37th Annual Meeting

PERSONALIZED ORTHODONTICS
Back to the Future

The Ritz-Carlton, Bachelor Gulch
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FUTURE MEETINGS

38th Annual Meeting
   July 8-12, 2016
   The Omni Grove Inn | Ashville, North Carolina

39th Annual Meeting
   July 7-11, 2017
   Resort at Squaw Creek | Lake Tahoe, Nevada

PLANNING COMMITTEE

- Kimsey Anderson 2015 College President
- Ken Hrechka General Chair
- James Hartsfield Scientific Chair
- Galen & Beth Miller Social Chairs
- Valerie & Tim Jenkins Children’s Program
- Linda Rigali & Jim Clayton Golf Chair(s)
- Dan & Julie Rejman Fun Chair(s)

FOUNDING FATHERS

Dr. Raymond Thurow Dr. John Rathbone
Dr. Hubert Bell Dr. William Stutts
Dr. B.F. Dewel Dr. William Thompson
Dr. Joseph DeStasio

PAST PRESIDENTS

- 1981 Dr. Raymond C. Thurow
- 1982 Dr. Joseph G. DiStasio
- 1983 Dr. William F. Stutts
- 1984 Dr. Warren A. Kitchen
- 1985 Dr. Hubert J. Bell
- 1986 Dr. William M. Ditto
- 1987 Dr. Earle F. Cote
- 1988 Dr. Arthur C. Reed
- 1989 Dr. Larry Bramble
- 1990 Dr. John T. Ziegler
- 1991 Dr. Walter C. Buchsieb
- 1992 Dr. Samir E. Bishara
- 1993 Dr. Perry M. Opin
- 1994 Dr. O.B. Vaughan
- 1995 Dr. William A. Mitchell, Jr.
- 1996 Dr. Raymond M. Sugiyama
- 1997 Dr. John A. Cheek
- 1998 Dr. Quentin E. Lyle
- 1999 Dr. William Wallert
- 2000 Dr. W. Jerry Capps
- 2001 Dr. John S. Kanyusik
- 2002 Dr. George P. Rejebian
- 2003 Dr. Raymond George, Sr.
- 2004 Dr. Robert Justus
- 2005 Dr. John Carter
- 2006 Dr. Robert Nemeth
- 2007 Dr. Richard Ridgley
- 2008 Dr. Thomas Skafidas
- 2009 Dr. Tucker Halton
- 2010 Dr. Philip S. Markin
- 2011 Dr. Dorothy Whalen
- 2012 Dr. Rodney Hyduk
- 2013 Dr. Michael Guess
- 2014 Dr. Robert B. Moss Jr.
It is an honor and privilege to be the president of the College of Diplomates of the American Board of Orthodontics. I never would have guessed that I would be in this position when I went to my first college meeting in Halifax, Nova Scotia in July 2000. Everyone was so nice and made me feel as though I had been there for years. Over the years, I have met many new friends and colleagues and did everything to make them feel the same way I was treated at my first meeting.

This made me think about one of the goals of the College is to increase the participation of our younger members and help more orthodontists to become board certified. I am interested in your ideas and suggestions about how this can be accomplished to further the goals of the college. I have talked to a number of people over the last few months and Dr. Howard Fine came up with an innovative idea to personally invite all the doctors that have passed the written boards to come to the college summer meetings to meet, learn and recharge and ultimately, become a member of the college.

I would like to invite everyone to the 37th Annual Meeting of the College of Diplomates of the American Board of Orthodontics. The meeting will be held at the Ritz-Carlton, Bachelor Gulch in Avon, Colorado from July 17 to July 21, 2015. The Scientific Sessions will focus on Personalized Orthodontics and the relationship of genetics to the future of our specialty. Dr. James Hartsfield from the University of Kentucky, who is writing the first text book on genetics and orthodontics, has assembled an outstanding group of speakers in the field of genetics and orthodontics who will present cutting edge treatment, medicine and research that includes Genetic Considerations in Orthodontic Treatment Planning, Genetic Behaviors in Temporomandibular Disorders, How Genetics affect the Speed of Human Tooth Movement, Dental Agenesis and Cancer, Genetics and Malocclusion and much more.

The understanding of our patient’s genetics and its impact on orthodontic treatment is the next big leap in orthodontics and Jim has brought the cream of the crop in this area to present the current state of the art of genetic-orthodontic information. I have always loved genetics, since this was my undergraduate area of study, and this should be an exciting time.

The Ritz-Carlton, Bachelor Gulch is a year-round destination located on Beaver Creek Mountain and offers an unforgettable escape in the heart of the majestic Colorado Rocky Mountains. You’ll feel like you’re at home in America’s most luxurious log cabin. The Ritz-Carlton has exclusive partnerships with Colorado’s highest-rated golf courses, a world class spa, Ritz Kids Club and fine dining at Wolfgang Puck’s renowned Spago’s. The town of Avon-Beaver Creek has a courtesy shuttle bus that takes you to the local shopping and dining locations in Avon and Beaver Creek.

In addition to the scientific sessions and the fantastic lodging, the colorful Colorado mountains and valleys are there for your outdoor activities including trout fishing, golfing, horseback riding, biking, hiking, mountain climbing, train rides along scenic mountain passes, white-water rafting and all-terrain vehicle rides up to the crests of some of the local mountains.

After a morning of lectures and afternoon outdoor activities, be prepared to savor relaxation at the Ritz-Carlton’s Spa which, was named by Travel and Leisure Magazine the #1 spa in the USA and the #2 top spa in the world in 2013. The college has arranged for the resort’s spa and other amenities to be included in your room rate, which will contribute to a relaxing and revitalizing retreat.

I hope to see you there and please, invite a doctor that has never been before and have them experience the CDABO family first hand and enjoy the great Colorado beauty to revitalize your, mind, body and soul and enjoy old friends and make many new ones.

In a simple phrase, bring your GENES, wear your JEANs, and learn about GENES, and by golly if your name is Jean, Gene or your know someone with those names, we look forward to seeing you there! Make a 2015 resolution to come to this meeting and I promise you will come away knowing more about your patients and you!

2015 College President
The July 17-21 CDABO meeting theme is “PERSONALIZED ORTHODONTICS Back to the Future.” Undoubtedly, all of us diagnose and treat our individual patients with a tailor-made plan that takes into account their skeletal and/or dental malocclusion, esthetics, growth potential, compliance and other factors. Through experience, however, we all seem to learn that patients with a similar diagnosis do not always grow the same way, or respond to treatment the way we expect (or hope!). With the tremendous advances in scientific technology available today, our profession is just beginning to understand the potential benefits of incorporating “Personalized” or “Precision” medicine into our patients’ growth predictions and other aspects of orthodontic treatment. With the lectures presented at this meeting, it is my hope that you will come away with a better understanding of how intrinsic genetic factors can influence the way our patients grow, the genetic basis for certain dental eruption and development abnormalities, including associations with cancer, and how the genetic make-up of our patient may influence their responsiveness to environmental factors (including orthodontic treatment).

Upon entering this new and “Futuristic” age of scientific investigation into such areas of genetics, bone biology, muscle biology, and respiration; orthodontists need to return “back” to our rich tradition of learning in order to understand how new technology and information fits into the scientific foundation of our specialty practice. Hence, the birth of our phrase “Back to the Future”. The first day of the program will begin after the family breakfast, during which I will talk about “Genetics and Your Family,” including information on Health and Genealogy. This will be an “audience friendly” presentation on some aspects of genetics and how they influence the health and heritage of our families and ourselves. Lorri Morford will then discuss the fascinating links between hypodontia/oligodontia and cancer; an exploration into the common factors that may connect abnormal development of teeth with the formation of cancer(s) in other areas of the body later in life. Robyn Silverstein will then close the Saturday session showing how she has incorporated genetic considerations into her orthodontic treatment planning in private practice.

