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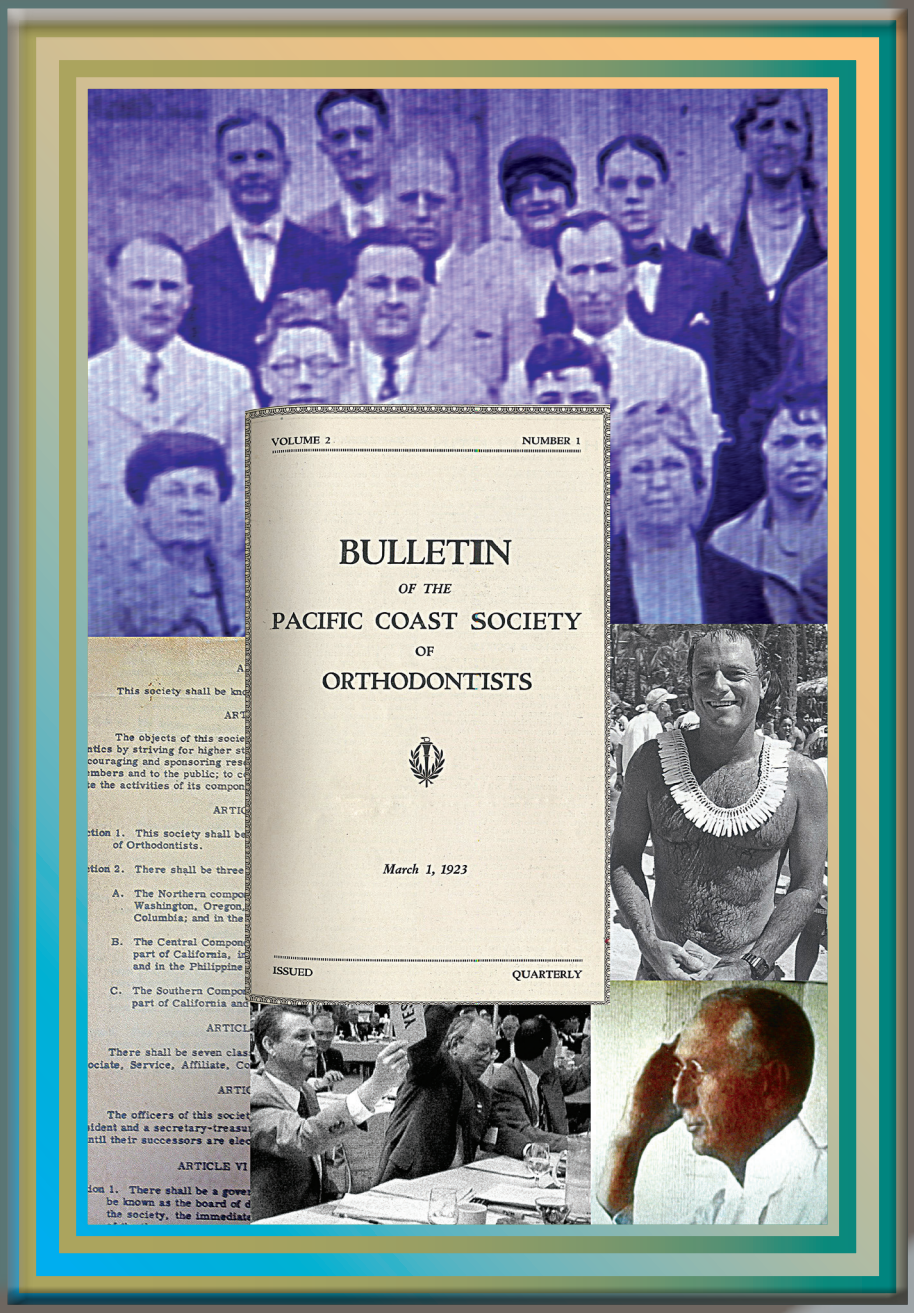
PCSO Bulletin

PACIFIC COAST SOCIETY OF ORTHODONTISTS



A Century of Smiles

FALL 2012

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PCSO Bulletin

NEWS AND REVIEWS OF THE PACIFIC COAST SOCIETY OF ORTHODONTISTS

Features

Departments

Dr. Merrill

A Good Value

by Dr. Rob Merrill, PCSO President 2011-2012

As we approach the Annual Session in Monterey, where we will celebrate the centennial of the founding of PCSO, I have reflected upon what membership in PCSO has meant to me personally and professionally. I feel that I have always received good value for the dues I've paid to PCSO, AAO, and my component organization. The continuing education opportunities have been an important benefit for my employees and me. Quality continuing education is the primary mission of PCSO. We have travelled to meetings of PCSO, AAO, and our component for learning and networking. Both doctors and our team have participated in online educational courses and have found them valuable from both an educational and a team-building perspective. While there are many meetings, programs, and Webinars that we haven't attended, those we have are a tangible benefit of membership.

Another great value I receive for my dues dollars is the AAO's Consumer Awareness Campaign. The refocused campaign is direct and effective. The annual assessment is little more than what it costs to sponsor a little league baseball team, so it is a great value for the money spent. Like any direct-to-consumer campaign, it will take time, repetition and consistency for the message to be received. We must remain focused on the fact that this is a long-term investment in the future of our practices and our professional specialty. We must be patient. By pooling our resources as an association, we can accomplish much more than any single member can do on his or her own.

While there are some programs within AAO and PCSO that I may not use, there are many that I do choose to use. There is value in the opportunity to use all programs. What may not be a useful benefit for me may be an exceptionally valuable benefit for my colleague. Membership in an association means we work together for the mutual benefit of all our members. That will always mean that I help pay for something that I may not use, but that is of value for my colleagues. The reciprocal of that is also true, and I'm grateful to those members who help support programs that are valuable to me—even though they may not use them. I especially appreciate those who do so without complaint.

I previously mentioned the value of PCSO educational programs. The showcase of these programs, the PCSO Annual Session, will soon be underway. It's not too late to join us; you can still register online prior to the meeting, and onsite registration will be available for the Centennial Celebration in Monterey. Mr. Phillip Rollins, former PCSO executive director, will be joining us as honorary chair of the meeting, and I look forward to seeing him. Our dedicated Annual Session Planning Committee has planned a great program. I owe them a debt of gratitude and I thank them for the many hours that they have dedicated for the benefit of our members. I also thank our exhibitors and sponsors for the role they play in making our meetings and our practices successful.

It has been my privilege to serve as PCSO president this year. I'm grateful for the opportunities I've had to serve within PCSO, the AAO, and my component society. These opportunities have enriched me personally and professionally. I invite you all to look for opportunities to serve in your profession and community. I promise you that your lives will be enriched as you do so.

As Phil can attest, now is a busy time for a PCSO Executive Director and staff as we prepare for a wonderful PCSO Annual Session. We are grateful to Phil for contributing the Executive Director column for this issue. I know our readers will enjoy his update and message. . .Hope to see you all soon in Monterey! –Jill

Retiring? Now What?

By Phillip Rollins, PCSO Executive Director 1985-2007

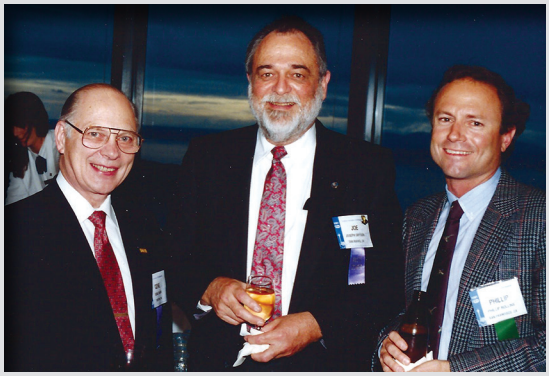
This was the question facing me in 2007 upon retirement after 22 years as PCSO executive director and 27 years in the not-for-profit association arena. Spouse Jane and I spent the next year paring down the "to do" list that had accumulated over time and began spending summers at Jane's family lakeside cabin in Northern Minnesota. During that time, I also took time to consider serving as a volunteer for number of potential organizations. There are many, from groups focused on one specific area to others with wide-ranging goals.

PCSO PAST-PRESIDENT ROBERT KUHN (DECEASED), THEN-AAO PRESIDENT EUGENE BRAIN, AND PHIL ROLLINS, AAO ANNUAL SESSION, SEATTLE, 1991

During my working career, I was always involved with one or more various professional associations, including Meeting Planners International, Professional Convention Management Association, American Society of Association Executives and the Dolphin Swimming and Boating Club, one of two San Francisco Bay open water swim clubs. Looking back, it all started with leadership positions with the Sigma Nu fraternity at the University of Arizona.

Over those many years of working and volunteering in this non-profit world, I learned skills, designed and initiated programs, and achieved a solid knowledge base of how such organizations operate. These were skill sets that would be attractive to other not-for-profit organizations and I wanted to make a difference somewhere, some how. One of the important stipulations was to attend as few meetings as possible! Been there, done that.

After investigating several different volunteer organizations, I settled on the San Francisco Bay Area American Red Cross chapter. The idea of assisting



PCSO PAST-PRESIDENT AND PAST AAO SPEAKER OF THE HOUSE JOE GRYSON, AT A PCSO MEETING

CURRENT PCSO PRESIDENT ROBERT MERRILL, PCSO ANNUAL SESSION, HONOLULU, 2001

people at times of disaster and the hands-on nature of the volunteer work were attractive. While disaster response proved to be an important part of what I now do for Red Cross, most of the work is directed towards disaster preparation, an endless and sometimes frustrating endeavor.

Red Cross training started in 2009, with a number of courses and seminars in subjects such as emergency shelter operations, disaster logistics, disaster assessment, emergency response vehicle response, CPR and basic first aid, food safety, mass care, and psychological first aid.

Over the course of several years, this training and field experience led me to become a Marin County disaster response team leader and the coordinator of over 130 county emergency shelters. Most of our local disasters are house or apartment fires, typically several each month. In addition, we are often called in by other counties to assist their disaster response or shelter volunteers. While the disaster response work is intense and immediate, the shelter work is an important aspect of the county preparation for a major disaster; earthquake, tsunami, hurricane, and major fires. It has been meaningful and exciting to be a part of these efforts.

In 2007, when Jane and I began spending summers at the Minnesota cabin, another volunteer opportunity presented itself. The state of Minnesota, land of 10,000 lakes, had for at least 20 years been fighting against the spread of aquatic invasive species. Bay Lake, a community we share with 450 other cabin owners, is particularly vulnerable to this potential problem due to its great fishing, calm waters, and relative proximity to Minneapolis. Invasives are primarily spread by boats, which carry them from an infected lake to a clean one. For over five years, our lake association has operated a program of monitoring boats coming into and leaving our lake. About four years ago, Jane and I signed on as boat monitors, spending a few hours during the summer speaking with boaters about the invasive specie threats and checking boats. Two years ago, I took over managing the overall effort.

Through an informal PR campaign, we recruited over 130 monitor volunteers, who, along with several paid workers and fish and game inspectors, monitor boats from 7am to 6pm every day. The scheduling of these different people

CAO PAST-PRESIDENT HAROLD BERGH AND PHIL WITH SENATOR DIANNE FEINSTEIN, AAO LEGISLATIVE CONFERENCE, WASH, D.C., ABOUT 2000

is a bit of a nightmare at times, but an electronic calendar and email make it all work. So far, we have avoided the dreaded zebra mussel, quagga clam, and other nasty invasives. Once in a lake, these creatures destroy many natural inhabitants and are impossible to eliminate.

This volunteer work has unfortunately led to more meetings, planning, scheduling, and supervision, but all for another good cause.

Most of the orthodontists I came to know over the years are talented, bright, and motivated. After retiring from practice, you may well find a volunteer "home" in an area completely different from orthodontics. The not-for-profit organization needs are urgent and many would be blessed to enjoy your talents.

With a significant number of PCSO members considering retirement, I hope my story will instill some motivation to become involved in an aspect of giving back to a society that has given all of us so much.

CAO PAST-PRESIDENT BILL BARTON, AAO PAST-PRESIDENT DONALD POULTON, AND CAO PAST PRESIDENT HAROLD BERGH WITH PHIL AT THE AAO LEGISLATIVE CONFERENCE, WASHINGTON, DC, ABOUT 2000

See you in Monterey

To help celebrate the 100th anniversary of the founding of PCSO, President Rob Merrill has invited all the past presidents and me to attend the October Annual Session in Monterey, an invitation I gladly accepted. It will have been five years since my retirement and last Annual Session, coincidently also held in Monterey. I look forward to renewing many old friendships and being part of the profession one last time.

Thank you once again for allowing me to participate in the management of PCSO for 22 wonderful, fulfilling, exciting years. It will be an honor to be with you again.

1912 # A Century of Smiles 2012

100 Years of PCSO: *A Retrospective*

By Jill Nowak, PCSO Executive Director

As we celebrate 100 years of PCSO, it is good to take a look back at our shared history.

The leaders and members who built PCSO into the outstanding society it is today are too numerous to mention. Each individual contributed their support, expertise and care to the business of PCSO and the profession of orthodontics. Every PCSO member benefits from their wisdom and generosity.

As you think about the past 100 years, consider how you can be part of the next Century of Smiles with PCSO...

THE 1910s

Most history buffs think of 1912 as the year that Titanic hit an iceberg and sank into the Atlantic Ocean. But 1912 was also the year Arizona and New Mexico became states, Alaska experienced an earthquake measuring 7 on the Richter scale, and the South Pole was discovered.

It was a good year to form lasting organizations—Juliette Gordon Low founded the Girl Scouts in 1912. And it was also the year when a group of alumni from the Angle School of Orthodontia started thinking about formalizing their group. . .

PCSO was formed in 1912/1913 as the Pacific Coast Society of Graduates of the Angle School of Orthodontia. In 1917, the name was changed to the Pacific Coast Society of Orthodontists, and members were no longer required to have graduated from the Angle School.

There were nine original members of PCSO—including one woman—Genette Harbour! Dues were $5 per year—that would be the equivalent of 125 dollars today. For context, average US household income was $1,033, a new car cost $940 and gas was 7 cents per gallon. Federal spending was $.69 billion (yes, that is "point 69 billion!) and the DOW Average was 88 (yes, just 88 with no zeros!)

The PCSO consisted of three "sections"—Southern California, Northern California, and Washington/Oregon. It would be 1930 before PCSO's regional scope would grow to include more states.

THE 1920s

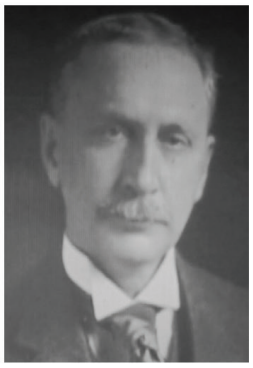
Think of the 1920s in the U.S and Canada and you probably think of Jazz and Gin, Flappers and Flatfoots and Babe Ruth with the New York Yankees. While much of the decade was marked by innovation, excess, and evolution, the decade started on a dark note. . .

In 1920, the world was just emerging from a two year battle with a pandemic—the Spanish Flu—that killed more than 40 million people worldwide. A dollar in 1920 was the equivalent of $103 today and there was plenty to spend those dollars on. In the first half of the decade alone, commercial radio became widely available, automobiles hit the market with a base price of less than $500, and TV was soon to come. And amidst all these changes, orthodontics and the PCSO were changing, too.

Becoming an orthodontist before 1920 was limited to either becoming a preceptor or attending a six-week course at one of the three proprietary schools—Angle School (established 1900), International School (1907), or Dewey School (1911). The Angle College of Orthodontia closed in 1927, but the first university orthodontic training program on the West Coast would open just three years later at the University of California in San Francisco.

1912

Pacific Coast Society of Graduates of the Angle School of Orthodontia formed with 9 members from California, Oregon, and Washington



Edward H. Angle

1910's Facts

Name changed to Pacific Coast Society of Orthodontists in 1917

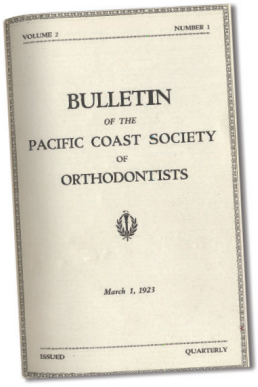
TIMELINE artist: Lisa Troehler

The most popular appliance of the day was Angle's ribbon arch, with the Crozat, the Mershon lingual, and the McCoy open tube also in general use. James D. McCoy (1884-1965), a 1905 Angle graduate, made important contributions in teaching, radiography, and publishing... authoring two authoritative manuals, "Dental and Oral Radiography" and "Applied Orthodontics." In 1925, Angle announced the "Edgewise" appliance, and at the end of the decade, Spencer Atkinson came out with the universal appliance, and Joseph Johnson introduced the twin wire. Gold was the only material used for bands and arch wires. Bands were pinched and soldered.

On the organized orthodontics front, much was afoot. In 1921, PCSO adopted its constitution and bylaws—forming the first board with three officers and three representatives. Shortly thereafter, one of the most lasting institutions of the PCSO was born. The first PCSO *Bulletin* was published in 1922 under the direction of Editor, Dr. Carl Engstrom. It consisted of 12 pages of text—no illustrations, and has been issued to PCSO members on a quarterly basis ever since.

