Sachdeva, the company has established itself as a patient-centric technology leader dedicated to enhancing the quality of patient care.

Its pioneering convergent technology not only advances diagnostics but connects this information directly to the design of therapeutic devices.

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→ **OT** page 14

← OT page 1

### Appliance-driven therapy

Traditionally, the major orthodontic manufacturers have influenced and driven the direction of advancements in patient care. Not surprisingly, the emphasis has focused on appliances (fixed or shrink wrapped), with anchorage devices as the latest example to flood the marketplace.

Selecting from the myriad of anchorage devices can be both daunting and bewildering. The current, trendiest treatment approaches are predicated on expensive designer brackets bundled with lofty treatment philosophies that purport to perform magical tooth gymnastics.

To observe “handle/bracket” worship first hand, one need only witness the exhibitors’ floor at an AAO convention. There you will find a predominance of the handles with a sprinkling of practice management and novelty items thrown into the mix. This is to be expected as they are a major source of revenue, and we are a profit-driven economy.

Unfortunately, the DR, or “Do Right,” component to this equation has been relegated to a minor role. My intent is not to diminish these products, but rather to encourage a de-emphasis in their importance relative to the value of toolsets that aid in proper diagnosis and treatment planning.

### Diagnostically driven therapy

Therefore, it is refreshing that Ora-Metrix provides through SureSmile technology a comprehensive digital decision support system that squarely positions the doctor in the command and control position where he/she rightfully belongs.

Incremental improvements in specific areas of orthodontic practice have been achieved through paperless practice management systems, digital cephalometrics, photography and radiography, but one key piece has been missing — a system to integrate diagnostics with therapeutics.

The SureSmile 3-D diagnostic and treatment planning software provides the basis for high-quality results because it is coupled with powerful, customized, prescriptive, superelastic archwires.

### An end-to-end solution

Early on in the records-taking process, 3-D diagnostic SureSmile models are created from impressions or scanned from study models. Sophisticated treatment planning and diagnostic software toolsets are employed using analytical and simulation modalities to assist in case diagnosis and treatment strategy development.

Mind’s eye orthodontics, based on best guess, is supplanted by incredibly realistic treatment simulations. The software is extremely versatile and can be applied to all types of cases: surgical, orthopedic, asymmetric, extraction and non-



Fig. 2: The robotic technology used in the SureSmile system creates custom archwires according to the doctor’s prescription.

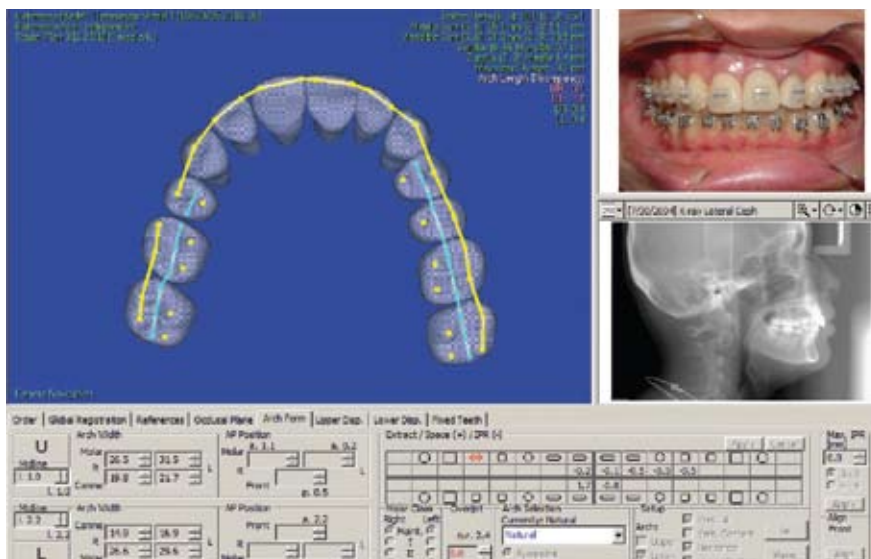


Fig. 6: Creating a 3-D visual treatment objective.

extraction, from the ordinary to the most complex and involved.

This 3-D visual treatment objective (VTO) is created by virtually moving teeth in three planes of space and testing various approaches as deemed necessary. Significant information can be gleaned from this process, and numerous outcomes can be made available for comparison. “What if” scenarios can be examined and problems anticipated, delineated and defined.

Using this medium to collaborate with patients and fellow professionals can be extremely helpful in gaining consensus on treatment options and minimizing misunderstandings that arise from mere discussion.

An additional computerized 3-D model is created at a point during the patient care cycle when the patient is in active treatment (brackets placed). Treatment planning strategies can then be refined on this model, and ultimately, a “targeted” setup is created.

The personalized wire prescription is reverse-engineered based on this clinician prescribed setup. Prior to establishing the prescription for the 3-D target setup, it is instructive to perform a quick diagnostic re-analysis by superimposing the pretreatment diagnostic model over the mid-treatment therapeutic model. This allows the clinician to



Fig. 3: SureSmile diagnostic models are created from impressions or scanned from study models.



Fig. 4: SureSmile provides the orthodontist complete control of treatment.



Fig. 5: Is movement feasible?



Fig. 7: Patients know what outcome to expect with SureSmile treatment planning software.

and, therefore, avoiding continually re-diagnosing cases throughout treatment. The benefits to this approach are greater control over the tooth movement and significantly greater treatment efficiency as teeth are moved more directly and more concurrently by the customized appliance.

### Elevating my standard of care

Our practice credo is to leverage technology to elevate the standard of care for our patients. The SureSmile 3-D diagnostic software toolsets have enhanced my ability to make better, informed treatment decisions that can be reliably delivered via the customized appliances and, in turn, have enhanced my ability to “do right.” OT

determine if the patient’s biological limits (quantitatively) have been managed and to assess how treatment has progressed in order to initiate any course adjustments.

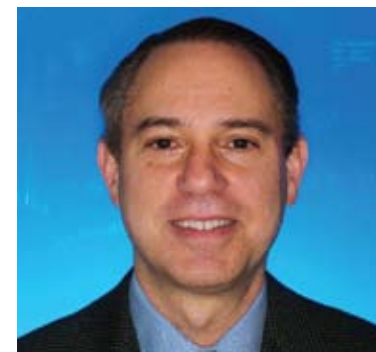
Tables in the software indicate the nature and magnitude of individual tooth movement designed in the setup. This process allows one to easily make determinations about whether that movement is appropriate and feasible (Fig. 5).

For example, SureSmile software allows planning to identify the constraints of tooth movement and specifies where and how much interproximal reduction to perform as well as other space management approaches. Once the boundary positions have been established for the anterior and posterior teeth, the software aligns the teeth virtually and determines how much IPR will be required.

Based on the clinician’s parameters, if too much reduction is specified, one can modify the torque, arch form or other conditions, as deemed appropriate, with a couple of keystrokes and have the software modify the setup (Fig. 6).

Clearly, this approach to treatment, which is proactive vs. reactive, has several major benefits, foremost of which is the ability to view patients “holistically” rather than incrementally from visit to visit

### OT About the author



Dr. Mark Feinberg graduated from the University of Connecticut School of Dental Medicine in 1982 and completed his orthodontic residency at Columbia University in 1984. He is a diplomate of the American Board of Orthodontics and a member of the AAO and NESO. He maintains a full-time private practice in Stratford, Conn.

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