On Sunday Jeff Nickel will present work that he and Laura Iwasaki have been doing on TMD, emphasizing what really happens to the disc and joint when pressure is applied (it is not what you probably have presumed!), and how genetics may influence the response. We all know that teeth do not move at the same rate in our patients, and Laura Iwasaki will present her work with Jeff Nickel on factors that affect the speed of tooth movement, including biomechanics, development, and genetics. We also know that root resorption can occur in our patients, but is it all due to the amount of force or tooth movement, or are there other factors as well? To wrap up the meeting on Sunday, I will discuss genetic and treatment factors that appear to influence external apical root resorption in orthodontic patients, as well as review proposed management when it occurs.

Monday will bring Lina Moreno Uribe to present and discuss the current morphometric and genetic studies in skeletal malocclusion. We all know not all Class II or Class III malocclusions are the same, learn how different “subtypes” of skeletal malocclusion are being investigated. We understand the impact muscle has on morphology, but why does it vary? Jim Sciote will present his cutting edge data on how different muscle fiber types, genetic variation and gene expression are related to different vertical and sagittal components of malocclusion. You know that obesity is associated with increased risk of obstructive sleep apnea, but what about when it occurs in individuals who are not obese? What is the evidence about the correlation of sagittal jaw position and obstructive sleep apnea? Can camouflage treatment of the Class II skeletal malocclusion predispose to sleep apnea, even in the patient who is not obese? Tom Kluemper will close the session on Monday by discussing his experience and research related to these questions.

Last but not least, on Tuesday Saran Huja will discuss the biology of expedited tooth movement. We hear the hype, but what is it really? Saran will talk about the scientific foundation that we need to understand in order to make informed decisions when implementing a protocol to increase the rate of tooth movement in our patients.

Have you ever had a case where some teeth just didn’t
enjoying the outdoors in Bachelor Gulch – see pages 22-24 for Summer Activity Experiences.

The College of Diplomates is Proud to Honor Dr. Perry Opin

Dr. Perry Opin has served the American Association of Orthodontists (AAO), the College of Diplomates of the American Board of Orthodontics (CDABO) and the American Dental Association (ADA), since becoming an orthodontist in many ways.

He has been a Diplomate of the American Board of Orthodontics since 1972 and is a founding member of CDABO.

As Speaker of the AAO House of Delegates he served on the AAO Board of Trustees for three years. Recently in order to provide NESO with representation at the AAO he was elected to fill the vacated Trustee position for a year. At the same time he serves as a Board member on the AAO Foundation and AAO Services Inc.

He has served CDABO as a Council member and as President in 1993. He has also served on many CDABO committees and continues to serve as its Parliamentarian. His versatility is truly amazing.

If you asked Dr. Opin what he considered his greatest achievement he would tell you it has been the opportunity to practice orthodontics in Milford, Connecticut with his son, Dr. Gary Opin. He has done all this while serving as Assistant Clinical Professor in the Department of Plastic Surgery and Dentistry at Yale University and as Assistant Clinical Professor of Orthodontics at the University of Connecticut.

Dr. Opin has received many awards not least of all have been the 2008 Brophy Distinguished Service Award by the AAO, NESO’s Joseph DiStasio Distinguished Service Award and the Founders Award by CDABO. Truly, he is a man for all seasons.
Schedule of Events

Friday, July 17, 2015

7:30am - 5:00pm  College Council Meeting  Smith Board Room
11:00am - 6:00pm  Registration  Pre-function
6:30pm - 9:00pm  Welcome Reception *(all registered family attendees)*  Slopeside Terrace

Saturday, July 18, 2015

CE Credit: 2.50 hours if attending all Saturday morning lectures.  
*(no partial credit can be given)*

7:00am - 1:00pm  Registration  Pre-function II
7:30am - 9:00am  Opening Family Breakfast *(plated breakfast for all registered family attendees)*  Salon II & III
8:15am - 9:00am  Breakfast Speaker  Salon II & III
   Genetics and Your Family, Health and Genealogy  
   Dr. James Hartsfield

9:15am - 10:15am  Dental Agenesis and Cancer  
   Dr. Lorri Ann Morford  
   Salon I
10:15am - 10:30am  Coffee Break  
   Pre-function  
   Salon I
10:30am - 11:30am  Genetic Considerations in Orthodontic Treatment Planning  
   Dr. Robyn S. Silberstein  
   Salon I
11:30am - 12:00am  Q&A  
   Salon I

FAMILY ACTIVITIES

9:00am - 1:00pm  Ritz Kids Program *(5-12 years old)*  First Floor
9:00am - 10:30am  Kid’s Scavenger Hunt *(5-12 years old)*  TBA
10:00am - 11:00am  Zumba *(pre-registration required)*  TBA
1:00pm - 5:00pm  Optional Tours *(sign up on-site with RMC)*  RMC Tour Desk

Evening  Enjoy the evening on your own
Sunday, July 19, 2015

CE Credit: 3.00 hours if attending all Sunday morning lectures.
(no partial credit can be given)

6:30am - 7:30am  Fun Run (pre-registration required)  Meet Dr. Rejman in Hotel Lobby
7:00am - 1:00pm  Registration  Pre-function II
7:30am - 9:30am  Family Breakfast Buffet (all registered family attendees)  Salon II & III

GENERAL SESSION

8:00am - 9:00am  Joules, Genes, and Behaviors in Temporomandibular Disorders  Salon I
Dr. Jeff C. Nickel

9:15am - 9:30am  Coffee Break

9:30am - 10:30am  How Biomechanics, Development and Genetics Affect the Speed of Human Tooth Movement  Salon I
Dr. Laura Iwaski

10:30am - 11:00am  College Business Meeting #1  Salon I

11:00am - 12:00pm  Genetic and Treatment Factors in External Apical Root Resorption With Orthodontia  Salon I
Dr. James Hartsfield

12:00pm - 12:30pm  Q&A  Salon I

FAMILY ACTIVITIES

8:30am - 12:30pm  Ritz Kids Program (5-12 years old)  First Floor
10:00am - 11:00am  Yoga (pre-registration required)  TBA
1:00pm - 6:00pm  Golf Tournament (pre-registration required)  Beaver Creek Golf Club
1:00pm - 5:00pm  Optional Tours (sign up on-site with RMC)  RMC Tour Desk
Evening  Enjoy the evening on your own
# Schedule of Events

## Monday, July 20, 2015

**CE Credit:** 3.00 hours if attending all Monday morning lectures.

* (no partial credit can be given)

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>7:00am - 1:00pm</td>
<td>Registration</td>
<td>Pre-function II</td>
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<tr>
<td>7:30am - 9:00am</td>
<td>Family Breakfast Buffet <em>(all registered family attendees)</em></td>
<td>Salon II &amp; III</td>
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### General Session