1922

First PCSO *Bulletin*
12 pages, text only



PCSO *Bulletin Vol. 2 #1*
March 1923

1925 saw the first PCSO "Annual Session"— that wasn't really annual at all. The meeting was held every other year, corresponding to the officer terms at that time. But it was three days in length and featured the notable lecturers of the day, so it was essentially the meeting PCSO members enjoy today.

PCSO ended the decade with 72 members—all men. Although a woman (Genette Harbour) had been a founding member of PCSO, after her passing it would be 33 years before PCSO had another female in its ranks. While 72 members was considered large at the time, the membership was about to explode, with additional component organizations joining PCSO in the early 1930s.

1925

First PCSO
Annual Session
in San Francisco

THE 1930s

The 1930s were a time of great change, in the U. S. and around the world. A decade that began with great economic depression and ended with the start of a great war also brought many advances:

- Charles Birdseye introduced the first frozen foods
- Warner Brothers premiered the first Technicolor movies and Kodak the first color photos
- And, quite accidentally, a Massachusetts housewife discovered chocolate chip cookies!

These many discoveries were at the beginning of the century and, not surprisingly, the beginning of the century brought growth and advancement to the PCSO, as well.

In 1929, the ABO made orthodontics the first true dental specialty, spurring growth in the profession and organized orthodontics. In the first half of the 1930s, graduate programs in orthodontics took off—most notably for PCSO, Spencer Atkinson was the first chair of the USC program that began in 1934 and Charles Tweed was just beginning to create a center for orthodontic learning in Tucson, AZ . Orthodontic manufacturers were created to support the business of orthodontics and new techniques continued to be adopted by practitioners who started study groups focused on the various approaches and appliances.

Marketing was informal and local—in fact, orthodontists who advertised were "excused" from professional membership. Many discussions centered on the threat of non-orthodontists practicing orthodontics and the need to educate the public about the importance of caring for their teeth and consulting a specialist (sound familiar?). The full fee for most cases was about $500 but the Great Depression also ushered in a great decrease in patients. Near the end of the decade, there were patients but many orthodontists left to join the war efforts and supplies were rationed creating a difficult work environment for those left behind.

PCSO underwent rapid growth during the 1930s in spite of challenging circumstances. Right off the bat, PCSO membership grew by about 30% when Arizona, British Columbia, Idaho, and Nevada joined the society, bringing the membership total to nearly 100 orthodontists. PCSO was holding biennial meetings—some with very low attendance but all with lots of lively conversation about the rapidly changing specialty of orthodontics. To keep the meeting relevant, PCSO formed its first committee—the Program Committee—in 1930.

The early 1930s brought a huge challenge to the continued existence of the PCSO *Bulletin*. Because the publication was costly and there was concern about high dues in such a poor economic environment and also because the work to publish the PCSO *Bulletin* was time-consuming and burdensome, many thought production should be ceased. In both 1932 and 1933, there were mo-

1920's Facts

PCSO had 9 charter members – 1 was a woman!

The "Edgewise" Appliance was introduced in 1925

tions before the board to discontinue this publication. In 1933, just before the vote, Dr. Ruben Blake stepped up to become the Editor and remained in this position for 26 years! Under his direction, the PCSO *Bulletin* achieved prominence and took a step toward being financially self-sustaining with an ad sales program (the first ad was placed in 1936.)

Also in 1936, the PCSO became a constituent organization of the AAO and ushered in Dr. James McCoy as its President. The decade was winding down, but the specialty was gearing up! The 1940s held much promise—it would prove to be a period when patients were plentiful, education was advancing rapidly and the short supply of office space and capital would usher in many successful professional alliances and partnerships.

THE 1940s

Throughout the early and mid-1940s, our whole country was focused on the war—over 22,000 dentists served in the armed forces and there were 3,000 military dentists in the field. Their return home in 1945 would create swelling ranks in post-graduate study, particularly in orthodontics. With GI Bill funding and a shortage of office space and resources, continuing education to become a specialist proved to be a smart career move. Many of these specialists—especially orthodontists, would spend much of their professional career treating the "baby boomers" soon to come.

Dentistry celebrated its centenary in Baltimore in 1940. The first dental school (Baltimore College of Dental Surgeons), the first dental society (American Society of Dental Surgeons) and the first dental journal (The American Journal of Dental Science) were founded in 1840. In the program of this centenary celebration, orthodontics is recognized as the fastest growing and most advanced dental specialty noting: "...orthodontics has moved far beyond a mechanical process of moving teeth to become a biological/medical field as we recognize the need to prevent malocclusions and the benefit of early treatment of dentofacial anomalies."

Orthodontic programs were springing up at many dental schools trying to meet the higher demand from GIs. Until 1946, there were three programs on the West Coast—University of Southern California, University of California (later to become UCSF) and the unusual Curriculum II program which was also at the University of California. Led by George Hahn and Ernest Seltzer, the Curriculum II program was an intense three-year program designed to meet all requirements of the California Dental Board and the American Dental Association with an additional 1,400 hours in orthodontic training to comply with the requirements of the American Association of Orthodontists. In 1946, the University of Washington founded its orthodontic program, adding much needed capacity for post graduate study.

Throughout the '40s the profession was divided into two camps—those who supported Edward Angle and those who supported anyone else! Charles Tweed was a challenger to Angle and his work in Tucson, Arizona would have a profound impact on the profession. Spencer Atkinson, too, broke with Angle and developed the universal appliance, infringing on Angles' patents. Not to be deterred, Atkinson went on to found Unitek with Ed Mayo in 1948.

Organized dentistry and orthodontics went through great changes in the decade as the organizations tried to keep pace with the rapidly changing world around them.

The American Society of Orthodontists had just become the American Association of Orthodontists—and PCSO was not the largest constituent—that was the New York Society of Orthodontists with 167 members. PCSO was the second largest with 86 members. Over the next 30 years, the population would shift and PCSO would become the largest constituent of the AAO, an honor it still holds today. A major effort of the new constituent and structure of the AAO was to combine the "Angle Orthodontists" with all other members of the profession. It would take some time, but eventually the members of AAO became a coherent group working toward common professional goals.

The PCSO saw a relatively quiet decade as the world, the AAO, and dentistry changed around them. There was little worry about competition as the baby boom had taken care of that issue. In fact, the most pressing problem of the day was ensuring that all orthodontists practicing performed at a high level of quality and served patients well.

Along with the rest of the world, things at PCSO would become more political in the 1950s and 1960s, but the end of the 1940s found the membership happy to be able to get back to their annual meeting and their practices after the disruption of war and its aftermath began to fade.

1930

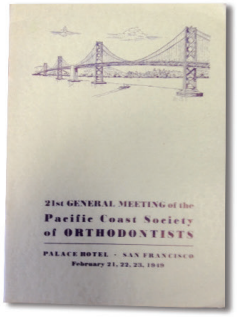
Arizona, British Columbia, Idaho and Nevada join PCSO

1936

PCSO becomes a constituent of the American Association of Orthodontists

1949

The 21st General meeting on the PCSO was held at the Palace Hotel in San Francisco



1930's Facts

ABO certification makes orthodontics the first true dental specialty

The average orthodontic case cost $500.

THE 1950s

The '50s are an idealized decade. . .the innovations—color TV, seat belts, and hula hoops—the singers known by one name—Elvis, Fats, Buddy, Dizzy and Ella—and the movie stars who became icons—Marilyn Monroe, Marlon Brando, Elizabeth Taylor. One movie star, Grace Kelly, even became a princess, and one princess, Elizabeth, became the Queen of England.

But in the 1950s we also found ourselves in a new era of international distrust, warring ideologies and burgeoning civil rights. PCSO members would see both sides of the 1950s in their profession. It was in some ways a fun time to be an orthodontist. Business was booming, research findings were amassing at a rapid pace, graduate programs were well funded and the Society was growing.

The first half of the 1950s found orthodontists settling into practice, evaluating their indebtedness to the profession and examining their relationship to a professional organization like the PCSO or even AAO. Methodology and scope of practice were huge issues on the regional, as well as national, front. Establishing an identity for the profession that was significantly different than dentistry was a focus of many leaders.

In fact, very early in the decade, the Judicial Council of the AAO was focused on the activities of three Los Angeles practitioners who designated themselves "dento-facial orthopedists," even after the AAO Nomenclature Committee had recommended a bylaw that stated "members of the Association shall practice the specialty as 'orthodontists.' " The issue was hotly contested by those who felt the term did not convey the highly specialized practice and it would be a few years before the issue was settled.

Until 1955, PCSO continued to hold its bi-annual session in San Francisco. However, the AAO Annual Session—in its second visit to the West Coast—held its Annual Session in San Francisco in 1955, which persuaded the PCSO to move to Seattle for its session in 1956 and thus started the tradition of locating the scientific session (later Annual Session) in various locations throughout the region. Besides, California was going through changes of its own—Disneyland opened in 1955 and tourism to the state was becoming an even bigger part of its economy.

In 1956, PCSO had 330 Active members. Membership requirements were five years in the practice of orthodontics and 1,500 graduate hours. Dues were $10 per year. PCSO was the second largest constituent in the AAO (New York Society of Orthodontists remained the largest) and the East Coast orthodontic programs had gained prominence, taking the focus off of programs in California and Arizona. In fact, it was a period of relative "all quiet on the western front."

Two issues were paramount to PCSO in the late '50s. . . education and patient transfers. Work began on "beefing" up the scientific session and working to attract the top speakers of the day to the PCSO meeting and the PCSO representatives were very active on AAO committees that struggled to reconcile varying educational requirements for membership across the U.S. and Canada. AAO history considers the negotiations over these two issues to be the genesis of the current House of Delegates model of governance. Under the House of Delegates, PCSO would come to take a leadership role at the national level.

As the era ended, the national focus had shifted inward—to Rosa Parks and civil rights, and to a very young Gloria Steinem who was just beginning to shine a light on women's issues. Orthodontists were still practicing in the "golden age," but signs of scrutiny from governmental agencies were beginning as PCSO was sued for denying admission to two members and the AAO was investigated for restraint of trade due to strict oversight of advertising in publications. Also, private health plans were expanding to cover dental and specialty procedures. And in California, an unprecedented expansion of public health was beginning to change the way patients obtained services.

The TV remote was first produced in 1958 and viewers were starting to get used to variety. In the next few years, multiple solutions to every case would emerge.

THE 1960s

The '60s aren't called the turbulent decade for nothing! How can one paint a picture of a decade that saw Elvis in the army and millions of others protesting war? A time when the most watched broadcast was the "Miss America Pageant" and the most vivid TV ad was the famous "Daisy Ad?" A decade when permanent press fabric was invented—and "The Feminine Mystique" was written?

1952

Hawaii and Alaska join PCSO

1956

PCSO Annual Meeting held in Seattle, WA, first time outside of San Francisco

1940's Facts

Dentistry celebrates its 100th anniversary in 1940

1950's Facts

PCSO membership required 1,500 hours of graduate education, 5 years of practice and submission of 5 completed cases

A decade of riots and assassinations, Woodstock and moon launches, is impossible to capture in a paragraph—so we won't try. We will instead focus on the equally turbulent times of PCSO in the 1960s.

It is evident that in 1960 when the PCSO Board denied the membership application of a member from Lakewood, California, no one anticipated that the resulting lawsuit would engulf the PCSO for the next 15 years. Coupled with a similar suit in 1962, the legal proceedings required energy and resources from PCSO at a time when rapid environmental change also demanded attention. One applicant had been denied membership for practicing with a non-orthodontist and, after several court rulings (including three California Supreme Court reviews), the PCSO was ordered to allow his membership and change their rules in this area. The second applicant actually failed an "admittance test" and the PCSO was validated in their decision noting that the Board had acted in the best interest of the public in the matter. But those resolutions did not come until the early or mid-1970s and after many hours and dollars spent in defense of the PCSO positions.

These lawsuits, and other factors, would bring a fundamental change to membership criteria. At the start of the decade, an applicant had to graduate from a specialty program, have five years' tenure in the "exclusive practice" of orthodontics and three years' practice with an AAO member. An applicant also had to take a test and submit five case reports that were reviewed and deemed acceptable. 1969 saw a more lenient list of requirements and membership was growing at a steady rate.

Other challenges faced PCSO members during the 1960s: a birth rate decline, a "glut" in the market from all the new ortho schools—which graduated more students each year—increased competition from general practitioners who were feeling not only the declining birth rate but the positive impact of fluoridation and the administrative burden of processing insurance claims. The cost of "doing orthodontics" took a major step up and in areas where the market couldn't keep up, the margins from a practice went down.

It wasn't all bad news; PCSO kept growing—in spite of the distractions. In 1963, a new constitution and new bylaws were approved by the membership. The number of members grew rapidly and dues increased from $10 to $65 during the period. PCSO started the decade by hiring a part-time secretary and investing in some basic office equipment. Most orthodontists were still very successful financially and fulfilled personally. They were fully aware that "now" was the time to capitalize on the reputation of the profession and supported a national campaign to increase patients.

Orthodontic education—from formal university programs to preceptorship programs to continuing education—was booming. And some of the biggest names in education nationwide were in the PCSO. . .Frederick West, Cecil Steiner, Frederick Noyes, Harry L Dougherty and Arthur Dugoni were all featured speakers and had great influence on orthodontic programs at various institutions.

With the new bylaws, the PCSO board expanded and the presidential term went from two years to one year. The PCSO Annual Session was touted to be "as good as the AAO" with programs on serial extraction, Begg's technic, the universal appliance and Crozats. In the late 1960s, PCSO became one of the first constituent programs to add practice management to its course line-up recognizing that, while most orthodontists were doing well, the landscape was changing and PCSO members needed to learn how to navigate it.

1964 was an auspicious year. It was the first year that the AAO convened the House of Delegates as the governing body of the national association. PCSO sent 19 delegates—1 less than the largest delegation (NESO.) The doctors were:

Herbert Muchnic, Trustee, Robert Boyd , Warren Brown, William Coon, Lloyd Cottingham, Earl Crane, Robert Ervin, Ted Harper, Harry Hatasaka, Robert Kemp, Warren Kitchen, Philip Konigsberg, Ronald Koster (also served on the Committee on Credentials), Charles Linfesty, Harold Odden (also served on the Committee on Rules and Order), Richard Philbrick, John Rathbone, John Raynes, and Fay Van.

These gentlemen, just as PCSO Delegates do today, convened with fellow members to set the direction and approve the programs of the AAO.

In 1968, the AAO once again held its Annual Session in San Francisco. The AAO had changed its bylaws, had settled in St. Louis and hired its first executive director, James Brophy.

As the decade drew to a close, there was a lull in concerns and a time to organize and become more businesslike in the approach to problems and opportunities. PCSO would excel in these endeavors as the organization moved into the 1970s.

1961

Alberta and Saskatchewan join PCSO

1964

First PCSO Delegation to the AAO House of Delegates

1967

PCSO names first Trustee to the AAO (George Hahn) and hires first Executive Secretary (Ray Morris)

1960's Facts

PCSO adds practice management track to Annual Session courses

THE 1970s

Go to your basement or attic and dig out your leisure suit and lava lamp (I know you have them!) and we'll take a look back to PCSO in the 1970s—a decade of contrasts that saw the genesis of many ideas that dominate life today.

The contrasts—the most popular fashion was a pair of billowing bell bottoms paired with a skin tight turtleneck; two best-selling novels of the decade were Erich Segal's "Love Story" and Stephen King's "Carrie" and the 1972 Olympics were marked by the triumph in Mark Spitz' Gold Medal record and the heartache of the terrorist kidnapping of Israeli athletes. It was a difficult decade with many wars, a few energy crises and the Watergate scandal. But Earth Day was founded in 1970 and the focus on world peace and environmentalism also increased.

The innovation of the decade was amazing and our lives are still dominated by email (1970), cell phones (1971), voicemail (1973) and video games (Pong Home Version-1974). While the "Me" Generation listened to soft rock and disco on their Sony Walkman and tuned into the first pay TV station (HBO debuted in 1972), we were planting the seeds for satellite TV, portable digital music and the slackers who are mastering "Call of Duty" today.

As PCSO begins the 1970s, the first trustee to the AAO, Dr. George Hahn of San Francisco is transitioning to AAO president, Mr. Ray Morris is beginning his third year at PCSO executive secretary—a newly created staff position, and Dr. Bill Parker is the editor of the PCSO *Bulletin.* Dr. Herbert Muchnic has joined the AAO Board and will serve as trustee and then as AAO president in 1974-75.

Dr. Hahn, AAO president, had a long history of service with the PCSO and AAO. He became involved on the national level as chair of the AAO Master Qualifying Committee, which administered the preceptorship program. While serving as trustee, he served an interim term as president of the AAO in 1968-69 replacing a president who passed away during his term. Dr. Hahn then served his presidential term. During his time in leadership, Dr. Hahn led the way in expanding AAO's international presence and its inter-disciplinary relationships, laying the groundwork for those who followed to ensure AAO's place as a leader in the dental profession throughout the world.

While much was happening on the national level, the Pacific Coast was a leading indicator of many changes to come over the next several decades. In anticipation of the rising importance of clinical and administrative staff to the successful operations of an orthodontic practice, PCSO hosted the first staff education program at its 1970 Southern Regional Meeting. "Staff Power" focused on how staff members could support the doctor in all areas and emphasized teamwork and patient relations. This program began the tradition, soon integrated into all regional meetings and Annual Sessions, of providing orthodontic staff with the tools they needed to succeed in their positions. In the mid-70s, increased emphasis on clinical training for staff would emerge in response to the 1974 California bill specifying that trained, registered assistants could, under supervision, perform certain procedures. PCSO led the way with courses which proved popular far beyond the California—and PCSO—borders when they were later presented at AAO Annual Sessions.

As in the 1960s, PCSO was faced with a lawsuit that would be a precursor of changes on the national level. In 1975, in Kean vs. PCSO, $200,000 plus punitive damages were sought for "damages resulting from injuries sustained through the negligent conduct and malpractice" of one of its members. At issue was the treatability of temporomandibular joint dysfunction and the question of doctors' obtaining informed consent before treatment. PCSO settled for $4,000 and led the crusade for the legal groundwork to create an informed consent form that would eventually be adopted by the AAO and made available to all members to help mitigate the possibility of a similar suit on an individual, constituent or national level.

In 1970, there were 60 dental schools and 49 of these schools had an orthodontic program. Three hundred and sixty new orthodontists were entering the profession each year, even without the preceptorship program, which was discontinued in the early 1970s. Many of these new orthodontists found California, Washington and the northwest provinces of Canada attractive places to set up practice and soon the PCSO would exceed 1,000 members, even with the loss of Montana to the Rocky Mountain Society of Orthodontists. The membership made PCSO the largest member of the AAO, surpassing the Northeastern Society of Orthodontists for the first time. PCSO remains the largest constituent even today though a recent shift of members to the southwest has tempered that dominance somewhat.

Another arena of national renown was the PCSO *Bulletin.* In 1973, Wayne Watson became editor after five years with Dr. Parker at the helm. A few years before, the PCSO *Bulletin* had become

1971

PCSO passes 1,000 members and becomes the largest constituent in the AAO

1973

PCSO Bulletin wins first "Golden Scroll" award

1977

Board of Directors expands to 12 members to accommodate new components and provide equal representation

1970's Facts

PCSO hosts "Staff Power" – the first CE programs to focus on orthodontic staff

President George Hahn expands international AAO

a national publication and that year it won the "Golden Scroll" award. Dr. Watson showed great leadership and vision as editor through 1979 when he became editor of the AJO-DO. Dr. Watson was succeeded by Dr. David Turpin, who would continue the award-winning streak throughout the 1980s.

In governance, the board expanded with the expanding membership. The board expanded to 12 members in an effort to provide more appropriate representation of all components. To accommodate the increased work of a larger and more active board of directors, Ray Morris (executive secretary) was assisted by a new part-time administrative assistant and expanded office budget.

Throughout the 1970s and '80s, orthodontists in PCSO and nationally struggled with the proliferation of prepaid dental and insurance programs coupled with the declining youth population. A "fight them or join them?" question dominated most discussions until a national lawsuit in 1976 charging restraint of trade answered the question—orthodontists would join them. Following on the heels of that lawsuit was another which led to a 1977 Supreme Court ruling resulting in the lift of the ban on members' advertising. AAO members struggled with the adopting individual marketing of their practices—a method of attracting new patients that had long been disdained by conscientious professionals. They also faced a strained budget as a national marketing campaign aimed at the adult market brought along with it a 77% dues increase and a $200 assessment. The marketing efforts of the late '70s resembled those of 2012 in their target audience and objectives.

Another parallel to today was the relationship with referring general dentists. The declining patient pool, the ever-increasing power of the consumer voice and the intrusions of the government and third-parties, combined with a growing number of clinics and a glut of dental and orthodontic graduates, made for a very unstable environment and increased strain between specialists and general dentists. A visible marketing campaign touting the expertise of orthodontists brought to the forefront the perception among general dentists that orthodontists held an attitude of superiority.

So the 1970s ended as they had begun—unrest and uncertainty ruled. This would continue into the early 1980s, but the '80s would also be the era of stabilization for the profession.

1985

Phillip Rollins is named PCSO Executive Director. PCSO is headquartered in San Francisco

Phillip Rollins

1986

PCSO becomes the largest constituent in the AAO

1980's Facts

Membership requirements of 5 years of practice and 5 cases are dropped

THE 1980s

Ah, the 1980s. It seems that it wasn't so long ago that we were listening to Madonna, Aerosmith, the Rolling Stones...oh, wait a minute, we are still listening to them and seeing them on TV today! And so it is in the world of orthodontics.

Consider:

- In the 1980s, focus on continuing education was equally divided between clinical topics and practice management as orthodontists realized that a successful practice required both high-level clinical skills and a good business sense;
- On the national front, the AAO Public Awareness Campaign was focused on the "yuppie" market who would utilize discretionary income to improve the smiles of their children—and of themselves;
- Growing concern regarding overlap in the various dental specialties and general dentists resulted in the ADA hosting a "dental specialty forum" chaired by then ADA President-Elect, Dr. Arthur Dugoni.

The '80s were a profitable and lively time for the U.S., for Canada, and for orthodontists. While the decade started in a slump, by the mid-1980s the economy was strong and discretionary income was high. Who can forget Gordon Gecko in the 1987 film "Wall Street"? Mr. Gecko and many other prominent figures (fictional and real) of the day were demonstrating how to live—and how to look—prosperously.

A focus on appearance as an asset arose—studies proved that more attractive people were happier, richer and more successful. And everyone wanted that—for their children as well as for themselves. In addition, a growing awareness of total health and increased longevity gave the orthodontic profession an opportunity to focus on the importance of dento-facial health and how proper treatment could help a patient maintain their own teeth and avoid discomfort caused by improper alignment and other issues.

PCSO continued to grow and play a leading role in national issues that focused on public education, and guidelines for ethical advertising as well as protecting the profession. The 1980s saw

the beginning of advocacy efforts—first in the insurance industry as pressures of capitation and public health initiatives greatly affected PCSO members and then in governmental affairs.

PCSO participated in state government through its involvement with component societies, particularly in California. And PCSO representatives to the AAO began to talk about the ways in which government regulation impacted their daily lives. This was particularly true of OSHA and other workplace safety programs. While important and vital to protecting the staffs on which PCSO members relied, sometime unintended consequences of regulations created a challenge for small businesses—including orthodontic practices. Providing information and education to appropriate governing bodies helped mitigate some of these consequences.

Things were changing within the PCSO Board and staff leadership, as well. The Board of Directors had grown to 12 members, and the Executive Committee of officers had been empowered to act on behalf of the board between meetings. The requirement for new members to complete a case had been dropped—several years after it was dropped by the AAO and many other constituent societies—due to the PCSO board's quest to ensure professional, competent members and protect the profession.

Membership continued to grow rapidly in the 1980s and by decade's end was approaching 2,000. Some members wanted to "break up" PCSO into two or even three constituencies but that was not to be. Under the expanded board, some things changed rapidly—what had been free registration to the PCSO Annual Session became a $25 registration fee, and there were other—more monumental changes.

Ray Morris had served as PCSO Executive Secretary for 15 years when he retired in 1985. He would be replaced by Phillip Rollins—an Executive Director who served a 22- year term ending with his retirement in 2007. Phil quickly mastered the many challenges of such an active and rapidly growing constituent and became the "face" of PCSO for many leaders and members. Phil took a thriving organization and didn't lose a step of momentum. Throughout the '80s,' 90s and 2000s, PCSO would see many changes—all of them positive.

You can't talk about the positives in PCSO without mentioning the *Bulletin.* In the 1980s, Editor Dave Turpin continued to enhance the PCSO *Bulletin.* Under his leadership, the *Bulletin* grew to (almost) its present size-allowing three columns on slick paper, increasing its advertising space, and instituting the popular "Portrait of a Professional." As a result, it won the Golden Pencil Award ('81) and an honorable mention in the Golden Globe competition ('89). Dave left the *Bulletin* in 1988 to edit the *Angle Orthodontist.* David Crouch took over until 1991, when the reins were handed to current PCSO *Bulletin* Editor, Dr. Jerry Nelson.

And the 1990s would see tremendous strides and changes, as well.

THE 1990s

Sometimes called the "Information Age" or the "Decade of Communication," the 1990s were both a time of great growth and a time of great challenges. The growth was fairly easy to predict given that most baby boomers were in family mode. Many of the challenges no one could have predicted!

During the decade, PCSO membership grew from about 2,000 to just over 2,500 as new graduates continued to flock to the West...with Seattle, Portland, Las Vegas and Vancouver now drawing as many new members as California cities and the population growth in these cities supported the new practices. In California, San Diego and all areas south continued to boom—so much so that new orthodontic offices would experience a pretty quick trajectory from start-up to capacity. In 1994, PCSO dropped the final barrier to membership for new graduates—the submission of five initial patient records, which further increased the number of students who transitioned directly to PCSO membership.

Case completion rates and patient satisfaction increased with the availability of new materials and new technology. Composite bonding dramatically altered the application and appearance of braces and thinner, lighter wires made moving teeth without extractions a better alternative for many cases. Another technology made case management easier—the personal computer (PC) and computer networks. While an orthodontic office will always require professional and capable staff to run efficiently, computerized scheduling and record-keeping allowed those staff to focus on the patients and their families rather than on their paperwork.

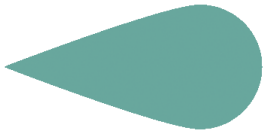
Relationships with general dentists and other specialists were on sound footing—the national marketing campaign was aimed at strengthen those referral ties and creating joint materials

1991

PCSO membership reaches 2,000 orthodontists

1994

PCSO Board expands to 14 with representatives from all components



1990's Facts

Dr. Norman Wahl publishes "The Decline of the Golden Age of Orthodontics" in 1997

and experiences so that patients could interact with their full dental "team." On the local, state and national level connections between the dental societies and the orthodontic societies had never been better.

So, it was all good, right? Well, it might seem like it looking back now, but then-AAO President Robert Johnson had a good point when he said, "Within these advances lie the seeds of our future challenges." Sleeker and more technologically advanced appliances gave the impression that the "appliance, not the orthodontists is treating the patient." This product-focused approach can be seen in consumers today. Reliance on referrals can be a challenge when the referrer competes in your market and the flood of great orthodontists to one area of the country can become an overabundance when the population moves on. In fact, PCSO member Norman Wahl wrote a master's thesis entitled, "The Decline of the Golden Age of Orthodontics" in 1997. The trends he pointed out were alarming and oft quoted in the industry. Even now, his points are mentioned in articles and discussions about the state of the profession.

Also in the '90s, things were changing with the ADA. . .actually, both ADAs. The American Dental Association was once again reviewing its relationships with all dental specialties and the American with Disabilities Act was changing the layout of many practices. Other regulations were creating changes, too—some changes were positive and benefitted orthodontic staff and patients. Other regulations were burdensome and many state societies, especially California, found new purpose in advocating for more moderate guidelines.

The PCSO Board was adapting to the increased need and capability for information and communication. The number of board members was expanded to four representatives from California and one from each of the 10 other component societies along with the officers and the Editor of the PCSO *Bulletin*. While the smaller components "shared" votes, this new composition created a new sense of unity among all PCSO components, strengthened attendance at our Annual Session and provided opportunity for emerging leaders from Hawaii to Alberta—and everywhere in between. That unity and leadership remains the hallmark of the Pacific Coast Society today.

THE 2000s

Changing together—that might be a good way to describe the 2000s and PCSO. While the environment around PCSO members and leaders would change rapidly during the millennium decade, PCSO leaders worked closely with component organizations and the AAO to leverage these changes to serve members better. The sound governance and business practices the PCSO had put in place in the 1990s would serve the organization and its members well during this turbulent period.

Just a reminder of what was not in the shared cultural knowledge at the beginning of the decade:

The iPod did not exist at the beginning of 2000 and the iPhone and iPad were not yet on the drawing board. "Portable computers" weighed about 30 pounds, 6% of the U.S. population used the Internet. Flat-screen TVs existed but were in less than 2% of U.S. homes and data was saved on "floppy" disks. No one had heard of "Google" or "Wikipedia"—you had to go to the library to research a person or event.

"Euro" wasn't a currency—or even a recognizable word. Most U.S. citizens did not know the phrases "red state" or "blue state" or "hanging chad" or "SuperPAC."

9/11 was just a date in the early fall.

Ten years of natural and man-made disasters, contentious elections, climate change discussions, privacy concerns, increased credit card usage, building of McMansions and growing global consciousness changed all professions and commerce—including orthodontics.

PCSO ramped up its strategic planning efforts in order to ensure the society was well positioned to support its members. The plan included the core values of PCSO—education for members and their staffs, which led to excellent patient care, advocacy for members at the national level and in the U.S. legislature, and communicating valuable information through a variety of mediums. In 2009, the Strategic Planning process evolved to include a focus on "Critical Issues,"

2007

Dr. Terry McDonald serves as PCSO Delegation Chair for final time

Terry McDonald

2008

Phil Rollins retires and PCSO hires AAO Services, Inc for management

2009

PCSO starts the "NewsWire"

2000's Facts

PCSO holds the 2001 Annual Session in Hawaii shortly after 9/11 tragedy

2010

PCSO website revamped and first PCSO webinar and podcasts recorded

2012

PCSO welcomes members to Monterey California to celebrate A Century of Smiles at its 76th Annual Session

2010's Facts

PCSO introduces electronic PCSO *Bulletin*

enabling the PCSO board to focus on the key challenges facing members so that solutions could be identified and "fast tracked" to the solution phase. As a result, PCSO has developed stronger relationships with exhibitors, component organizations, orthodontic programs and other professions. PCSO Podcasts evolved from the critical need to get financial management and economic information to members quickly and a concerted effort to perform in-depth member needs analysis and data mining on an ongoing basis was implemented.

Other changes took place that extended PCSO's outreach to members. PCSO created the monthly NewsWire, an email newsletter, to deliver news, tips and important information to members quickly and in an easily readable format. The organization also created the position of "Internet Editor" to oversee the NewsWire and the PCSO Web site, which was totally revamped in 2010. This is now a Board position.

PCSO sharpened its focus on New and Younger Members (NYM) and leadership development by inviting the chair of the NYM Committee to sit on the PCSO Board of Directors to ensure the perspective of these newer grads is reflected in discussion and decisions. PCSO supported participation in national leadership development programs for both PCSO and component leaders. As new orthodontic programs were started in the area, PCSO made contact and encouraged participation at the PCSO Annual Session as well as regional meetings, podcasts and other educational efforts.

All orthodontists faced challenges dealing with patients who led faster-paced lives and had greater access to information (some good and some bad) than ever before. Greater focus on appearance and the growth of "getting braces" as a rite of passage for adolescents and adult orthodontics led to growth in the number of people seeking to straighten their teeth. But technology and competition conspired to divide that growing pie into many pieces and then, late in the decade, a severe global economic crisis further clouded the market. Today, most PCSO members still battle these factors in their day-to-day practices and PCSO continues to develop strategies to support these professionals who make up the PCSO.

PCSO faced challenges in the 2000s and still does today. But each challenge seems to call forth the spirit of "changing together." In 2007, PCSO longest term Executive Director, Mr. Phillip Rollins, retired. Phil had built the strong foundation that served PCSO well in these challenging times. He went well beyond administering the business of PCSO and it was hard to imagine PCSO without him. But doing so was the board's challenge and they met it with an innovation solution. PCSO became the first association management client for AAO Services, Inc. Five years later, due to the hard work of many PCSO leaders, the transition has been completed and is on successful footing—all owing to the strong foundation built and the spirit that PCSO embraces of changing together and doing so successfully.

Also around that time Dr. Terry McDonald served his last year as Delegation Chair for the PCSO and its annual team at the AAO House of Delegates. Dr. McDonald had served many PCSO Presidents in this appointed role, advocated with commitment on behalf of all PCSO and AAO members and was considered a key policy maker for the orthodontic profession. He was followed in this capacity by Dr. Gary Baughman who would serve PCSO for four years and then move on to become AAO Speaker of the House.

The early 2000s brought an example of the strength and spirit of PCSO. The tragedy of September 11, 2001, occurred just a few weeks before the PCSO was scheduled to meet at its Annual Session in Hawaii. At a time when everyone was filled with anxiety at the prospect of being in the air and separated from home and family, PCSO leaders made the difficult decision to proceed with the session. Despite fear of many cancellations, the meeting went forth with a sold-out exhibit hall and over 2,000 members and their staffs attending. This scenario aptly illustrates the commitment of PCSO leaders and members.

THE 2010s

The same sense of community that brought those members to Hawaii exists today within every PCSO member and, I trust, will continue through all the decades to come.

Many thanks to Dr. Norman Wahl, whose knowledge of the history of the PCSO and the orthodontic profession provided the basis for this article.