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<th>Time</th>
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<tbody>
<tr>
<td>8:00am - 9:00am</td>
<td>Morphometric and Genetic Studies in Skeletal Malocclusion</td>
<td>Salon I</td>
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<td></td>
<td><em>Dr. Lina Maria Moreno Uribe</em></td>
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<tr>
<td>9:00am - 10:00am</td>
<td>Muscle Variation, Genetics and Malocclusion</td>
<td>Salon I</td>
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<td><em>Dr. James J. Sciote</em></td>
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<tr>
<td>10:00am - 10:15am</td>
<td>Coffee Break</td>
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<tr>
<td>10:15am - 10:45am</td>
<td>College Business Meeting #2</td>
<td>Salon I</td>
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<tr>
<td>10:45am - 11:45am</td>
<td>Classification, Etiology and Treatment of Sleep Apnea</td>
<td>Salon I</td>
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<td><em>(Can Camouflage Orthodontic Treatment Predispose to Sleep Apnea?)</em></td>
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<td><em>Dr. G. Thomas Kluemper</em></td>
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<tr>
<td>11:45am - 12:15pm</td>
<td>Q&amp;A</td>
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<tr>
<td>12:15pm</td>
<td>Group Photo</td>
<td>TBD</td>
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<tr>
<td>12:30pm - 4:30pm</td>
<td>College Council Meeting #2</td>
<td>Smith Board Room</td>
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### Family Activities

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<tr>
<td>8:30am - 12:30pm</td>
<td>Ritz Kids Program <em>(5-12 years old)</em></td>
<td>First Floor</td>
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<td>10:00am - 11:00am</td>
<td>Zumba <em>(pre-registration required)</em></td>
<td>TBD</td>
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<tr>
<td>1:00pm - 5:00pm</td>
<td>Optional Tours <em>(sign up on-site with RMC)</em></td>
<td>RMC Tour Desk</td>
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<tr>
<td>6:30pm - 9:30pm</td>
<td>President's Dinner</td>
<td>Slopeside Terrace</td>
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Tuesday, July 21, 2015

CE Credit: 3.00 hours if attending all Tuesday morning lectures.
(no partial credit can be given)

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<tr>
<td>7:00am - 12:30pm</td>
<td>Registration</td>
<td>Pre-function II</td>
</tr>
<tr>
<td>7:30am - 9:00am</td>
<td>Family Breakfast Buffet <em>(all registered family attendees)</em></td>
<td>Salon II &amp; III</td>
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**GENERAL SESSION**

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<tbody>
<tr>
<td>8:30am - 9:30am</td>
<td>Biology of Expedited Tooth Movement</td>
<td>Salon I</td>
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<td><em>Dr. Sarandeep S. Huja</em></td>
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<tr>
<td>9:30am - 9:45am</td>
<td>Coffee Break</td>
<td>Pre-function I</td>
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<tr>
<td>9:45am - 10:45am</td>
<td>Primary Failure of Eruption and Other Dental Eruption Anomalies</td>
<td>Salon I</td>
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<td><em>Dr. Sylvia Frazier-Bowers</em></td>
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<tr>
<td>10:45am - 11:45am</td>
<td>When, How and Why You Should Refer Your Patient to a Clinical Geneticist</td>
<td>Salon I</td>
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<td><em>Dr. James Hartsfield</em></td>
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<tr>
<td>11:45am - 12:15pm</td>
<td>Q&amp;A</td>
<td>Salon I</td>
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**Summer Activity Experiences Schedule**

Optional Tours
*(see pages 22-24 for details)*

**Saturday, July 18**
- The Cowboy Way
- Biking Adventures | Glenwood Canyon – Flat Ride with Lunch
- Vail Gallery Art and Shopping Tour

**Sunday, July 19**
- Shoshone Class II-III White Water Rafting
- Upper Colorado Class I-II Float Trip
- ATV Tour

**Monday, July 20**
- Eagle Valley Brewery Tour
- Betty Ford Alpine Tour and Zip Lining
### Genetics and Your Family, Health and Genealogy
**Dr. James Hartsfield**

This will be an “audience friendly” presentation on the fundamentals of clinical/medical genetics and how they apply to our lives; ranging from understanding how genetic and environmental factors interact to influence who we are, to an exploration of our “genetic” roots, to the promise and shortcomings of “Personalized,” or “Precision” health care.

**OBJECTIVES**
- Understand the variety of ways genetic factors may be inherited and how they differ in their influence on who we are.
- Recognize the concept of genetic genealogy, what it is based on, and its limitations.
- Explain the promise and potential pitfalls of “Personalized,” or “Precision” health care.

**BIOGRAPHY**

Jim Hartsfield is a Professor and the E. Preston Hicks Endowed Chair in Orthodontics and Oral Health Research at the University of Kentucky (UK) College Of Dentistry, where he teaches orthodontic residents in the classroom and clinic. Jim is also an adjunct faculty member at Indiana University, and the University of Illinois at Chicago. He is the Director of the Hereditary Genetics/Genomics Core in the UK Center for the Biologic Basis of Oral/Systemic Diseases. Jim practices and is board certified in both orthodontics and medical genetics.

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### Dental Agenesis and Cancer
**Dr. Lorri Ann Morford**

Human dental agenesis can be caused by variations and/or mutations in a number of different genes involved in the complex process of tooth developmental. In this lecture, Dr. Morford will summarize the current knowledge base of genes which influence the occurrence and patterning of hypodontia and oligodontia. She will then focus on describing the fascinating links between different forms of dental agenesis and cancer. In this exploration of factors that connect abnormal tooth development with other medical conditions, Dr. Morford will discuss how these types of connections may one day help to improve risk predictions for certain cancers (or other disease) and how this ultimately help to save lives.

**OBJECTIVES**
- Have a better appreciation for the genetic factors that influence the occurrence and patterning of dental agenesis.
- Understand how variations or mutations in different tooth development genes may lead to phenotypes in non-dental tissues.
- Be able to describe known connections between dental agenesis and cancer.
- Be more aware of the potential implications for our patients if/when we are able to clearly identify connections between certain dental phenotypes and medical conditions in other parts of the body.

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**Summer Activity Experiences – Glenwood Canyon – Flat Ride with Lunch**

- Page 22
- and Betty Ford Garden Tour

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**Program Lecture Schedule**

**Saturday, July 18, 2015**

**CE Credit: 2.50 hours if attending all Saturday morning lectures.**

*(no partial credit can be given)*

<table>
<thead>
<tr>
<th>8:15am - 9:00am</th>
<th>Salons II &amp; III</th>
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| **Genetics and Your Family, Health and Genealogy**
**Dr. James Hartsfield**
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| 9:15am - 10:15am | Salon I |
| **Dental Agenesis and Cancer**
**Dr. Lorri Ann Morford**
Human dental agenesis can be caused by variations and/or mutations in a number of different genes involved in the complex process of tooth developmental. In this lecture, Dr. Morford will summarize the current knowledge base of genes which influence the occurrence and patterning of hypodontia and oligodontia. She will then focus on describing the fascinating links between different forms of dental agenesis and cancer. In this exploration of factors that connect abnormal tooth development with other medical conditions, Dr. Morford will discuss how these types of connections may one day help to improve risk predictions for certain cancers (or other disease) and how this ultimately help to save lives. |
BIOGRAPHY

Dr. Lorri Ann Morford, PhD is an Assistant Professor in the Genetics and Genomics Core of the Center for the Biologic Basis of Oral and Systemic Diseases within the University of Kentucky College of Dentistry. She studies the role of genetic factors in facial growth and the development of dental malocclusion and/or disease. Her scientific work has received funding from the National Institutes for Health and focuses on (a) understanding the genetic basis for human tooth agenesis and connections to cancer, and (b) the identification of genetic factors contributing to the development of a Class III malocclusion. In 2014, Dr. Morford received the B.F. Dewel Memorial Biomedical Research Award from the American Association of Orthodontists Foundation. She currently serves on the International Association of Dental Research (IADR) Craniofacial Biology Group Executive Committee as a Director, is an Editorial Board member for the Journal of Dental Research and acts as an ad hoc reviewer for several journals in dental medicine.

10:30am - 11:30am

Salon I

Genetic Considerations in Orthodontic Treatment Planning

Dr. Robyn S. Silberstein

Recognizing major and minor malformations such as variations in hands, skin, head shape and symmetry, facial patterns, tooth eruption and tooth number can offer clues that affect orthodontic treatment planning. This presentation will review deviations that a clinical orthodontist is exposed to on a regular basis that might merit appropriate referral, communication of critical information, and altered treatment timing and expectations. The specific focus of this presentation will be on genetic issues and examples that are critical to orthodontic treatment prognosis and treatment planning.

OBJECTIVES

- Utilize family history and clinical exam to recognize structural variations. Identify when and how referral, genetic testing or alteration of orthodontic treatment plan is indicated.
- Identify and evaluate critical orthodontic issues with Marfan syndrome, Cleidocranial Dysplasia, Craniosynostosis, Cleft Lip +/- Palate and Hemifacial Microsomia.
- Identify and evaluate altered tooth number and dental eruption and describe how orthodontic treatment planning might be affected.

BIOGRAPHY

Dr. Silberstein is a graduate of Northwestern University Dental School (1984). She received her orthodontic certificate (1987) and her doctorate in Craniofacial Biology (1990) from the University of Southern California. Dr. Silberstein has maintained a private orthodontic practice for over 25 years. She teaches in the orthodontic department at the University of Illinois. Dr. Silberstein is ABO certified and a member and past president of the Midwest component of the Angle Society of Orthodontists. She has contributed to orthodontic textbooks on Development of the Dentition and Occlusion and Dental Dysmorphogenesis and the upcoming text Recognizing and Correcting Developing Malocclusions.

Summer Activity Experiences – The Cowboy Way (page 22)
8:00am - 9:00am  

Salon I

**Joules, Genes, and Behaviors in Temporomandibular Disorders**

**Dr. Jeffrey C. Nickel**

To study TMJ disc fatigue failure and degenerative joint disease, thirty-six women consented to provide data of 1) TMJ work energy density (ED, mJ/mm³) and 2) duration and intensity of ambulatory muscle activities (ie: duty factor, DF). Subjects were classified based on presence (+) or absence (-) of disc displacement (DD) and pain (P). +DD+P subjects had significantly higher mean energy density (13.4 mJ/mm³) than −DD-P (control) subjects (6.3 mJ/mm³, P=0.0073). A distinguishing feature of both +DD groups were larger ED●DF, where ED•DF in +DD-P (79.8 mJ/mm³•%) was 40x larger than in −P-DD (1.7 mJ/mm³•%) subjects.

**OBJECTIVES**

- Demonstrate that TMJ disc displacement is consistent with a mechanical fatigue model of early degenerative joint disease.
- Present “myth busting” data of diurnal and nocturnal muscle behaviors.
- Show that energy density and muscle duty factors are two distinct variables in cartilage fatigue.
- Explain how energy density or duty factor are the predominate variable in diagnostic subgroups that have a common element of bilateral disc displacement.

**BIOGRAPHY**

Dr. Jeffrey Nickel is the Donald J. Thompson Associate Professor, and Program Director of the University of Missouri Kansas City Advanced Educational Program in Orthodontics and Dentofacial Orthopedics. He is also faculty in the Department of Oral and Craniofacial Sciences. Dr. Nickel is a Diplomate of the American Board of Orthodontics (2002). His research focus includes basic and clinical research in the areas of biomechanics, neurophysiology, and bone/cartilage physiology. Dr. Nickel has been funded by NIH since 2005. Before joining UMKC (2007), he was a faculty member at the University Manitoba (1992-1996), and University of Nebraska Medical Center (1996-2006).
9:30am - 10:30am
Salon I

How Biomechanics, Development, and Genetics Affect the Speed of Human Tooth Movement

Dr. Laura R. Iwasaki

Vanguard information about the nature and speed of human tooth movement in response to measured orthodontic forces will be presented. Important potential factors include: amount of force per root area, stage of development, biomarkers of inflammation secreted in gingival crevicular fluid, and genetic profile. How this cutting-edge information can affect clinical practice will be translated.

OBJECTIVES

- To show how teeth move using determinate mechanics.
- To show why applied stress magnitudes (measured force per root area) matter.
- To show how biomarkers and genetics may predict the speed of tooth movement in patients.
- To summarize how the evidence to date can be applied to clinical practice.

BIOGRAPHY

Laura Iwasaki is an Associate Professor and the Rogers Chair, Department of Orthodontics & Dentofacial Orthopedics, University of Missouri-Kansas City. Her research focus is the biomechanics of the human craniomandibular complex with special interests in the TMJ, jaw muscles, and tooth movement. Her responsibilities include clinical and didactic teaching and research supervision in the advanced education, dental and graduate programs. Dr. Iwasaki received her formal education at the Universities of British Columbia, Alberta and Manitoba. She is a Diplomate of the ABO and has been involved in the clinical practice of orthodontics for several decades.

11:00am - 12:00pm
Salons II & III

Genetic and Treatment Factors in External Apical Root Resorption with Orthodontia

Dr. James Hartsfield

It has been ten years since the initial report of a specific genetic marker associated with external apical root resorption (EARR) concurrent with orthodontia. Since then more studies have been published on the same DNA marker, some supporting the association, but some not. Other genes involved in at least two pathways that maybe involved with EARR concurrent with orthodontia have also been studied. The interactions of clinical and genetic factors are starting to be analyzed. What needs to be done in the future and how it could impact clinical practice will be presented.

OBJECTIVES

- Define the complex etiology of EARR concurrent with orthodontia.
- Recognize the clinical and genetic factors that have been studied for their association with EARR concurrent with orthodontia.
- Explain the difficulty of using genetic markers to determine the risk for EARR concurrent with orthodontia.

BIOGRAPHY (see page 8)
Morphometric and Genetic Studies in Skeletal Malocclusion

Dr. Lina Maria Moreno Uribe

Malocclusion could be defined as a disarrangement of the dental, hard and soft tissue components of the craniofacial complex. Malocclusion affects about 70% of the US population and in about 3-4% of cases present with severe facial distortion altering function and esthetics. Malocclusion can be considered a genetic complex trait in which genetic and environmental factors or their interactions result in a variety of malocclusion phenotypes. The purpose of this presentation is to show results summarizing multiple phenotype-genotype correlation studies of individuals with malocclusion performed at the Department of Orthodontics of the University of Iowa.

OBJECTIVES

- To introduce phenotype-genotype correlation studies and explain their importance in discovering factors related to malocclusion etiology.
- To explain different phenotypic approaches that could be explored with different types of orthodontic records and stimulate future multicenter collaborations.
- To provide the audience with a summary of the candidate genes studied today that seemed to be correlated with malocclusion phenotypes.