Letter to the Editor

To the Editor:

I want to congratulate Drs. McDonald and Chan for a very worthy and timely article in the Spring issue of the PCSO *Bulletin.* As someone who has benefitted in many areas of my clinical practice from the teachings of Dr. Bjorn Zachrisson, I am fully on board with the idea of turning canines into laterals whenever possible. I might also add that I've heard Dr. Zachrisson on many occasions fully credit Dr. Tuverson for helping him develop his clinical skills in this area of his practice.

It is great to sit in a lecture room and see clinical results representing the combined work of Drs. Kokich, Kokich, Spear and Kinzer and marvel. I don't think it would be a stretch to imagine God looking at those results and exclaiming "WOW!" Likewise, looking at the results of Drs. Zachrisson and Toreskog using Dr. Toreskog's ultra-thin feldspathic porcelain veneer approach also approaches a divine experience. How many of us, however, treat a patient population that can afford this level of expertise? Need I remind all of us that as a general rule the bill for the implants comes due at about the same time that the first college tuition check is due?

There is a greater issue that needs to be considered. According to the August 24, 2011 issue of BloombergBusinessweek Magazine:

Men who do have jobs are getting paid less. After accounting for inflation, median wages for men between 30 and 50 dropped 27 percent—to $33,000 a year— from 1969 to 2009, according to an analysis by Michael Greenstone, a Massachusetts Institute of Technology economics professor who was chief economist for Obama's Council of Economic Advisers. "That takes men and puts them back at their earnings capacity of the 1950s," Greenstone says. "That has staggering implications."

It is great to have a practice philosophy of uncompromising excellence. It makes you feel good when you look in the mirror in the morning. On the other hand, you might do more for many of your patients by being a tad more pragmatic. I think it is better to treatment plan for what is probable, not just what is possible. I would love to see a research article looking at the number of implants treatment planned versus the number actually done. My guess is less than 5%.

That is why I feel Dr. Chan's approach is both so worthwhile and so timely. Besides the overall risks of negative sequelae of anterior implants in older teens and young adults, I love that Dr. Chan tries to do as much as possible for his patients without involving the restorative dentist. Bravo!

No one would accuse me of being as talented as Dr. Chan, but I've tried for years to take the same approach. When a parent wants to discuss anterior implants for her child because her general dentist has explained that is the only way to go, I take out some study models and explain what I did on this or that case. Frequently, the parent will exclaim that "if you can do that for my child, I'd be totally happy." Of course, you have to do your homework with the general dentist to make this work. As an aside, I only have one GP who refuses to meet me halfway on this issue after discussing it at length.

I feel so strongly about the advantages of anterior space closure to the average patient with missing lateral incisors that I fairly often will open space mesial of the first molars to allow complete closure of the anterior spaces. This approach still requires an implant or two someday, but the timing is not as critical, the results need not be as perfect, and when the braces come off, the patient has a nice smile. None of this prevents the option for veneers and/or bonding later in life for those who can afford it and who are more demanding as adults.

Technically, I might point out that Dr. Straty Righellis, in an article on Dr. Spear's Web site, suggests using a lower second bicuspid bracket turned upside down on canines that will be used as laterals. This gives 22 degrees of torque and a rounded bracket base. If you use a tipped lower bicuspid Rx, you have to go cross arch because of the tip. I do the same thing as Dr. Righellis and I learned it from Dr. Marco Rosa who has published on the subject of managing canine substitution with Dr. Zachrisson.

Finally, a question for Dr. Chan: Do you always reverse the upper first molar band/bracket when you are treating missing lateral cases? If not, how do you decide when to do it? Or does it just follow the rule of "no molar rotation in the upper arch in extraction cases"?

—Charles J. Ruff
Waterville, ME

Dear Dr. Ruff:

Thank you for your thoughtful, real world comments. I agree with you as to how parents respond to treatment plans involving either veneers or implants when they consider their own 9- to 15-year-old children. If they see that there can be a reasonable space closure they very rarely elect the more expensive and time-consuming restorative options. However, I would never take anything away from the wonderful treatment results of other treatment options, only that not all restorative dentists can deliver that nice a result, just as not all orthodontist can deliver as nice a canine substitution result.

Addressing the question of first molar bands—on a colleague's suggestion, for a few years I would reverse the upper bands on Class II molar finishes, but I have found that reversing the molar bands generally tends to over rotate them to the mesial. In a Class II molar finish one wants zero rotation (vs. 8-10 degrees of distal rotation in a Class I molar finish) and about 5 degrees of mesial root tip, which helps seat the mesial buccal cusp in the interproximal area between the lower second premolar and first molar. Opal Orthodontics now has a bondable bracket with this prescription for Class II molar finishes.

—Dr. Milton Chan
Pasadena, CA

EDITORIAL

CONFLICT IN THE ORTHODONTIC OFFICE

Assigning motives

It's an election year. Politics seem to be about making the public fear the other guy's ideas and suggest he is motivated by avarice or ignorance. As Alexander Hamilton said in the *Federalist Papers*, "For in politics, as in religion, it is... absurd to aim at making proselytes by fire and sword." This was his plea for honest discussion and give-and-take resolution by consensus.

How can we do this in the orthodontic office setting?

Gossip

A very destructive habit in some groups of people who are spending their day together is gossip. Negative chatting about your colleagues usually involves speculation about why they have chosen to behave in some way that seems just wrong. Assuming that they have the worst motives, such as selfishness or rivalry, is just too easy, and it is a common source of misunderstandings. The best approach if you think a person wants to hurt you or criticize you is to ask—meet with the person and ask if you have done something to anger them. But please, do not use email or texting for such communication.

If a working colleague criticizes another to you—tell them to just talk to the person of their concern. My partner, Dr. Earl Johnson, set a rule for team members: If you have a criticism or complaint, come with a solution, or don't come. The solution may not serve, but it is a positive effort and starts the discussion. If a team member seems to have an intractable problem with a co-worker, I suggest that I meet with the two of them to talk it through.

Assume everyone wants the best outcome

Assume otherwise and you will usually be wrong. I suggest some groundwork in the way of team conversations to set practice and interpersonal goals of behavior. "How do I want others to regard me?" is a question to have each person answer.

Some issues are not big issues

In any community there are varied levels of concern, for example, about cleanliness, repair of equipment, patients showing up late, bringing problems to work, replacing items where they belong, or negotiating for after-school time. These issues deserve some team meeting discussion. Agreed-upon protocols make these issues little issues.

Grudges

Resolve conflict and move on. When you discuss an issue with a team member and then he or she responds with "But what about when you...." shows that he or she had held a gripe in storage until it could be used to deflect an honest conversation. Urge people to work through one topic at a time.

Conflict will build if motives are assigned without honest conversation. Be happy in the office by timely resolution.

—Dr. Gerald Nelson, PCSO *Bulletin* Editor

PRACTICE MANAGEMENT DIARY

Positive Testimony

By Gerald Nelson, DDS, PCSO Bulletin *Editor*

Takes me a while to get on to some things. I'm sure the young orthodontists out there are all over this, but I have finally come to realize that we can affect what the online public thinks of our services.

Yelp – There is no way you can prevent an occasional negative Yelp testimonial. But what you and your team members can do is to make sure the positive testimony far outweighs the negative. A person who is curious about your practice and sees that the positive comments are 10 to 1 will be impressed.

Here is what to do every time a patient or patient family member has a good experience with you or a staff member. Hand that person a business card that on the back has three URLs: Yelp for your community (e.g.www.yelp.com/sanfrancisco) on it, your Web site address, and your Facebook page. The message on the card could say "Please help us help others – If you had a good experience today, please let others know by putting your comment on these Web sites."

ABO UPDATE

ABO Announces New Diplomates, Newly Recertified Orthodontists

The American Board of Orthodontics (ABO), whose primary purpose is to elevate the level of orthodontic care for the public by encouraging excellence in clinical practice and specialty education, certified or recertified 74 examinees who participated in the Clinical Examination June 11-15, 2012, in St. Louis, Mo.

During this exam session, 57 orthodontists successfully completed the Gateway Certification Examination, thereby maintaining their certification. Eleven orthodontists completed the Initial Certification Examination (ICE), and nine orthodontists banked cases for the eventual completion of the ICE. Three orthodontists successfully completed the Beginning Certification Examination. In addition, one orthodontist completed the Voluntary Recertification Examination, and two orthodontists completed earlier pathways.

PCSO Members Who Completed the Clinical Examination:

Reid Winklerp
Phillip D. Lowder
Paul M. Kasrovi
Robert C. Gire
Hee Soo Oh
Brian W. Mason
Stephen D. Hunsaker
Graham Jones
Leonardo Carlos
F. Bordador
Richard W. Chan
Reza Salmassian
Sumit Chawla
Marta Baird
Thais C. Booms
Bradford G. Baker
Claudia B. Torok
Gregory S. Garn

AAOF REPORT

Continued Commitment to the Specialty™

AAO FOUNDATION AWARDS

As of late June, the AAO Foundation Craniofacial Growth Legacy Collections Project (www.aaoflegacycollection.org) has 411 cases processed and uploaded to the Web site. These cases represent 4,400 lateral, 1,000 frontal and 500 hand/wrist cephs, and over 6,000 total images. Over 1,300 images from all nine participating collections have been requested by and delivered to researchers around the world. Some 3-D study casts are posted, with more to come in the near future. The immediate focus of the project is to improve searching and filtering, establish better performance for large collections, and improve the display and interaction options for 3-D study casts.
Our thanks go to all involved in this effort, including Sheldon Baumrind (PCSO/CA) of the University of the Pacific, who serves as chair of the Collections Project Steering Committee; Sean Curry, PhD, a non-orthodontist who is responsible for Web site and database development; and David Covell (PCSO/OR), the curator of the Oregon Growth Study at the University of Oregon, one of the participating collections. We extend our thanks as well to all PCSO members who have lead the way in supporting this effort by making a restricted gift through the Legacy 300 Campaign, which was completed late last year ahead of schedule.

In support of junior faculty and other Awards Program activities, for 2012 the Foundation Board approved a total of eight Biomedical Research Awards, 16 Orthodontic Faculty Development Fellowship Awards and two Education Innovation Award Planning Grants totaling $540,000. Of the 26 proposals funded, six are from the PCSO.

For the next funding round, the Board budgeted continued support for the Collections Project, an additional $600,000 for further development of the two Education Innovation Award initiatives, if progress warrants, and support for junior faculty through Orthodontic Faculty Development Fellowship Awards, Post-Doctoral Fellowship Awards, Biomedical Research Awards and Research Aid Awards.

Awards Materials for 2013 are currently on the Web site (www.aaofoundation.net). The deadline for proposals is Friday, December 14.

CONTINUED COMMITMENT TO THE SPECIALTY®

The choice is yours when it comes to making a Continued Commitment to the Specialty® in support of the AAO Foundation. You may:

Make a restricted gift to the Foundation's endowment

Make an unrestricted gift, which would allow the Foundation Board of Directors the flexibility to use your support to fulfill the mission of the organization at their discretion.

Fulfillment options include:

- Pledging at a certain level, whether a new, first-time pledge or a pledge increase.
- Joining the Century Club by making an open-ended, ongoing commitment of a minimum of $100 per month, either by bank authorization or credit card.
- Committing to include the AAOF in your estate plans, thereby becoming a member of the Keystone Society.

See the AAOF Web site (www.aaofoundation.net/Campaign) for more details about how you can make a Continued Commitment to the Specialty®.

FOR MORE INFORMATION

The AAO Foundation Web site may be reached either through the AAO Members Web site (www.AAOmembers.org) or directly at www.aaofoundation.net.

If you should have any questions, please call Robert Hazel, AAO Foundation EVP, at (800) 424-2841, ext. 546 (rhazel@aaortho.org), or contact me at your convenience.

—Thomas Bales, PCSO Representative to the AAO Foundation Board of Directors

COMPONENT REPORTS

California

The California Association of Orthodontists (CAO) has been listening to feedback, and will be sponsoring staff lectures in Monterey that your office team will not want to miss. Recent survey results indicate that you hope to see future programs geared toward customer service, and more in-depth clinical topics. As a result, Dr. Doug Depew, a respected name in staff education, will be offering two programs designed to provide your staff with the information you have requested.

The two lectures, which will offer a total of 3.0 CE credits, will be presented immediately before the start of the PCSO Annual Session on Thursday, October 4, 2012, from 1:00-4:30 PM. "Teamwork - The Key to Excellent Customer Service for Your Orthodontic Practice" will empower your assistants with the "must-haves" of excellent patient communication in order to help motivate patient compliance and excitement to refer friends.

Your clinical assistants will also receive valuable information in a lecture entitled "The Assistant's Role in Efficiently Providing Laser and Temporary Anchorage Device Procedures." This course will help educate staff on the theory and mechanics behind TADs (or mini-screw implants), making them better able to streamline these procedures, enhance office productivity and provide better patient education.

To register for these courses, visit www.pcsortho.org/educational-opportunities/annual-session.aspx and click on the registration link for Monterey. Registration for both courses is $50. If you plan to attend only the CAO courses, contact Kathy Richardson at (888) 242-3934 or krichardson@aaortho.org. I hope to see you and your staff in Monterey!

Tom Bales, President
Novato, CA
California Association of Orthodontists

Saskatchewan, Canada

Things continue to run smoothly in the orthodontic community in Saskatchewan. The Saskatchewan Society of Orthodontists (SSO) will have its annual meeting on October 26th at Hotel Saskatchewan in Regina, Saskatchewan. In conjunction with the meeting, we will be having our second-ever day of continuing education. Ormco has been generous in sponsoring the event, and Dr. Stephen Tracey will be giving a presentation to the staff and doctors. The SSO is extremely pleased that over 60 people have already signed up to attend—not bad for a province that has 13 orthodontists! Recognition is owed to Dr. Ross Remmer and Dr. Mike Ziglo for organizing the event. Thanks for your help!

Kam Olfert, Secretary-Treasurer
Regina, SK, Canada
Saskatchewan Society of Orthodontists

Arizona

The Arizona State Orthodontic Association will have its annual business and scientific meeting on December 3, 2012 at 9:00am. The meeting will once again take place at The Orange Tree Golf Resort in Scottsdale, Arizona. We are excited to have Dr. Straty Righellis as our featured speaker. Invitations will be mailed out and also available on our website: www.azstateortho.com.

Matthew Dunn, President
Phoenix, AZ
Arizona State Orthodontic Association

COMPONENT REPORTS

Washington

Greetings- the WSSO's Officers for the 2012-2013 year are:

President- Isaac Fu
Vice President- Jacqueline Bunce
Secretary Treasurer- Shafeena Chatur
Immediate Past President- Tom Merrill

The Orthodontists of Washington State thank Tom Merrill, who set a high standard and among all his other activities led a much-needed major project which revamped and modernized our bylaws.

The committee chairs under the new bylaws structure are:
Communications: Jake DaBell
Legislative: Reid Winkler
Membership: Barbara Sheller
Orthodontic Practice: Graham Jones
Peer Review: Steve Lemery

The WSSO is proud to have two of our former presidents in leadership positions with the PCSO. Rob Merrill is current PCSO President and Bryan Williams is President Elect. We thank Rob and Bryan for their dedication and hard work representing our interests.

The mission statement of the Washington State Society of Orthodontists is that it is a professional organization of orthodontic specialists that helps its members provide the highest level of care to the public by providing quality continuing education, a framework for a strong political voice, and facilitating two-way communications between the organization and its members. You can get more information on our mission and activities at our Web site: www.wssortho.org.

As many of you may know, the PCSO board has decided to suspend its participation in the regional meetings at this time and with regret, the WSSO board has also voted to not hold a Northern Regional meeting for orthodontic staff this year in Seattle. The WSSO board felt that it would not be prudent to host a meeting that, if over budget, could result in the fiscal instability of our state society. Therefore, the plan is to forgo the 2013 Northern Regional Meeting in order to establish more reserves and to evaluate potential alternatives for a wonderful meeting in the winter of 2014.

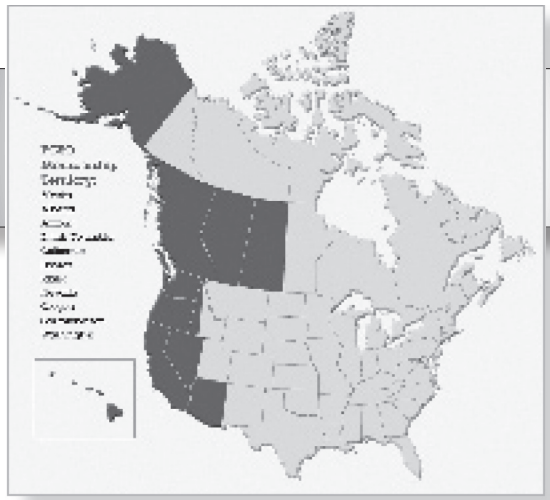
Other legislative issues that we have been facing in Washington focus on the mid-level provider initiative and denturists lobbying to expand the scope of their practice. We have been working closely with the Washington State Dental Association to assure that the best interests of orthodontists and dentists in the state are well represented.

I want to remind all orthodontists of Washington State that we will be holding our WSSO breakfast business meeting on Friday October 5th at the PCSO Annual Meeting in Monterey. The meeting will be chaired by Vice President Jackie Bunce and we encourage you to attend to help the WSSO leadership represent your views. If you do wish to attend please call the PCSO office to make sure that you have a ticket as part of your registration package.