BIOGRAPHY

Dr. Lina M. Moreno Uribe is originally from Medellin-Colombia where she received her DDS in 1991 from the Instituto de Ciencias de la Salud CES. She completed her first Orthodontic residency at the University of Antioquia in 1995 and practiced orthodontics for 3 years at CES clinic. In 1998 she began her Doctoral studies in Oral Sciences with concentration in Human Genetics at the University of Iowa. She graduated in 2004 and begun her Postdoctoral training until 2006 when she began her Orthodontic training at the University of Iowa. Upon graduation, she became an Assistant Professor in the Department of Orthodontics since 2008.
Muscle Variation, Genetics and Malocclusion

Dr. James J. Sciote

ACTN3, ENPP1 and PITX2 are key genetic factors that influence jaw bone length and masticatory muscle strength in malocclusion. These results are the foundation for a paradigm shift from the bias that malocclusion results mostly from abnormal skeletal development. The findings will be presented as three objectives:

OBJECTIVES
- Associate SNPs in ACTN3, ENPP1 and PITX2 with classifications of malocclusion.
- Demonstrate how ACTN3 R577X genotype influences human masseter muscle fiber type properties and differential gene expression during mandibular bone growth in Actn3 knockout mice.
- Identify skeletal muscle genes which are differentially expressed in TMD-related muscle pain.

BIOGRAPHY

Dr. Sciote received his DDS from the University of North Carolina, and MS and PhD from the University of Michigan. He was a postdoctoral fellow in Physiology at Kings College London and has remained active in musculoskeletal research projects funded by National Institutes of Health. He has served as Chair of Orthodontics at the University of Pittsburgh, and as Associate Dean for Research and Associate Dean for Student Affairs at the Kornberg School of Dentistry, Temple University, where he is currently Professor and Director of the Craniofacial Biology Research Laboratory.

Classification, Etiology and Treatment of Sleep Apnea (Can Camouflage Orthodontic Treatment Predispose to Sleep Apnea?)

Dr. G. Thomas Kluemper

Obstructive Sleep Apnea (OSA) is an under-reported, often-undiagnosed and potentially life-threatening condition that affects between 5-8% of the population. Without polysomnography, estimates are that history and clinical examination can correctly diagnose OSA less than half the time. Dentists are increasingly involved in treatment, and particularly orthodontists would benefit from a better understanding of susceptibility to OSA when treatment planning predisposed individuals for orthodontic care. Attempts to discover environmental, phenotypic and genetic predictors for OSA have been suggestive but are not absolute and traditionally-atypical individuals are presenting with OSA and other sleep disorders. This presentation will introduce new research and attempt to clear up some of the inherent confusion in the diagnosis and overall management of OSA.

OBJECTIVES
- Gain a better understanding of phenotypic risk factors for OSA.
- Identify possible genetic indicators for this sleep disorder.
- Discover recent investigations of various cephalometric and morphometric features thought to be associated with OSA.

BIOGRAPHY

G. Thomas Kluemper is the Program Director of the Orthodontic Graduate Program at the University of Kentucky, where he has served on the faculty since 1991. Prior to joining the team at UK, he earned his Master’s degree and certificate in orthodontics at the University of Michigan. Dr. Kluemper began his dental career by practicing general dentistry for five years following his graduation from the UK College of Dentistry in 1983. He runs a faculty orthodontic practice two days a week at UK, is an Affiliate Member of the Midwest Angle Society and is a Diplomate of the American Board of Orthodontics.
Tuesday, July 21, 2015

**Program Lecture Schedule**

**Tuesday, July 21, 2015**

**Program Lecture Schedule**

**CE Credit: 3.00 hours if attending all Tuesday morning lectures.**

*(no partial credit can be given)*

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**8:30am – 9:30am**

**Salon I**

**Biography of Expedited Tooth Movement**

**Dr. Sarandeep S. Huja**

Currently there are increasing number of case reports that demonstrate that substantial reductions in treatment time are achievable. Corticotomies, vibration, laser, electric current and controlled localized injury have been suggested to increase the basal metabolic rate which then reduces treatment time. Concepts that are relevant to tissue level bone biology are reviewed here. Targeted and stochastic bone remodeling, regional acceleratory phenomena (RAP) will be discussed. I provide a brief critical review of findings from the literature on expedited tooth movement. Finally, I will summarize what evidence exists for many of the mechanisms that have been proposed in the literature.

**OBJECTIVES**

- Understanding the biologic basis of expedited tooth movement.
- Critical overview of literature on expedited tooth movement.
- Summary of mechanisms of expedited tooth movement.

**BIOGRAPHY**

Dr. Sarandeep Huja is Professor and Division Chief of Orthodontics at the University of Kentucky. He has his orthodontic training and PhD from Indiana University. From 2001-2011 he was a faculty member and then served as program director of Orthodontics at the Ohio State University. He is an Orthodontic consultant CODa and serves on the Planning and Award Review Committee of the AAOF. Dr. Huja is a member of the Midwest component of the E.H. Angle Society and a Diplomate of the American Board of Orthodontics. Dr. Huja maintains an intramural faculty practice.

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**9:45am – 10:45am**

**Salon I**

**Primary Failure of Eruption and Other Dental Eruption Anomalies**

**Dr. Sylvia Frazier-Bowers**

This lecture will take a contemporary look at diagnosis and treatment considerations based on genetic advances that is helpful to the practicing orthodontist. The focus of this lecture will be to recognize and diagnose anomalies found in orthodontic practices, including eruption disorders, short root anomaly and Class III malocclusion that have a genetic etiology. Recent data from both genetic and clinical studies will consider the necessary re-classification of orthodontic diagnoses that previously were based on clinical, descriptive characteristics to a more biologic approach. The future of orthodontics undoubtedly will include the use of genetic information toward individualized treatment options for the orthodontic patient just as it does in the practice of medicine today.

**OBJECTIVES**

- Recognize and understand the biologic basis of anomalies found in an orthodontic practice.
- Integrate knowledge of molecular biology into the diagnosis, management and patient education of your practice (ie personalized orthodontics).
- Consider the future implications of genetics on diagnosis and treatment planning.
BIOGRAPHY

Dr. Frazier-Bowers is an Associate Professor at The University of North Carolina at Chapel Hill (UNC-CH) in the Department of Orthodontics. She received a BS from the University of Illinois at Urbana-Champaign, and a DDS from the University of Illinois at Chicago. After completing the NIH Dentist-Scientist Program at UNC-CH in Orthodontics (Cert. 97’). and Genetics and Molecular Biology (PhD, 99’), she completed a post-doc at the University of Texas Health Science Center at Houston (UTHSC) in the Department of Orthodontics. Leadership positions include Director of the AADR Craniofacial biology group (CBG) 2004-2007; Councilor of CBG (2012-2015); member of Southern Association of Orthodontists Scientific Affairs Committee (2005-2013) and the AAO Council on Scientific Affairs. She teaches in the classroom and clinic at the graduate and pre-doctoral levels, conducts human genetic studies relevant to orthodontics (ie the etiology of inherited tooth disorders).

CONTINUING EDUCATION UNITS

College of Diplomates is currently an American Dental Association (ADA) CERP Recognized Provider.

Up to 11.50 hours of continuing education units (CEU) are available through this program. Seminar registrants receive one CE credit for each seminar hour attended. It is the responsibility of the individual attendee to submit any necessary continuing education credit documentation to their individual state for verification.

Continuing education credits issued for participation in the CE activity may not apply toward license renewal in all states/provinces. It is the responsibility of each participant to verify the requirements of his/her state/provincial licensing board(s).