Best wishes to all of our Washington State Orthodontists.

Isaac Fu, President
Bonney Lake, WA
Washington State Society of Orthodontists

PCSO at a glance



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Juvenile Rheumatoid Arthritis

By Dr. Wint Wint Tun. Edited by Ib Leth Nielsen, DDS, MSc

Orthodontic programs in the United States are often asked to take on post-graduate dental students in addition to their regular residents; these are often international students interested in spending time in a program of their choice in order to learn more about orthodontics and research.

At UCSF, we have listened to these requests and created two types of programs. One is a short-term program of three months' duration that we call a Preceptorship. The second is an International Fellowship Program in Orthodontics; it is of one year's duration, involves a more focused research endeavor, and is intended for young faculty in overseas dental schools who have a serious interest in an academic career, as well as experienced clinicians who have a couple of years in practice but want to expand their knowledge. In the past, we have been very successful with similar arrangements, and several fellows have later become Chairs at their respective universities overseas. In this issue of the Bulletin, *we have asked one of our recent Preceptors, Dr. Wint Wint Tun from Burma, to present her study of juvenile rheumatoid arthritis (JRA) as an example of the kind of limited research projects we expect our international students to undertake during their tenure.*

—I. L. Nielsen

INTRODUCTION

JRA is the most common chronic rheumatologic disease in children, and one of the most common chronic diseases of childhood. The overall prevalence of JRA is estimated to be from 30 to 150 per 100,000 children. In the United States and Canada there are an estimated 30,000 to 60,000 children and adolescents with the disease.[1]

JRA is characterized by chronic inflammation of the synovium and presence of articular cartilage damage.

In patients with JRA, the prevalence of clinically detectable temporomandibular joint (TMJ) involvement varies between 38% and 72%, depending on the diagnostic method used and the JRA type.[2]

According to the American College of Rheumatology (ACR) pediatric criteria for JRA, the disease is classified into three groups (Figure 1). An example of typical facial features of JRA is shown in Figures 2, 3, 4, 5, and 6.

JRA

Systemic JRA
- 20% of JRA patients
- Affects males and females equally
- Arthritis, high concomitant fever and rheumatoid rash
- Involves small joints of hands, wrists, knees and ankles
- May have internal organ involvement: hepatosplenomegaly

Polyarticular JRA (Poly)
- 40% of JRA patients
- More common in females
- Five or more joints affected in first six months of disease
- Involves large and small joints of legs and arms as well as jaw and neck
- Symmetrical distribution

Pauciarticular JRA (Pauci)
- 40% of JRA patients
- Common in females under eight years of age
- Four or fewer joints affected in first six months of disease
- Involves large joints: knees, ankles or wrists
- Asymmetrical distribution

Figure 1. The three different types of JRA.

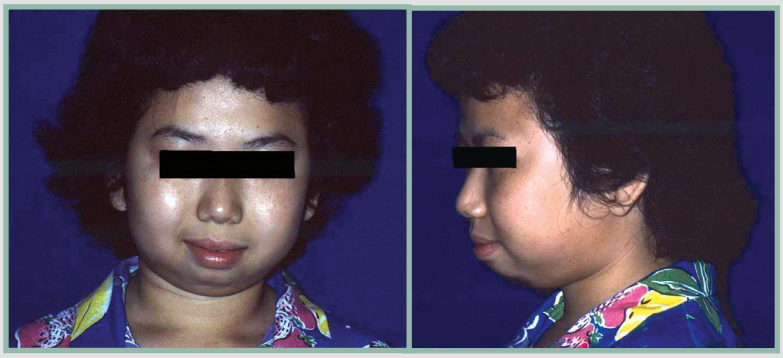

Figure 2. This 16-year-old patient diagnosed with the systemic type of JRA shows typical facial features of JRA.

Figure 3. Frontal view of teeth in occlusion showing anterior open bite and lower crowding.

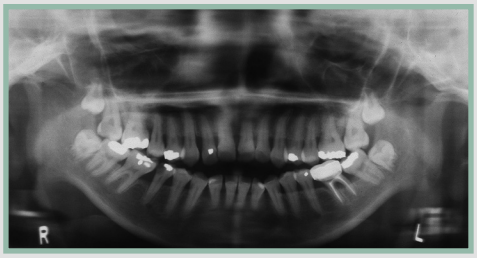

Figure 4. Panorex of the patient in Figures 2 and 3, showing condylar flattening in both right and left TMJ.

Figure 5. Lateral headfilm of the patient in Figure 2.

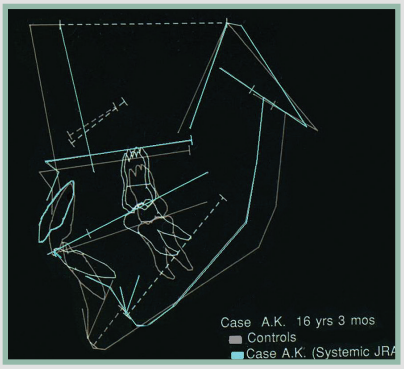

Figure 6. Facial morphology of the patient in Figure 2. Note the steep mandibular plane angle and convex profile. Patient and controls superimposed on nasal sella line.

Several studies have examined the facial morphology of JRA patients by means of lateral cephalograms. Some of the important findings include posterior inclination of the mandible in relation to the cranial base, resulting from posterior rotation due to condylar resorption during growth; also, a retrognathic mandible and reduction in overall mandibular dimensions are typical findings.[3,4,5] The changes in the mandible were clearly related to condylar damage due to temporomandibular joint arthritis.[6] Despite considerable agreement on the facial morphology in these patients, there is still limited literature on disturbances in skeletal growth, with most of it based on individual case reports.

OBJECTIVE

The objective of this study was to examine and compare the facial morphologies of the three different types of JRA patients cephalometrically. The second aim was to compare these findings to those in healthy children of the same age and sex. The third aim was to investigate the possible effects of JRA on skeletal development and maturation by means of the Tanner and Whitehouse TW2 skeletal age assessment method.[7]

SUBJECTS AND METHODS

A total of 15 JRA patients (Figure 7) were studied. These patients were at the time under treatment at Valley Children's Hospital in Fresno, CA.

	Sex		Age (in years)		
	Girls	Boys	Minimum	Mean	Maximum
Systemic	4	3	6.8	12	16.9
Poly	4	1	3.10	12	14.9
Pauci	1	2	7.6	12	15.9

Figure 7.

The facial morphology of JRA patients was analyzed using conventional lateral cephalometric headfilms. Cephalometric landmarks were identified and digitized on each patient's radiograph using the cephalometric analysis software Tiops™. The cranial, sagittal, vertical and dento-alveolar measurements of each patient were recorded, and the mean values and standard deviations were compared to those of normal children of the same age (control group) as available in the Tiops program database.

To evaluate the patients' skeletal development, the TW2 RUS method (Tanner, Whitehouse) was used. This method scores 13 regions of interest on each hand-wrist X-ray. The resulting scores were added to obtain the overall skeletal age, and the result was compared to the chronological age of normal children of the same age and sex. To ensure the accuracy of the stage of maturation determined visually, all hand-wrist films were also scanned and analyzed automatically by a new program BoneXpert™. [8] The results showed great agreement between the two methods.

RESULTS

In the group with systemic JRA, the S-N-B (Figure 8) and S-N-Pg (Figure 9) angles were significantly reduced, indicating a true mandibular retrognathia with an associated increase in the sagittal jaw relationship A-N-Pg (Figure 10).

The increase in mandibular plane angle (ML/MRLar) (Figure 11) indicates that mandibular plane is steeper than normal in this group. The reduced ML/MBLar angles, describing the shape of the mandible, also showed a shorter base arch length, and less mandibular body length and ramus height, all of which leads to the smaller than average mandible.

Variable	JRA (Systemic) n=7 MEAN	SD	JRA (Poly) n=5 MEAN	SD	JRA (Pauci) n=3 MEAN	SD	Control MEAN	SD
Cranial								
S-N-Ar (°)	117.0	10.8	117.0	5.2	120.1	6.1	124.0	5.0
S-N-Ba (°)	132.5	6.9	127.9	4.7	130.7	7.4	130.5	5.0
Sagittal								
S-N-A (°)	80.9	4.9	84.6	3.4	83.5	9.0	81.5	3.5
S-N-B (°)	74.5	4.6	78.5	5.4	79.9	6.1	77.7	3.5
S-N-Pg (°)	73.8	4.8	78.5	5.7	79.3	6.7	79.0	3.5
A-N-B (°)	6.0	4.4	6.1	2.3	3.6	3.3	3.8	2.5
A-N-Pg (°)	7.4	5.2	6.1	2.8	4.2	3.3	2.5	2.5
ML/RLar (°)*	129.6	2.8	124.8	3.3	124.3	1.8	123.3	5.0
ML/MBLar (°)**	14.7	1.7	17.2	2.6	18.1	0.9	20.9	3.0
Dental								
Overjet (mm)	4.5	2.9	5.4	2.3	2.2	1.4	3.0	2.5
Overbite (mm)	0.2	2.2	2.1	2.0	1.9	2.0	2.5	2.0
U1/Palatal plane (°)	110.7	7.6	109.0	2.8	105.9	5.8	111.0	6.0
L1/Mn plane (°)	91.2	7.0	92.5	9.4	101.2	8.2	98.0	6.0
Interincisal angle(°)	121.7	14.1	131.3	12.6	121.4	10.3	128.0	6.0
Vertical								
Palatal plane/SN (°)	8.9	2.1	8.0	4.7	7.0	3.0	7.0	3.0
Mn plane/SN (°)	45.2	5.7	35.3	4.5	34.9	3.8	29.8	6.0
Palatal pl/Mn pl (°)	36.4	5.7	27.3	3.8	31.5	1.7	23.0	5.0

* Measures mandibular morphology using the ramus line to mandibular plane through Ar

** Measures mandibular morphology as the β angle

TABLE 1. Comparison of the cephalometric morphology of three different types of JRA patients and normal control subjects.

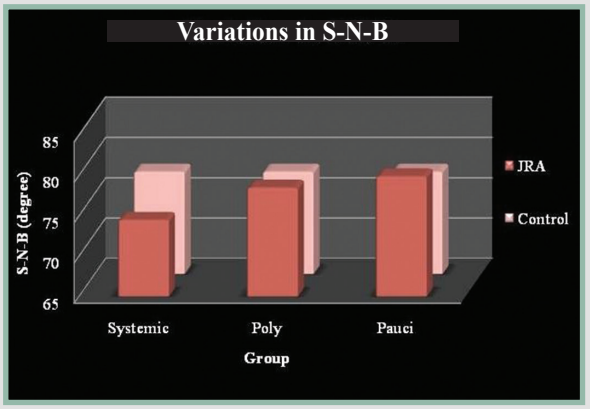

Figure 8. Variations in S-N-B in systemic, poly, and pauci JRA patients

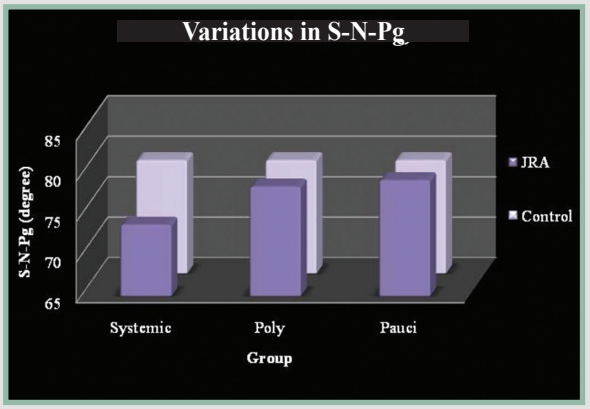

Figure 9. Variations in S-N-Pg in systemic, poly, and pauci JRA patients

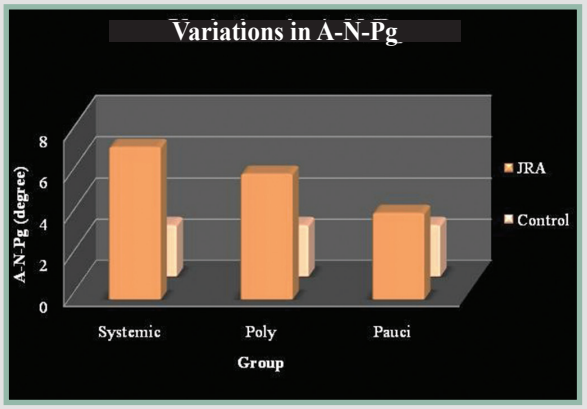

Figure 10. Variations in A-N-Pg in systemic, poly, and pauci JRA patients.

The angles Mn plane/SN (Figure 12) and palatal plane/Mn plane, representing the vertical skeletal dimensions, are significantly larger in all three groups, indicating a skeletal open bite and posteriorly inclined mandible.

The L1/Mn plane, the lower incisor inclination relative to the mandibular plane, is smaller—indicating that the lower incisors follow the mandibular rotation, contributing to an anterior open bite.

DISCUSSION

The most extreme craniofacial changes, particularly in the mandible, are found to be associated with the systemic type of the disease in this study.

Delayed skeletal maturation was observed in 33% of JRA patients (Figure 13), while 54% have similar chronological and skeletal age. Moreover, 13% of patients are found to be about one year ahead of their chronological age. The average period of delay is estimated to be two years.

This growth retardation is found to be associated with the systemic type of the disease. The duration and severity of disease, immobilization, poor nutrition and high doses of corticosteroids are considered to be the main factors that contribute

to growth impairment in these patients. However, the therapeutic regime of the JRA children was not taken into consideration in this part of the study and requires additional separate investigations.

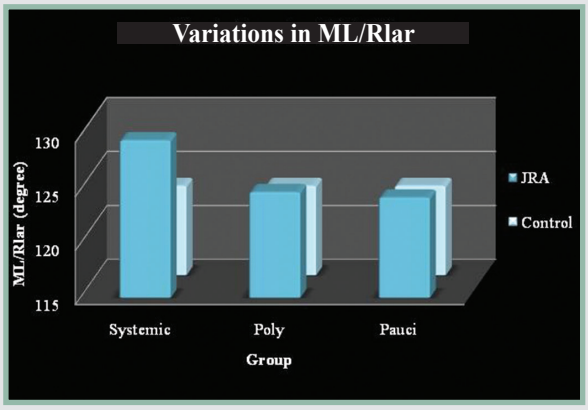

Figure 11. Variations in ML/Rlar in systemic, poly, and pauci JRA patients

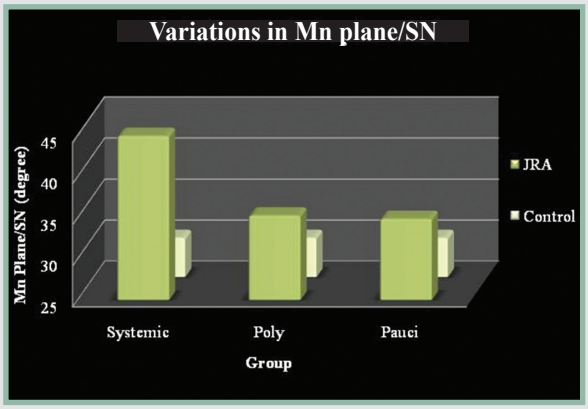

Figure 12. Variations in Mn plane/SN in systemic, poly, and pauci JRA patients

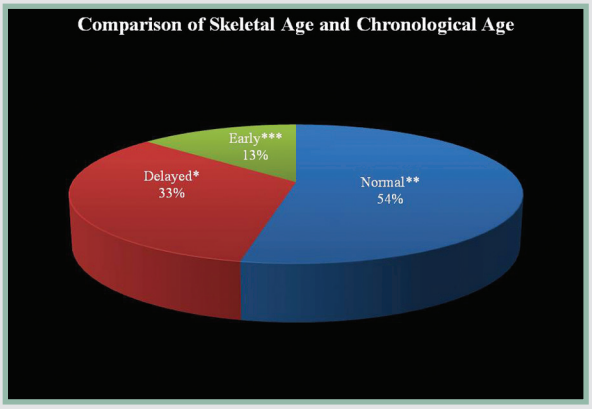

Figure 13. Comparison of skeletal age and chronological age of JRA patients

* Skeletal age is 2 years delayed from chronological age.
** Skeletal age is about the same as chronological age.
*** Skeletal age is 1 year earlier than chronological age.

CONCLUSION AND FUTURE WORK

This retrospective pilot study confirms earlier findings that systemic JRA patients have the typical facial characteristics associated with this disease. These features include a retrognathic mandible and posterior inclination of the mandible, both of which result from condylar inflammatory destruction of the TMJ. Early recognition in the daily clinical practice of these TMJ condylar changes is important in order to avoid further aggravating the developing JRA situation. This is particularly the case when a patient has an open bite that cannot be associated with airway problems or oral habits. Moreover, changes in condylar morphology may require further investigation using a CBCT scan if they are initially diagnosed on a Panorex. In some cases, it may also be necessary to use functional appliances to prevent the side effects of the disease on the occlusion.[9] In addition to conventional orthodontic treatment, TMJ or orthognathic surgery should be considered in severe cases, but generally not until the disease has burned out. Future studies should include more JRA patients than available for this pilot study so that a reliable statistical analysis can be performed. It is also recommended to include hand-wrist radiographs to assess patients' skeletal age in order to determine whether skeletal maturation is delayed as a result of medical treatment, or the disease itself.