Disclaimer: The College of Diplomates of the American Board of Orthodontics does not review or approve of, or necessarily agree with, the topics, speakers and presentations set forth in this program. As such, by virtue of your attendance at this program, you acknowledge that any and all actions taken by you based upon such topics, speakers and presentations are undertaken by you at your own risk, and you further agree to hold the College of Diplomates of the American Board of Orthodontics harmless from any and all liability in relation to the same. The College of Diplomates of the American Board of Orthodontics encourages you to make your own independent judgment as to the topics, speakers and presentations, and to rely on the advice of professionals, as appropriate, in making decisions in relations thereto.

10:45am – 11:45am  

Salon I

When, How and Why You Should Refer Your Patient to a Clinical Geneticist

Dr. James Hartsfield

Have you ever had a patient whom you wondered if they had a genetic condition or syndrome due to an enigmatic malocclusion, and or based on some of your exam findings? When, how and why you should refer your patient to a clinical geneticist will be discussed, with examples of how our clinical and radiographic examinations may be useful to the clinical geneticist in making a diagnosis, and then helping you to know what to do or not to do for your patient.

OBJECTIVES

- Define syndrome.
- Recognize how diagnostic findings in the orthodontic office can assist in the diagnosis of genetic conditions.
- Explain when you should consider referring, what information would you need to provide, and how would you find someone to refer to, for a clinical/medical genetics evaluation.

BIOGRAPHY (see page 8)
Special Events and Activities

Social Programs

Activities Exclusively for the College of Diplomates

There are many activities in and around Avon, Colorado. Some are noted for your information later in this program. The following are group events specifically for the College of Diplomates. Please note the activities that require separate sign-up and registration fees.

Activities that do not meet the minimum number needed to run may be cancelled.

Thursday, July 16, 2015

Board Reception and Dinner
6:00pm - 10:00pm
BACHELOR’S CABIN

By invitation only

VIPs, Past Presidents, Board & Guests.

Friday, July 17, 2015

Welcome Reception
6:30pm - 9:00pm
SLOPESIDE TERRACE

All registered family attendees

Our welcome reception is a time to see people you have met at past meetings or to begin new friendships. This evening will be at the resort at the Slopeside Terrace outside on the lawn. The reception will include food stations in a reception style setting. There will be a supervised activity for the children for approximately 45 minutes to give them an opportunity to meet each other. Included in Your Registration.

Saturday, July 18, 2015

Opening Family Breakfast
7:30am - 9:00am
SALON II & III

All registered family attendees – Included in your registration

Welcome to our opening annual breakfast. A plated breakfast for all registered family members begins at 7:30am in Salons II & III. At 7:50am our program begins with introductions and recognition of members at our meeting for the first time. At approximately 8:15am there will be a brief special program.

AVON/COLLEGE BOOK CLUB

A story is always better if you share it with someone else.

It takes on different faces, meaning, and perspectives through conversation and analysis. What could be better than sharing a book with a group of friends who have read it too?

If you are interested in joining us for the Avon/College Book Club gathering, please email Beth Miller at anne.beth.miller@gmail.com or phone her directly at 720-281-3593.

Please use “Book Club” as the subject line.

Based on the number of people that are interested, we will pick a book and decide on the best place and time to meet.
**Sunday, July 19, 2015**

**Fun Run/Walk**
6:30am

**MEET IN HOTEL LOBBY**

Enjoy the quiet early morning in Bachelor Gulch for a 5K walk or run. Meet Dr. Dan Rejman in the hotel lobby to lead you to the path for this event. Your registration for this event will include a Fun Run t-shirt and refreshments.

*Additional Fee required – Sign up on the College registration form*

**Family Breakfast Buffet**
7:30am - 9:00am

**SALON II & III**

*All registered family attendees*

**Golf Tournament**
1:00pm

**BEAVER CREEK GOLF COURSE**

The CDABO Golf Tournament will be played on the world class Beaver Creek Golf Course. The Beaver Creek Golf Club, nestled against the slopes of Beaver Creek Mountain, is one of the longest established golf courses in the Vail Valley. Opened in 1982, the course was designed by noted course architect Robert Trent Jones, Jr. and is known and respected for its long, narrow challenging fairways and its stunning scenery.

Robert Trent Jones Jr, the son of a golf course designer, has designed more than 250 courses in more than 40 countries on 6 continents including The Club de Golf Alcanada in Mallorca, Spain, The Bridges at Rancho Santa Fe in California, The Founders Golf Club in Sarasota, Florida, The Links at Spanish Bay in Pebble Beach, California, The Miklagard Golf Club in Norway, The Mines Resort and Golf Club in Kuala Lumpur, Malaysia and the Santiburi Golf Club in Chiang Rai, Thailand.

For the past 4 years, in between golf seasons, Beaver Creek has worked to re-shape all of the bunkers on course, aligning them more closely with their original design, and in the process installing a new drainage system and new sand for better playability. Additionally, the clubhouse restaurant formerly known as Holden’s has undergone a face lift and reopened as the Rendezvous Club, serving lunch and happy hour and other daily specials.

Appropriate golf attire is required and rental equipment is available in the Golf Shop, 970-754-5775, but must be reserved at least 48 hours in advance. You may choose your playing partner or foursome or a foursome will be assigned for you. Prizes will be awarded for various categories of play. We will provide a boxed lunch for all registered golfers. Your afternoon of golf includes greens fee, shared golf cart, range balls and a sleeve of balls at $250. per person.

*Additional Fee required – Sign up on the College registration form*

**Monday, July 20, 2015**

**Family Breakfast Buffet**
7:30am - 9:00am

**SALON II & III**

*All registered family attendees*

**President’s Dinner**
6:30pm -9:30pm

**SLOPESIDE TERRACE**

Our final evening will celebrate the week with dinner and dancing at the Slopeside Terrace, which is a very nice walk from the Ritz.

**Tuesday, July 21, 2015**

**Family Breakfast Buffet**
7:30am - 9:00am

**SALON II & III**

*All registered family attendees*
Younger guests visiting Bachelor Gulch can enjoy our western-themed and camp-inspired activities designed just for them at The Ritz Kids Roundup. The Roundup is designed to make your child’s Rocky Mountain vacation as exciting and memorable as yours. Each session begins promptly with a Roundup plan to discuss the day’s activities and review the camp rules. The program also emphasizes a healthy lifestyle and includes nutrition tips during mealtimes. This supervised program is available for children ages 5 through 12. All Roundup activities and events are included in the session prices. The Ritz Kids Roundup sessions begin and end at the RK Corral (Ritz Kids room on the 1st floor).

Ritz Kids Roundup Times & Prices

Full Day
9:00am - 4:00pm (includes lunch) $115 PER CHILD

Morning Half Day
9:00am - 1:00pm (includes lunch) $65 PER CHILD

Afternoon Half Day
12:00pm - 4:00pm (includes lunch) $65 PER CHILD

Munchies and a Movie
4:00pm - 6:00pm $25 PER CHILD

Each day a movie will be played in the Ritz Kids room, where children can enjoy relaxing on bean bags after their day of mountain activities and indulge in popcorn, pretzels, gold fish, hot chocolate and juice.

Kids’ Night Out
6:00pm - 10:00pm (includes dinner) $65 PER CHILD

A La Carte Hourly Rate
$18 PER CHILD

(Availability based on activities planned)
- 24-Hour advanced reservation notice is required for all programs and activities.
- Please call extension 1073 for Ritz Kids Roundup reservations and inquiries.
- Cancellations must be made 24 hours in advance to avoid charge.

Childcare/Babysitting Services at the Ritz-Carlton

The Ritz-Carlton is happy to arrange babysitting services for you:

Babysitting Reservations
- A 24-hour notice is appreciated when arranging or canceling childcare.
- Three-hour minimum is required.
- Sitters are independent and must be paid in cash at the end of service by guest.
- Room charges or credit card charges are not accepted.