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Acknowledgement

I express my deepest gratitude to Dr. Ib Leth Nielsen for his superb guidance and supervision. I also thank him for providing me the opportunity to utilize the research facilities at UCSF. This project would not have been possible without him.

—W.W.T.

PRE-TREATMENT


PROFILE


RELAXED


SMILING

How would you treat this malocclusion?

Case I. M. 11 years, 0 months

An eleven-year-old Caucasian female presents for phase II treatment with blocked-out maxillary cuspids. (Her phase I treatment consisted of palatal expansion, to address a posterior crossbite, and a lingual arch to hold E space.) Her parent's chief complaint is the maxillary blocked-out cuspids.

EXTRAORAL FINDINGS

The facial evaluation shows a tapered (dolichocephalic) face, with lips that are slightly apart at rest. The patient has good facial symmetry and proportions, with a slightly long lower lip to chin.


RIGHT BUCCAL


FRONTAL INTRAORAL


LEFT BUCCAL


MAXILLARY OCCLUSAL

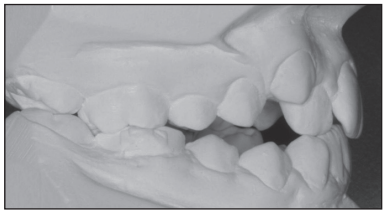

MANDIBULAR OCCLUSAL

INTRAORAL FINDINGS

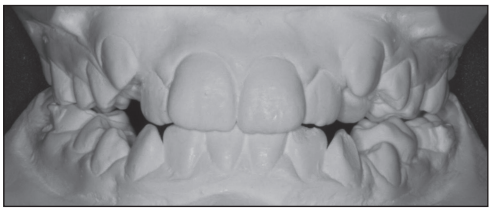
The patient's molar relationship is Class I, with minor mandibular crowding and moderate maxillary crowding; the maxillary cuspids are blocked out to the buccal. The buccal overjet is minimal, especially on the left side. The lower midline is off to the left by 1 mm. There is a moderate curve of Spee in the lower arch, with a bilateral open bite. Both the upper and lower incisors appear to be upright, with the maxillary central incisors having minimal overbite and overjet, while the maxillary lateral incisors are in crossbite and are open. There are three retained deciduous teeth that appear to be ready to exfoliate.

RADIOGRAPHIC FINDINGS

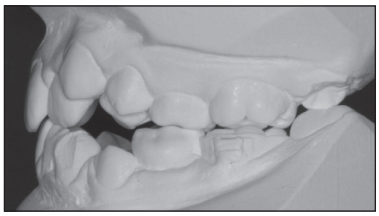
The panoramic radiograph is unremarkable. The remaining deciduous teeth are ready for exfoliation. Third molars can be seen developing on the lower arch; no third molars are present in the upper arch. The cephalometric radiograph shows minimal overbite and overjet of the upper and lower incisors. The ANB is 2 degrees, with the upper incisors 2 mm to NA and the lower incisors 3 mm to NB. The inter-incisal angle is 140 degrees. The mandibular plane to SN is high at 39 degrees. The Wits measurement is -7 mm.



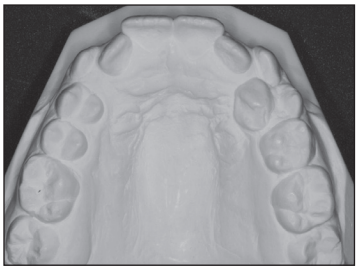
RIGHT BUCCAL



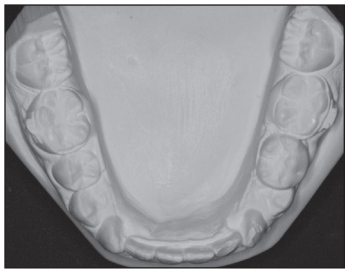
FRONTAL INTRAORAL



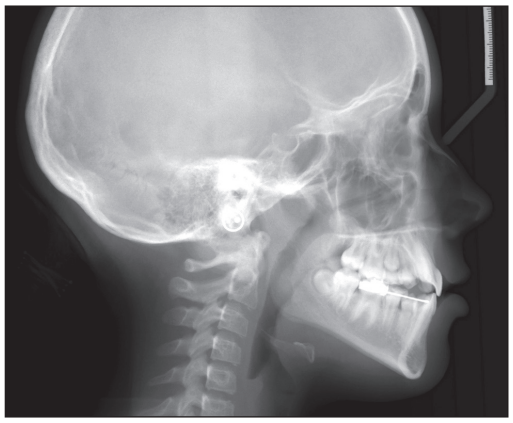
LEFT BUCCAL



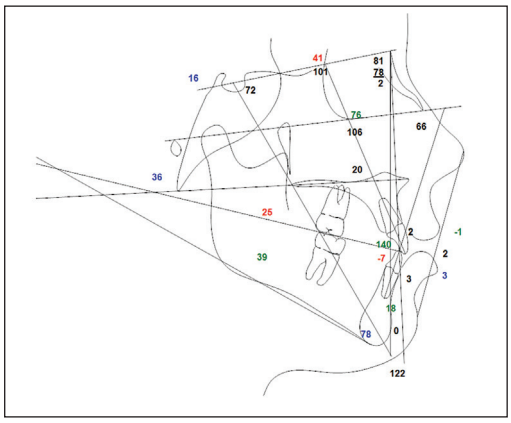
MAXILLARY OCCLUSAL



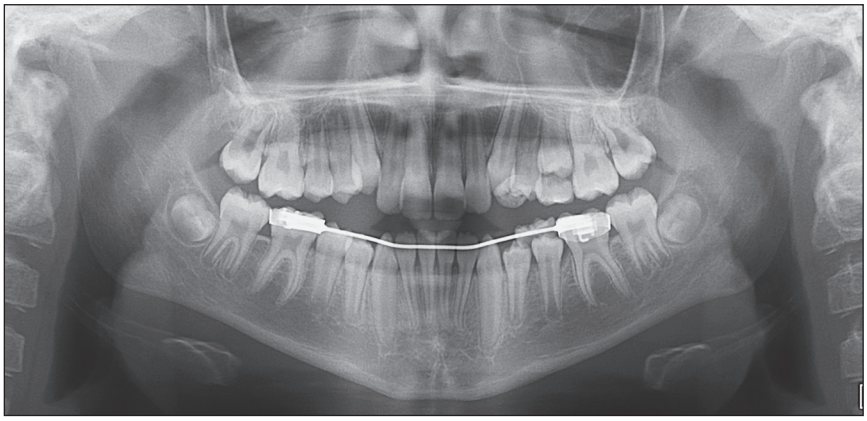
MANDIBULAR OCCLUSAL



PRE-TX CEPHALOMETRIC X-RAY



PRE-TX CEPH TRACING



PRE-TX PANORAMIC X-RAY

TREATMENT OPTIONS

1. Comprehensive orthodontic treatment, non-extraction, with IPR on the lower arch, advancement of the incisors and maxillary expansion
2. Comprehensive treatment with IPR on the lower and upper first bicuspid extraction
3. Comprehensive treatment with IPR on the lower and upper second bicuspid extraction
4. Comprehensive treatment with lower first bicuspid extraction and upper second bicuspid extraction
5. Comprehensive treatment with upper and lower second bicuspid extraction

CEPHALOMETRIC MEASUREMENTS

	Pre-TX	Mean
SNA	81	82
SNB	79	80
ANB	2	2
SN-MP	39	33
FMA	36	25
1 to NA mm	2.3	4
1 to NA deg	20	23
1 to SN	101	102
1 to NBmm	3.4	4
1 to NB deg	18	25
1 to MP1	78	95
Wits Appraisal (mm)	-7	-1

For Progress and Post-Treatment of Case I.M., see page 36.

Jaleh Pourhamidi
DMD, MDSC

By Douglas Hom, DDS,
PCSO Bulletin Southern Region Editor

As dean of Roseman University of Health Sciences College of Dental Medicine, Henderson, Nevada, Campus and program director of the Advanced Education in Orthodontics and Dentofacial Orthopedics Residency (AEODO/MBA), Dr. Jaleh Pourhamidi maintains a very busy schedule. We were able to catch up with Dr. Pourhamidi and ask her to share some insights on her career and orthodontic education.

—D. H.

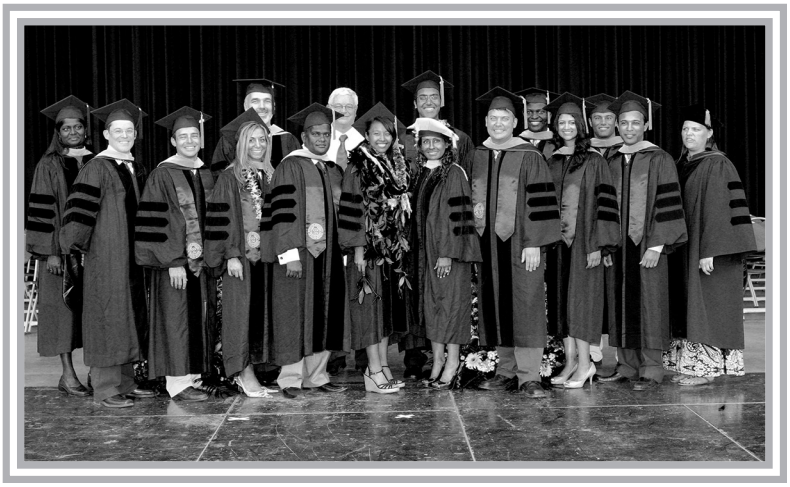
DR. DOUGLAS HOM: How did you become interested in orthodontics?

DR. JALEH POURHAMIDI: Unlike many students who start dental school with the intention of becoming a specialist (more often than not, an orthodontist), I really had no true gravitation towards the field until my second year in dental school. I had never had braces, and therefore had no real reference point for the profession; quite frankly, I found it somewhat amusing that so many of my classmates had started dental school with the sole purpose of getting into an orthodontic program. In fact, I think I was determined to resist the draw of the profession, but had to ultimately give in and surrender to my calling!

Dr. Pourhamidi

DH: Where did you do your orthodontic training, and who were some of your main mentors?

JP: After completing dental school at the University of Pittsburgh in 1999, I entered the orthodontic residency program there. I had many great professors and mentors there, both full-time and part-time, and I can honestly say that each and every one of them contributed greatly to my education and professional growth. And of course I would be remiss not to mention my parents as my ultimate mentors, as they selflessly provided a path for the education and professional accomplishments of my siblings and I by their migration to this country in 1985. Although the Persian culture can be fairly structured and conservative, my parents taught me to challenge



Roseman Class of 2012 graduates

the status quo if necessary. They also instilled in me the desire to achieve, and emphasized that if I was going to do something, I should do it to the best of my ability.

DH: What led you to pursue a career in academic orthodontics?

JP: In one word, naiveté. (Initially, anyway.) In my innocent and ingenuous mind, I saw the challenges and opportunities an academic career presented, and I was determined to make a difference. Whatever the cause, I am so thankful for the direction my professional life has taken. The ability to work with so many amazing people (my residents, past and present, and wonderful faculty) makes everyday a unique, challenging, and stimulating experience.

DH: Tell us about some of the innovative things that are happening at Roseman.

JP: The orthodontic program at Roseman is relatively new, having graduated its first class in 2011. We are currently admitting 10 new residents to the program each year, as well as four interns. Although the program is new, we are proud of the quality of the residents that we are already attracting. The AEODO/MBA program is 35 months in length and is tightly integrated with Roseman's MBA program. Graduates earn a certificate in Orthodontics and Dentofacial Orthopedics and an MBA simultaneously. One innovative approach we have incorporated into our program is the block learning concept.
With the block learning approach, a topic is intensely focused on for a two-week period. For residents, clinic is suspended during this time. The block concept allows us to bring in top experts in specific fields of orthodontics, who share their knowledge with our residents in a way that could not otherwise be done.

We are so fortunate to be part of an innovative and forward-thinking university, where the administration shares in and fully supports the vision and goals of the program. We have a fully digital program, meaning all radiographs, patient charts, models, etc. are electronic—and available to residents and faculty at all times. We also make sure residents are exposed to all-new treatment modalities and philosophies while continuously stressing to them the importance of evidence-based dentistry.

DH: Do you have any specific research or lecture interests?

JP: My main areas of research interest are currently in the science and art of public health. I believe that in order to improve the quality of life globally, we must focus some of our efforts on protecting and improving the health of communities through education and public health-related research.

Dr. Pourhamidi with Roseman faculty's Dr. Douglas Hom and Dr. Glen Roberson

DH: What are some of the challenges confronting today's orthodontic residency programs?

JP: I think that while the progression our profession is experiencing is great, it can also produce its own challenges. We are so fortunate to be experiencing many new tools—or gadgets, if you will—but the fact remains that our residents still need to learn foundational orthodontics first and foremost. I can see how tempting it may be for a young resident to assume that with the advent of new technology or treatment modalities, he or she may be able to rely more on said that new technology or gadget, and less on sound practice of orthodontics. I remind my residents every day that nothing will ever replace great education, careful and thorough diagnosis and treatment planning, and a comprehensive understanding of orthodontic principles.

DH: What advice do you have for recent graduates?

JP: The orthodontic profession has undergone many changes in just the last 5 to 10 years. The challenges are certainly more intense for new graduates than for those who graduated 15 to 20 years ago. Today's graduate has to deal with high debt loads, increased competition, expanding corporate dentistry, and rapid technological change, among a multitude of other concerns. I tell our recent graduates to stay grounded, and to keep the fundamental orthodontic principles they've learned as a foundation. I also believe a keen business sense is necessary to survive in private practice today. Hopefully, our graduates will utilize the knowledge they gained from the MBA portion of their education to develop the business acumen needed to thrive in today's climate. On a personal level, I advise my graduates to "live like students/residents" at least for a couple of years

Dr. Pourhamidi with Dr. Sean Barclay, Dr. Meghan Jeffres, Dr. Harry Rosenberg, and Ms. Leili Rosenberg

after graduation. Many of our young doctors can underestimate how expensive life can be, especially when they first enter the Real World, and that can be problematic if they choose to buy expensive cars and homes right away. I tell them to live modestly for a couple of years, and ramp up their standard of living slowly and appropriately once they have been in practice for at least a couple of years.

DH: Where do you see the orthodontic profession moving over the next 10 years?

JP: One of the things I really would like to see is increased public awareness on the importance of seeking orthodontic care from a qualified and specialty-trained orthodontist. We have all seen an increased effort on AAO's part to convey this message to the public, and I hope we continue to strengthen this resolve in the years to come.

DH: How do you manage to balance your home life and your professional life?

JP: That's a tough one! Although it sounds like a cliché, I believe that balance in life is more of a journey than a destination...and so that balance changes as one's life unfolds. For me currently, the program is the focus of my life. I tell new residents at orientation that the program at Roseman "is my life." Because the program is still young, I believe that it requires that level of total commitment to succeed. I'm sure that as the program matures, my balance of focus will change accordingly.

Roseman Inaugural Class Graduates

Dr. Pourhamidi and family

DH: Can you tell us something about your family?

JP: I have an older sister, who with my wonderful brother-in-law first introduced me to the joys of being an aunt. They now have two young daughters and live in a suburb of Atlanta, along with my parents. I also have a younger brother and a sister-in-law whom I absolutely adore, along with two fun and high-spirited nephews. My brother and his family live in San Diego. And last but not least, I am engaged to be married to a wonderful man, Dr. C. Lynn Hurst, who has provided me with great guidance, love, support and friendship along the way.

DH: When not practicing orthodontics, what types of activities do you enjoy?

JP: I am an avid reader, a tireless road biker, a novice hiker, and a reluctant runner.

PROGRESS AND POST-TREATMENT

How would you treat this malocclusion?

Case I. M.

TREATMENT PLAN

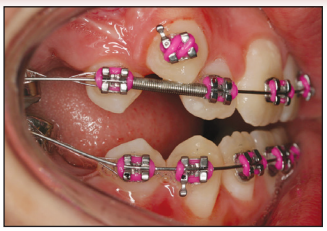
The treatment options, as well as the variations in facial outcome as a result of their application within this facial and skeletal pattern, were discussed with the patient's parents. The parents were made aware of the extreme Wits value (–7 mm) and the possibility of future Class III growth. Comprehensive treatment with the extraction of all four second bicuspids was agreed upon (option #5). Risks and benefits of treatment were discussed, and treatment was started.

TREATMENT SEQUENCE

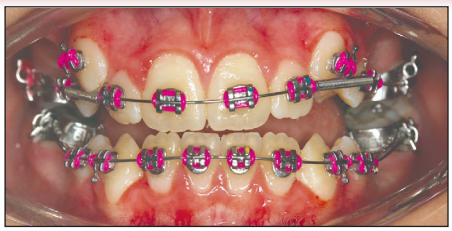
The lingual arch was removed and the lower molars were banded. A .036" soldered palatal bar was fabricated and cemented to the maxillary first molars. The maxillary and mandibular arches were bonded (MBT .022) and the second bicuspids were removed by the oral surgeon.