Babysitting Rates
- One Child PER HOUR, MIN (3) $15.00
- Additional Family Member PER HOUR $2.00
- After 11:00pm TRANSPORTATION $10.00
- After (6) Hours MEAL REQUIRED
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<thead>
<tr>
<th>Day</th>
<th>Morning</th>
<th>Afternoon</th>
<th>Kids’ Night Out</th>
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<tr>
<td>Monday</td>
<td>Forest, Nature Hike</td>
<td>Lunch &amp; Games</td>
<td>Rivers</td>
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<td></td>
<td>Rocky Mountain Arts &amp; Crafts</td>
<td>Gold Panning in Bachelor Gulch</td>
<td>Dinner, Cupcake Decoration,</td>
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<td>Grotto Adventure</td>
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<tr>
<td>Tuesday</td>
<td>Hotel Scavenger Hunt</td>
<td>Amazing Nature</td>
<td>Myths and Legends</td>
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<td></td>
<td>Rocky Mountain Arts &amp; Crafts</td>
<td>Lunch &amp; Games</td>
<td>Pizza Party &amp; Beaver Creek</td>
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<td></td>
<td>Beaver Creek Village Fun</td>
<td>Scavenger Hunt</td>
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<tr>
<td>Wednesday</td>
<td>Nature Hike</td>
<td>What Good is a Tree, Lunch &amp; Games</td>
<td>Rivers</td>
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<td></td>
<td>Rocky Mountain Arts &amp; Crafts</td>
<td>Bachelor’s Chocolate Factory Experience</td>
<td>Dinner, Cupcake Decoration,</td>
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<td>Grotto Adventure</td>
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<td>Thursday</td>
<td>Forest, Hotel Candy Hunt</td>
<td>Lunch &amp; Games, Celebrate Nature</td>
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<td></td>
<td>Rocky Mountain Arts &amp; Crafts</td>
<td>Beaver Creek Village Fun</td>
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<tr>
<td>Friday</td>
<td>Outdoor Play</td>
<td>Myths and Legends</td>
<td>Rivers</td>
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<td></td>
<td>Rocky Mountain Arts &amp; Crafts</td>
<td>Lunch &amp; Games</td>
<td>Dinner, Cupcake Decoration,</td>
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<td>Grotto Adventure</td>
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<tr>
<td>Saturday</td>
<td>Celebrate Nature</td>
<td>What Good is a Tree, Lunch &amp; Games</td>
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<td></td>
<td>Rocky Mountain Arts &amp; Crafts</td>
<td>Gold Panning in Bachelor Gulch</td>
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<tr>
<td>Sunday</td>
<td>Amazing Nature</td>
<td>Myths and Legends</td>
<td>Pizza Party &amp; Beaver Creek</td>
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<td></td>
<td>Rocky Mountain Arts &amp; Crafts</td>
<td>Lunch &amp; Games</td>
<td>Scavenger Hunt</td>
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</tbody>
</table>

Please contact Ritz Kids for further details. Activities, hours of operation, and pricing are subject to change. Munchies and a Movie takes place 4:00pm - 6:00pm everyday.
Evoking the great mountain lodges of the American West, The Ritz-Carlton, Bachelor Gulch transports guests to a place far away from daily cares and pressures, and families to a place of renewed connection. Nestled in an exclusive enclave on Beaver Creek Mountain in Colorado, this luxury resort warmly welcomes guests — whether by the wagging tail of Bachelor, the hotel’s St. Bernard canine ambassador, or the glow of the stone fireplace in the majestic Great Room.

Options to be active are omnipresent, as are quiet spaces to let one’s thoughts drift in and out. Ski from village to village, enjoy a hike in the refreshing Colorado mountain air or test your mettle on one of Colorado’s top-rated golf courses. Melt the makings for s’mores over a glowing fire pit, or allow our restaurants to inspire your palate with locally infused flavors. Modern alpine charm and stunning tranquility make this Vail Valley resort a luxurious retreat, treasured by those who appreciate the magnificence of nature and the joy of simply letting go.

The Ritz-Carlton is offering the following room rates for the College Reunion!

**Guest Room Rate**
- Deluxe Guest Room Rate $239.00
- Mountain View Slope Side Double $239.00
- Bedroom Room Suites Rate $389.00

**Parking**
- Valet only and it has been reduce for CDABO guests $20.00 PER DAY

**Check-in and Check-out Times**
- Check-in 4:00pm
- Check-out 12:00pm

**Amenities and accolades at our Beaver Creek, Colorado resort include:**
- 180 well-appointed guest rooms, including 40 suites and The Ritz-Carlton Suite
- An exclusive partnership with the Red Sky Golf Club, home to Colorado’s highest-rated golf courses
- Fine dining at Spago by Wolfgang Puck, the only Colorado outpost of the chef’s famed restaurant
- The Bachelor Gulch Spa, featuring 21,000 square feet of Forbes Four-Star relaxation
- More than 26,000 square feet of indoor and outdoor function space at our luxury resort with stunning views of Vail Valley
- Travel + Leisure’s “T+L 500: The Best Hotels in the World,” #1 in Colorado in 2012
- Conde Nast Traveler’s “World’s Best Places to Stay: 2012 Gold List”
- The Ritz-Carlton, Bachelor Gulch is ranked No. 1 on the Travel + Leisure 2013 World’s Best Awards list of Top Hotel Spas in the Continental U.S.

**Time Zone**
- Mountain Daylight Time

**Average Summer Temperature**
- High 80˚F
- Low 48˚F

Hotel reservations must be made by May 31, 2015 to guarantee a room at the Ritz-Carlton!
Getting to Bachelor Gulch

Travel Details

Plan on flying into Eagle, Colorado or Denver, Colorado.

Ground Transportation

www.coloradomountainexpress.com/reservations/AFRM_ritzbg/

Bachelor Gulch offers many activities for outdoor enthusiasts – see pages 22-24 for Summer Activity Experiences.

From Eagle Creek Airport to Ritz

EGE Rates: Eagle County (Vail) Airport to Beaver Creek

<table>
<thead>
<tr>
<th>Rates</th>
<th>Adults - 13 years and older</th>
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<tbody>
<tr>
<td>1 Person</td>
<td>$41.00 PER PERSON</td>
</tr>
<tr>
<td>SUV (up to 5 people)</td>
<td>$199.00</td>
</tr>
<tr>
<td>Chartered Van (up to 10 people)</td>
<td>$199.00</td>
</tr>
<tr>
<td>Mercedes Sprinter Van (up to 12 people)</td>
<td>$259.00</td>
</tr>
</tbody>
</table>

Prices are per person, one way. Discounts for parties of 3 or more – group must travel on the same shuttle, to and from the same locations, under the same payment. Prices subject to change.