The upper and lower arches were leveled with .016" and .018" CuNiTi wires with lace backs, and then through .016", .018", and .020" steel wires. When the maxillary first bicuspids were retracted the maxillary cuspids were leveled with an over tied .016" CuNiTi wire on a .020" steel base arch. The upper was re-leveled through .019" x. 025" steel, and spaces closed with sliding mechanics and tie backs.

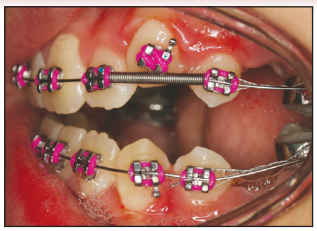
PROGRESS PHOTOS: 11 YEARS 3 MONTHS (3M TOTAL)



RIGHT BUCCAL



FRONTAL INTRAORAL



LEFT BUCCAL

MAXILLARY OCCLUSAL

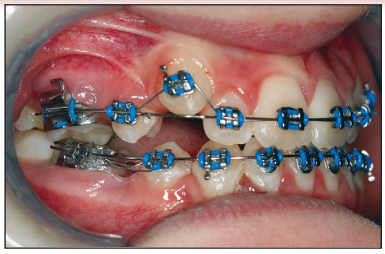
MANDIBULAR OCCLUSAL

When all spaces were closed, second molars were banded (due to their rotations), and the case was finished with up and down elastics in the buccal segments: the maxillary arch in a steel .019 x .025 and the lower arch in a .019 x .025 CuNiTi.

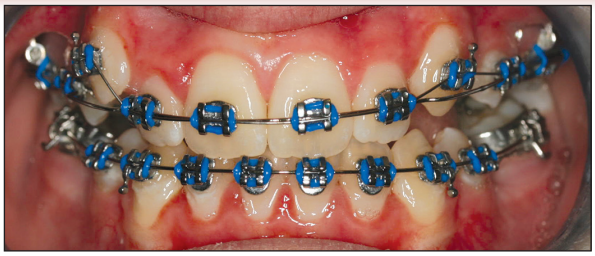
The case was debanded and a bonded mandibular 3-3 (.0195 Wildcat wire) and a wraparound maxillary Hawley retainer was delivered two weeks later. The patient was asked to wear the retainer 24 hours per day for 12 weeks and then to go to nighttime wear. To allow the occlusion to settle, the acrylic was adjusted on the retainer on the lingual side of the bicuspid and molar area.

Case Report

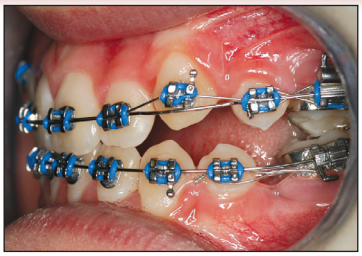
PROGRESS PHOTOS: 11 YEARS 7 MONTHS (7M TOTAL)



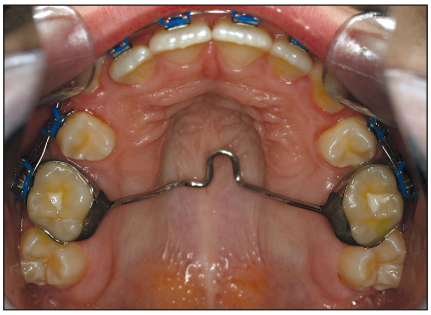
RIGHT BUCCAL



FRONTAL INTRAORAL



LEFT BUCCAL

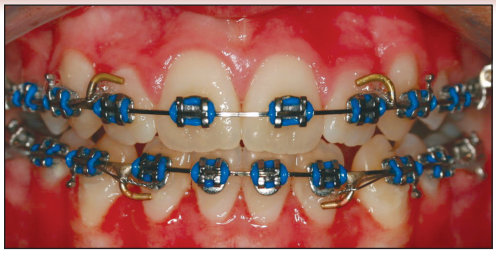


MAXILLARY OCCLUSAL

MANDIBULAR OCCLUSAL

PROGRESS PHOTOS: 12 YEARS 3 MONTHS (15M TOTAL)

RIGHT BUCCAL



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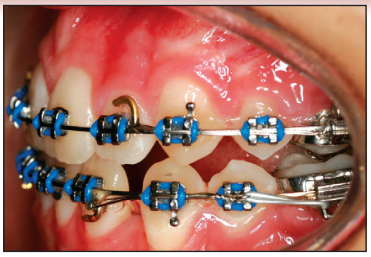

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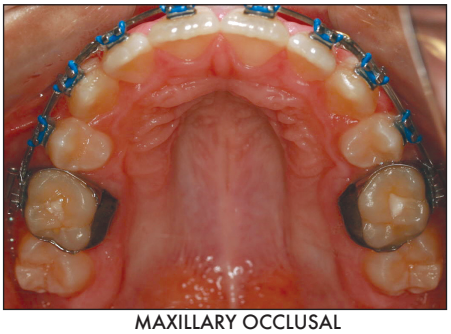
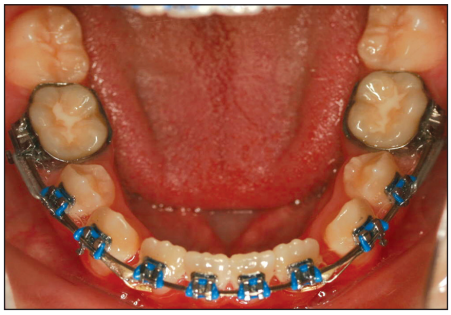


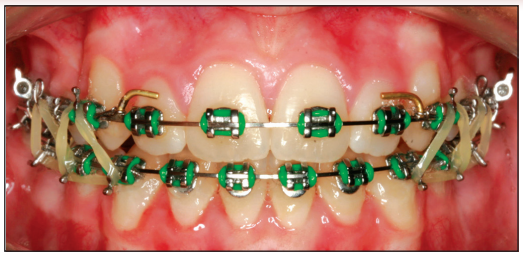
MAXILLARY OCCLUSAL



MANDIBULAR OCCLUSAL

PROGRESS PHOTOS : 12 YEARS 10 MONTHS (22 M TOTAL)

RIGHT BUCCAL



FRONTAL INTRAORAL

LEFT BUCCAL

Case Report

FINAL PHOTOS: 13 YEARS 1 MONTH (25M TOTAL)

PROFILE

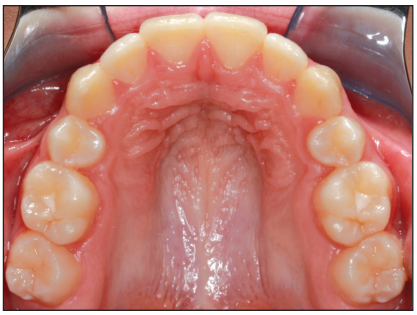
RELAXED

SMILING

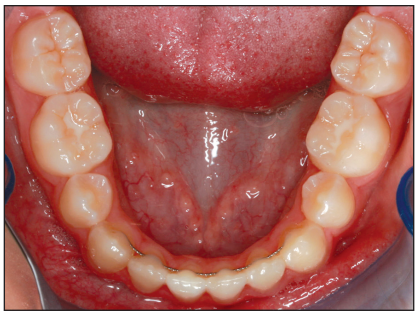
RIGHT BUCCAL

FRONTAL INTRAORAL

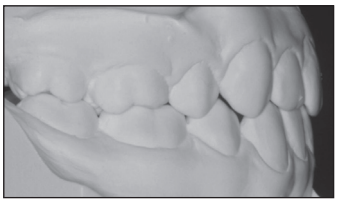
LEFT BUCCAL



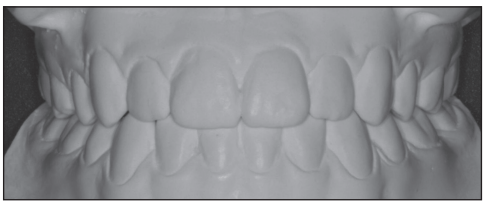
MAXILLARY OCCLUSAL



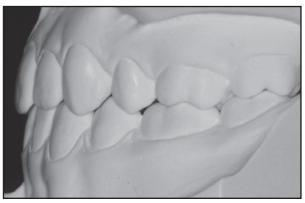
MANDIBULAR OCCLUSAL



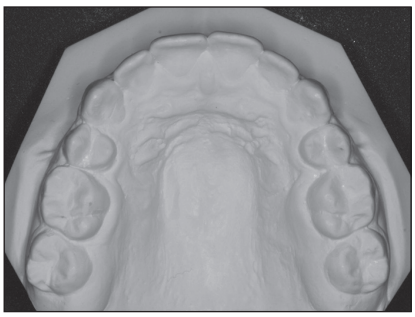
RIGHT BUCCAL MODEL



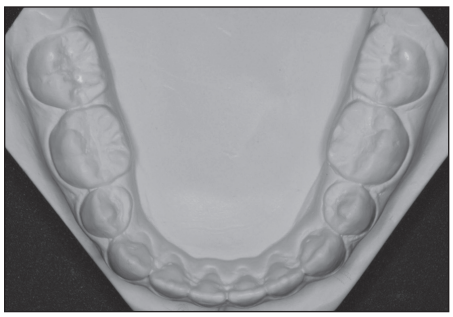
FRONTAL INTRAORAL MODEL



LEFT BUCCAL MODEL



MAXILLARY OCCLUSAL MODEL



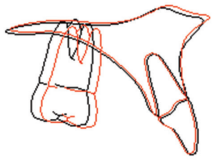
MANDIBULAR OCCLUSAL MODEL

FINAL X-RAYS

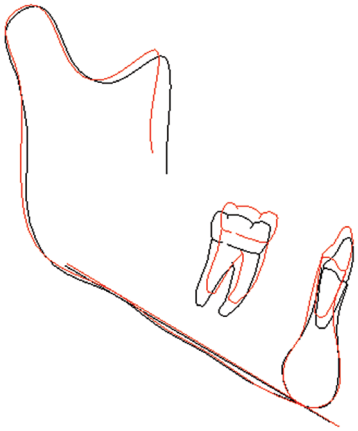
POST-TX CEPHALOMETRIC X-RAY

POST-TX PANORAMIC X-RAY

GENERAL SUPERIMPOSITION



MAXILLARY SUPERIMPOSITION



MANDIBULAR SUPERIMPOSITION

RESULTS ACHIEVED AND DISCUSSION

As stated previously, the patient had palatal expansion and E space held as part of Phase I treatment.

In many cases palatal expansion and utilization of E space with judicious and timely deciduous tooth extraction can be used to allow for more normal development of the dentition, and reduce the need for extraction of permanent teeth. Even in cases where crowding can be reduced to a minimal amount through this approach, we must be mindful of the underlying skeletal pattern and the A-P position of both the maxillary and mandibular arches. In cases like this, holding the lower E space and expansion can preserve treatment options for the future, but we must be careful to not paint ourselves into a corner with our patients by promising non-extraction treatment.

DISCUSSION: INITIAL PHOTOS—7 YEARS 9 MONTHS


PROFILE


RELAXED


SMILING


RIGHT BUCCAL


FRONTAL INTRAORAL


LEFT BUCCAL


MAXILLARY OCCLUSAL


MANDIBULAR OCCLUSAL

DISCUSSION: PROGRESS PHOTOS—9 YEARS 7 MONTHS


PROFILE

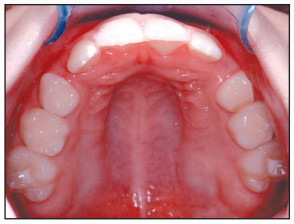

RELAXED


SMILING


RIGHT BUCCAL


FRONTAL INTRAORAL


LEFT BUCCAL


MAXILLARY OCCLUSAL

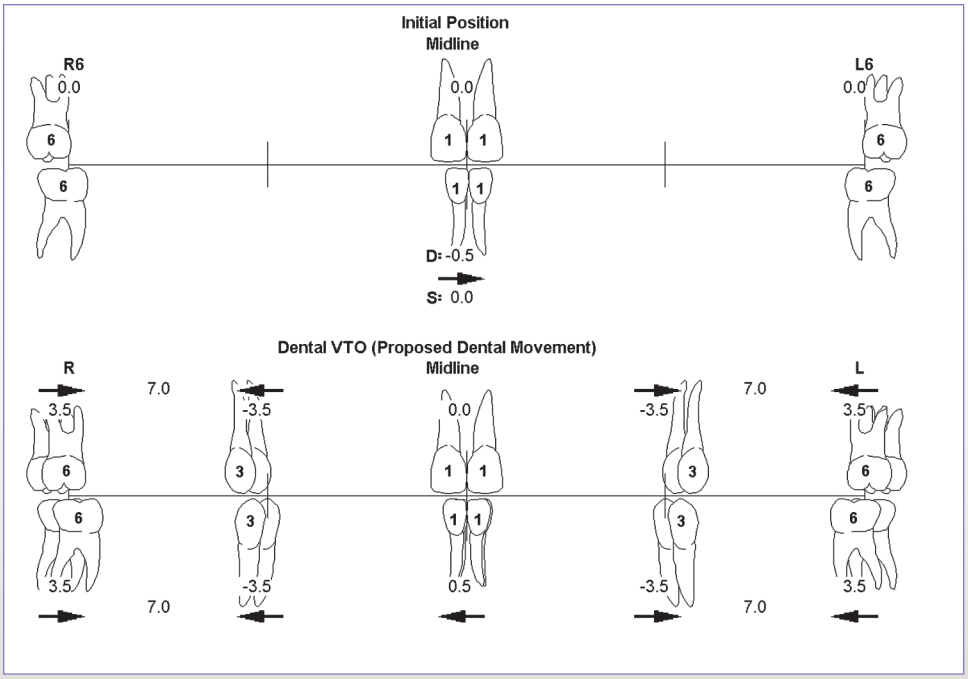

MANDIBULAR OCCLUSAL

Case Report

At first glance this patient appears close to cephalometric norms, with an ANB of 2 degrees and a slightly vertical mandibular plane of 39 degrees (which we would expect with a dolichocephalic face). However, it is the -7 mm Wits measurement, the detorqued anterior teeth and the long mandibular symphysis that guide our choice of treatment plan. Additionally, we must avoid increasing the patient's lip incompetence and lower facial height.

Treatment option #1—non-extraction and palatal expansion—will result in a skeletal bite opening (downward movement of the maxilla and subsequent clockwise

DENTAL VTO



Lower Arch Discrepancy

	3 to 3 R	3 to 3 L	7 to 7 R	7 to 7 L
Crowding/Spacing	-2.0	-3.0	-2.0	-3.0
C/S Bicusp/E			0.0	0.0
C/S Molars			0.0	0.0
Curve of Spee	0.0	0.0	0.0	0.0
Midline	-0.5	0.5	-0.5	0.5
Incisor Position	-1.0	-1.0	-1.0	-1.0
Initial Discrepancy	-3.5	-3.5	-3.5	-3.5
Stripping	0.0	0.0	0.0	0.0
Expansion	0.0	0.0	0.0	0.0
Distalizing 6-6			0.0	0.0
Extraction	0.0	0.0	7.0	7.0
Remaining Discrepancy	-3.5	-3.5	3.5	3.5

rotation of the mandible). Leveling of the arches and protrusion of the maxillary and mandibular incisors will only exacerbate this problem. Once headed down this path, attempts to hold the bite closed with vertical elastics is contraindicated, as the narrow and long mandibular symphysis will not respond well to dental extrusion. This path can then become a "death spiral," with an increasingly long face and bilateral open bite, which ultimately will need to be corrected surgically.

Extraction patterns in Class III patients typically are: lower first bicuspids, lower first bicuspids/upper second bicuspids, or all four second bicuspids. (Additionally, one can consider a lower incisor, and occasionally lower second molars.)

Since this patient has a Class I molar with a Class III skeletal pattern, protruding the lower incisors and stripping with upper first bicuspids extractions while making immediate room for the maxillary cuspids (treatment option #2) moves the dentition in the wrong direction in the alveolus to obtain a functional occlusion. Option #3 is better, but again the problem becomes lower incisor position (protrusion), as well as the space requirements created by crowding and leveling. (One would be tempted to use Class III elastics here to hold the lower incisor position; the negative outcome is extrusion of the molar, leading to bite opening and spiraling again into occlusal shifting and bite opening.)

Treatment option #4 (upper second bicuspids/lower first bicuspids) is workable, and is the typical extraction pattern for Class III because it will create space in the proper relationship to correct the malocclusion. It becomes problematic because the removal of a lower first bicuspid will result in retraction of the already upright lower incisors and necessitate the use of Class II mechanics (elastics) during space closure. In a high-angle case such as this one, the use of Class II or III elastics should be avoided, as they will extrude the molars and result in bite opening and clockwise rotation.

Treatment option #5 (all four second bicuspids) makes the treatment mechanics easiest, requires the A-P shifting of the anterior teeth while creating space to level and align the arches, and reduces the chance of significant retraction of the lower.

Additionally, while it is usually a zero-sum game with regard to extrusion, we often like to think of holding the vertical by "closing the wedge."

It is important to follow patients such as this one until they finish growing, which usually occurs two years after menarche.

Photos of the patient two years after debanding show her growth changes to be minimal.

Before and after tracings show extrusion of the lower incisors and molars, while the upper molar is held in its vertical position.

DISCUSSION: TWO-YEAR RETENTION PHOTOS —15 YEARS 1 MONTH


PROFILE

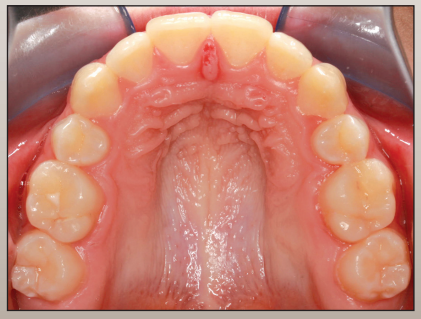

RELAXED


SMILING


RIGHT BUCCAL MODEL


FRONTAL INTRAORAL MODEL


LEFT BUCCAL MODEL


MAXILLARY OCCLUSAL MODEL


MANDIBULAR OCCLUSAL MODEL

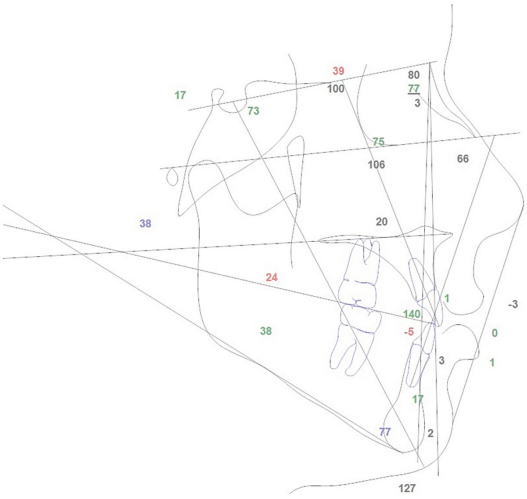
EDITOR'S COMMENTS

As with Dr. Dougherty's previous case report (Summer 2012), this is another carefully planned and well-executed treatment for a challenging case. The final outcome is very esthetic, and as can be seen when viewing the two-year retention photos, the case settled quite nicely and is very stable.

Case Report

CEPHALOMETRIC MEASUREMENTS

	Pre-TX	Post-TX	Mean
SNA	81	80	82
SNB	79	73	80
ANB	2	2	2
SN-MP	39	43	33
FMA	36	38	25
1 to NA mm	2.3	1.2	4
1 to NA deg	20	20	23
1 to SN	101	100	102
1 to NBmm	3.4	3.1	4
1 to NB deg	18	17	25
1 to MP1	78	78	95
Wits Appraisal (mm)	-7	-5	-1



FINAL CEPH TRACING

Dr. Harry (Hap) Dougherty, Jr. *received his dental and orthodontic training at Ostrow School of Dentistry of the University of Southern California. He is a Diplomate of the American Board of Orthodontics, and a Regular member of the Edward H. Angle Society. He has served in the past as the PCSO Director to the AAOF, as well as on the PCSO board. He has been in private practice in Sherman Oaks for the past 22 years, and also teaches cephalometrics and diagnosis to graduate orthodontic residents at Ostrow School of Dentistry of USC.*

Dr. Dougherty

We are always looking for interesting and well-treated cases. If you would like to submit a case, please contact our case report editor at drharner@gmail.com.

PCSO *Bulletin* Case Report Editor:
Andrew Harner, DDS, MS
Huntington Beach, California

For Pre-Treatment of Case I.M, see page 28.

EARL'S PEARLS

THE *BULLETIN* URGES READERS TO CONTRIBUTE TO THE EARL'S PEARLS COLUMN. WHILE MOST OF THE PEARLS HAVE COME FROM DR. JOHNSON, MANY ARE FROM READERS.

WE NEED YOUR HELP BEFORE THE WELL RUNS DRY. — *ed.*

NiTi COIL SPRINGS CAN BE TRICKY

Superelasticity..... When?

By Dr. Earl S. Johnson

All orthodontic wires build up resistance to further bending in a linear fashion. At a certain deflection, (yield point) Stainless, BetaTi and CrCo alloys will start to bend permanently and ultimately break if bent too far. (*Figure 1.*)

Superelastic NiTi wires can be deflected even farther in a linear fashion. Eventually, they reach a point of extreme deflection where further resistance to increased bending is not produced. Instead, NiTi phase transformation gradually converts the stressed austenitic phase into stress-induced martensite (SIM) demonstrating "superelasticity " while producing only minimal additional resistance to the continued bending. (*Figure 2.*)

Point: NiTi wires have to be stressed severely before "superelasticity " is demonstrated. This seldom happens with arch wires and never with normally wrapped NiTi open wound "compression springs".

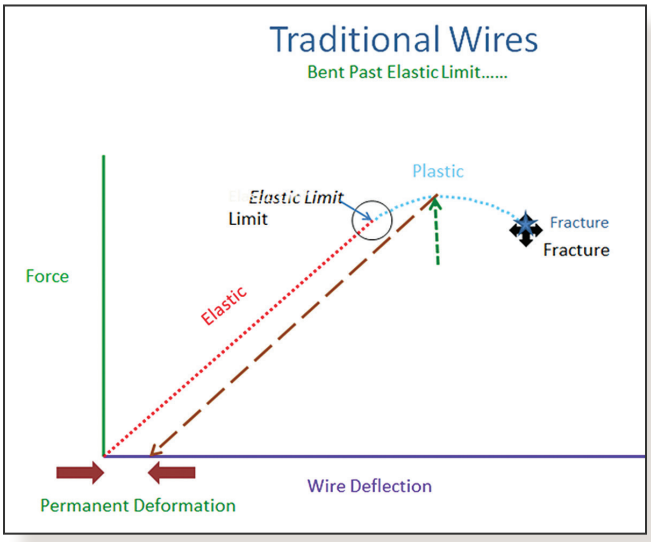


FIGURE 1. MOST WIRE ALLOYS STRESSED PAST THE YIELD POINT BEND PERMANENTLY (PLASTIC DEFORMATION) UNTIL THE WIRE FRACTURES. THIS IS TRUE FOR SS, CRCO AND BETA TI ALLOYS.

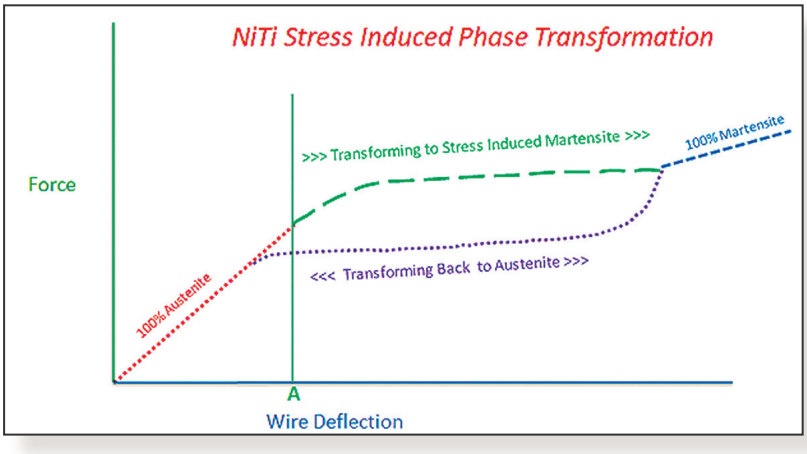


FIGURE 2. NiTi SUPERELASTICITY PRODUCED BY EXTREME DEFLECTION

NOTE:

A. THE NiTi WIRE ONLY FORMS A SUPERELASTIC "PSEUDO PLATEAU" AFTER EXTREME DISTANCE OF DEFLECTION PAST POINT A.

B. THE PHASE TRANSFORMATION PLATEAU IS NOT LEVEL BUT HAS A SLOPE TO IT.

C. ALL TOOTH MOVEMENT SHOULD OCCUR IN THE TRANSFORMATION PORTION TO THE RIGHT OF POINT A TO MINIMIZE FORCE DEGRADATION DURING MOVEMENT.

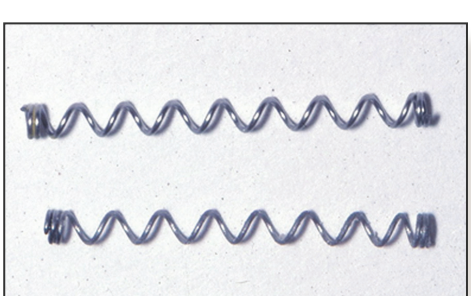


FIGURE 3. GAC OPEN COIL NITI SPRINGS. NOTE THE WIDE SPACING BETWEEN COILS THAT PERMIT STRESSING INTO SUPERELASTICITY. THESE SPRINGS CAN BE COMPRESSED DOWN TO 90% OF THEIR ORIGINAL LENGTH.

OPEN COIL NiTi EXPANSION SPRINGS

A special type of open coil NiTi springs, however, can be routinely activated and into their "superelastic" range of activation. These coils have much more space between their individual wire wraps forming the coiled wire spring. Figure 3 This extended spacing makes it easier to stress the coiled wire into a super-elastic state as it is compressed fully. GAC produces these springs. They come in pre-cut in 15 mm lengths with four different force ratings of 50 gm, 100 gm, 150 gm and 200 gm. These force ratings only apply if the spring is stressed into superelastic phase transformation.

This transformation is only possible if a spring is compressed past Point A *(Figure 2.)* down to 60% or less of its original length. If stressed less, it acts like any other linear spring (not superelastic). Complete compression down to 15% (*Figures 4a. and 7.*) maximizes the range of superelastic movement.

If the span of the space to be opened is too long for significant spring compression, add a second closed coil steel spring as a spacer, thus restricting the space available for the NiTi spring and increasing NiTi spring's percentage of compression.

CLOSED COIL NiTi RETRACTION SPRINGS

Closed coil NiTi retraction modules can become superelastic only if they are stressed at least twice their original length. Activation less than 50% results in a force level is linear and directly dependent on the amount of minimal stretching. To produce a more level retraction force, make sure your retraction module is stretched to at least 75% more than its manufactured length.

Message: Extreme activation produces superelasticity.

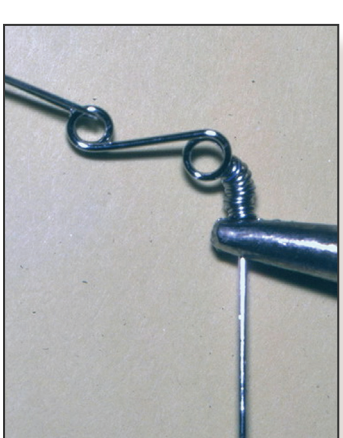


FIGURE 4A. NINETY PERCENT COMPRESSION ENABLES ACTIVATED SPRING TO BE INSTALLED IN SMALL SPACES AND DELIVER A RELATIVELY CONSTANT FORCE.

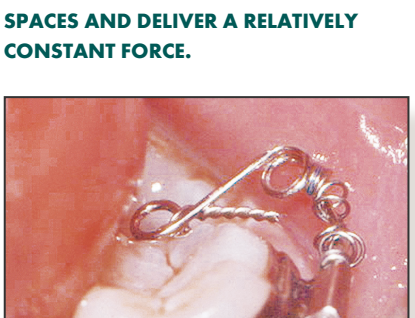


FIGURE 4B. SUPER-ACTIVATED NITI SPRING IN PLACE THAT WILL TIP MOLAR DISTALLY.

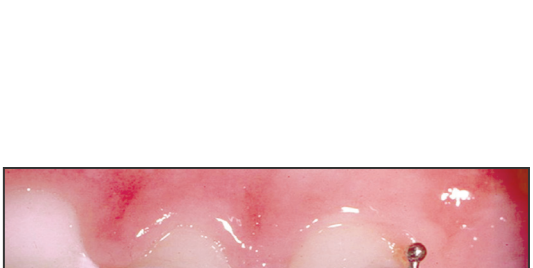


FIGURE 5. EFFICIENT SPACE OPENING. THIS 100 GM SUPERELASTIC SPRING IS VERY EFFICIENT. IT, HOWEVER, DOES NOT KNOW WHEN TO STOP, SO ITS PROGRESS MUST BE CLOSELY MONITORED AS IT CAN QUICKLY OVER-OPEN THE DESIRED SPACE.

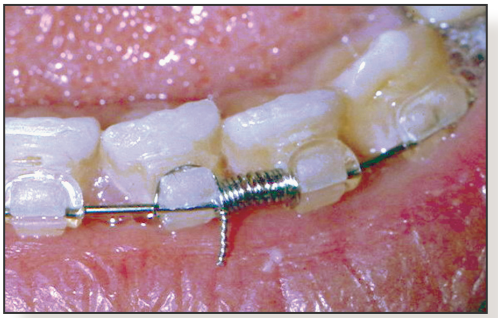


FIGURE 6. SELF-LIMITING SS COIL SPRING. IF YOU ONLY NEED A LITTLE SPACE, A MINIMALLY ACTIVATED SS SPRING MAY BE MORE PRACTICAL AS IT IS SELF-LIMITING.

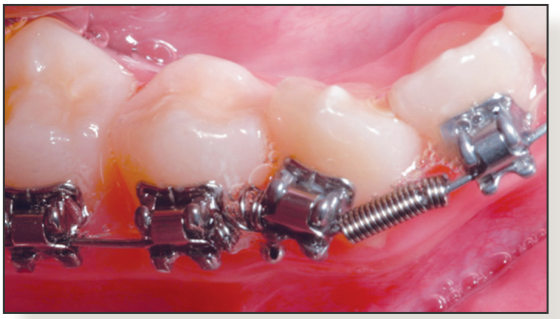


FIGURE 7. OPEN SPACE WITH CONTROLLED ROTATION. THE SECTION OF CLOSED COIL SPRING IS TO PREVENT OVER-ROTATION WHILE SPACE IS BEING DEVELOPED BY THIS SEVERELY COMPRESSED NITI SPRING.

FIGURE 8A.

FIGURE 8B. SIMULTANEOUS SPACE OPENING AND ROTATION. THE NITI COIL IS ACTIVATED WITH A SLIDING STEEL LIGATURE THAT IS LOOPED AROUND THE ARCH WIRE AND TIED TO THE DISTAL WING OF THE TOOTH TO BE ROTATED. (FIGURES 6A-B.) AS THE SPRING OPENS SPACE, THE TOOTH WILL BE ROTATED AT THE SAME TIME. THE ELASTIC THREAD IS STARTING BUCCAL MOVEMENT AT THE SAME TIME. NEXT APPOINTMENT: REMOVE THREAD &NITI SPRING; TIE IN THE LEVELING ARCH MAKING SURE THE WIRE IS FULLY SEATED AT THE MESIAL WING.

Coming: Winter 2012—

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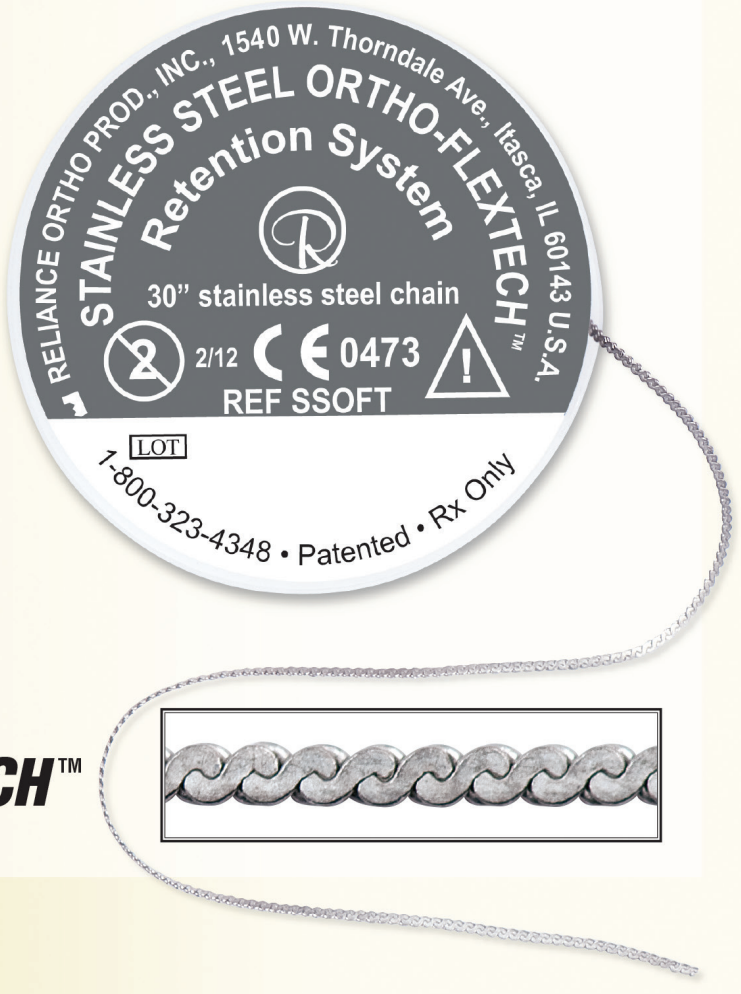

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