From Denver Airport to Beaver Creek

Shuttle Rates: Denver International Airport to/from Vail, Beaver Creek, Avon

<table>
<thead>
<tr>
<th>Rates Through 4/30/15</th>
<th>Adults - 13 years and older</th>
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</thead>
<tbody>
<tr>
<td>1 Person</td>
<td>$71.00</td>
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<tr>
<td>SUV (up to 5 people)</td>
<td>$459.00</td>
</tr>
<tr>
<td>Chartered Van (up to 10 people)</td>
<td>$399.00</td>
</tr>
<tr>
<td>Mercedes Sprinter Van (up to 12 people)</td>
<td>$439.00</td>
</tr>
</tbody>
</table>

Prices are per person, one way. Discounts for parties of 3 or more – group must travel on the same shuttle, to and from the same locations, under the same payment. Prices subject to change. SUVs and private charters are subject to availability – Please reserve at least 48 hours in advance.
Summer Activity Experiences

Daily Activities

The Cowboy Way

SATURDAY, JULY 18

Saddle up and get ready for a true Western Colorado Adventure. Guests will experience life in the ‘Old West’. Upon arriving at Bair Ranch, located in beautiful Glenwood Canyon, group assignments will be given and kerchiefs will be handed out to each group to signify group colors. Since Cowboys used their kerchiefs to keep dust out of their faces on their rides, guests will be encouraged to use these in any fashion they would like. Once groups are broken out - guests will then be challenged to saddle a horse (properly). Our wranglers will be on hand to watch and then ‘judge’. After the judging portion is finished, each group member will have to successfully navigate their horse through a section of barrels -learning the tricks of what it means to cut cattle. Once finished, one section will ride off on their horses and the other section will ride off on ATV’s. Given a compass and a map, guests will need to successfully navigate their way to their next area where they will have to successfully ‘rope a steer’. Once each group member accomplishes this, they can take off to the meeting area where each guest will have the opportunity for 5 shots –counted on their final score. Guests will then switch from horseback riding to ATV’s or vice versa and head to their final destination – points will be awarded on accuracy of saddling their horse, navigating the ranch, clay shooting and team work.

Length: 4 hours

Inclusions:
- Horses, ATV’s, clay shooting, Wranglers, ATV guides
- Course section set-up prior to arrivals for RZR tour
- Safety Equipment
- All necessary gear - gun/shells/ear and eye protection
- Guide gratuity, transportation included

Cost per person: $372.00

Biking Adventures

SATURDAY, JULY 18

Glenwood Canyon – Flat Ride with Lunch

Based on: tour selected (2-6 hours on trail)

Inclusions:
- Professional guide
- Round trip transportation
- Bike and helmet rental
- All necessary gear; including rain gear
- Refreshments as indicated
- Guide gratuity and tax

Cost: $176.00

Vail Gallery Art Walk and Shopping Tour

SATURDAY, JULY 18

Get in touch with the arts as you stroll through the streets and brick paved walk ways of Vail Village. Critics acclaim these galleries featuring fine oils, provocative black and whites, glass, pottery, jewelry, beadwork, and bronzes. Let’s not forget the many upscale, trendy shops that will indulge you in all the temptations.

Based on: 2 hour tour

Inclusions:
- Town of Vail Art donation
- Guided Art tour with docent and museum staff
- Gratuity

Cost: $98.00

Dress in layers to be outdoors, comfortable clothing, sunglasses and sturdy shoes recommended.
Shoshone Class II-III
White Water Rafting

Based on: half day trip (morning or afternoon)

Inclusions:
- Professional rafting guide
- All necessary equipment, including life jackets
- Round trip transportation

Cost for adults: $164.00
Cost for children 6-12 years old: $133.00
(minimum age 6 years old)

Weight and other restrictions may apply.
Trip locations and price are subject to change based on water levels.

Upper Colorado Class I-II Float Trip

Cost for adults: $164.00
Cost for children 6-12 years old: $133.00
(minimum age 6 years old)

Replenished annually by spring snow melt, the rivers of the Vail Valley become a rafter’s wonderland May through October. Rivers are relatively gentle, beginning with Class II rapids, and running up to Class V rapids. Our professional and friendly outfitters offer half day or full day excursions throughout the summer and fall months. Trip locations will be based on river flows and class requested.

The Class III Middle or Lower Eagle River and the Class IV Dowd Chute come alive in spring with snow melt from the local ski mountains. Take a “refreshing” trip down the Eagle River, just minutes from town. Later in the season, the ClassII/III Colorado River is a scenic trip through beautiful Glenwood Canyon.

Inclusions:
- Professional rafting guide
- Round trip transportation
- All necessary equipment, including life jackets
- Round trip transportation
- Guide gratuity, tax

ATV Tour

Cost for afternoon Tour: $204.00
Must be 16 years of age or older to drive ATV.
## Eagle Valley Brewery Tour

**Inclusions:**
- Three brewery tours
- Three flights of beer at each location
- Tour and tasting of Bonfire Brewery
- Tour and tasting of Crazy Mountain Brewery
- Tour and tasting of Gore Range Brewery
- One appetizer per person at Gore Range Brewery

**Cost:** $138.00

*Must be 21 years old to do each tasting and tour.*

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## Betty Ford Alpine Tour

**Inclusions:**
- Betty Ford Garden donation
- Guided Garden tour with docent
- Gratuity
- Round trip transportation

**Cost:** $98.00

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## Zip Lining

**Inclusions:**
- Professional guide
- Safety equipment
- All necessary gear
- Guide gratuity and tax

**Cost:** $263.00

*Must provide own transportation (16 miles).*
*Must wear closed toe, sturdy shoes.*
*Guests will need to do minimal hiking.*
*Guests must be at least 60 lbs and no more than 230 lbs.*
*Guests must arrive 30 minutes prior to start time.*
Please complete and email or fax this form to: Jan Beck at jbeck@aaortho.org or 314-997-1745.

Name:

Guest Name(s):

Address:

City/State/Zip

Phone:                First Time Attendee:  [ ] YES  [ ] NO

Email:                Spouse Email:

Please Check All that Apply and Note Quantity

✔  # OF PEOPLE/CATAGORY                          BEFORE APRIL 17th         BEFORE MAY 15th         AFTER JUNE 15th

[ ] ______ Member                                  $825.             $925.             $1,025.
[ ] ______ Spouse w/program*                       $575.             $675.             $775.
[ ] ______ Spouse Registration (food/events only)  $275.             $325.             $375.
[ ] ______ Residents                               $275.             $325.             $375.
[ ] ______ Non-Member Diplomate                    $1,085.           $1,185.           $1,285.
[ ] ______ Non-Member and Non ABO Certified        $1,585.           $1,685.           $1,785.
[ ] ______ Retired College Member                  $725.             $825.             $925.
[ ] ______ Full-Time Faculty                       $412.50           $462.50           $512.50
[ ] ______ Guests over 18                          $275.             $325.             $375.
[ ] ______ Ages 13-18                              $200.             $250.             $300.
[ ] ______ Ages 6-12                               $100.             $125.             $150.
[ ] ______ Ages 5 and under                        Free              Free              Free

*Only for non-orthodontist spouses who are interested in attending the scientific sessions for CE credits.

Activities

[ ] ______ Zumba/Yoga /Zumba (3 classes)           $50.00             55.00             60.00
[ ] ______ Golf                                    $225.00           $250.00           275.00
[ ] ______ Scavenger Hunt (5-12 years old)         Free              Free              Free
[ ] ______ Fun Run (includes t-shirt)               $20.00             $25.00             30.00

✔  T-SHIRT SIZE       Adult  [ ] XL  [ ] L  [ ] M  [ ] S  Youth  [ ] L (14-16)  [ ] M (10-12)  [ ] S (6-8)  [ ] XS 92-4)

Please note: if shirt not ordered by May 15, shirt size cannot be guaranteed.

Payment Information

✔ [ ] VISA[ ] MASTERCARD[ ] AMERICAN EXPRESS[ ] DISCOVER

Cardholder’s Name

Credit Card Number

Expiration Date:  CVV
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