

Conference Schedule

Registration, Presentation Sessions, and Meetings will take place in the Palisades Conference Room at the Village at Squaw Valley

Sunday, April 7, 2019

4:00 - 6:00 PM Registration
6:00 - 8:30 PM Opening Reception, *Squaw Valley Conference Center*

Monday, April 8, 2019

7:45 - 8:15 AM Registration
8:15 - 9:15 AM Welcome and Keynote Address
9:15 - 11:30 AM Session 1: Epidemiology
12:00 - 1:00 PM ISSS Board Meeting
2:30 - 6:15 PM Session 2: Risk and Resort Management

Tuesday, April 9, 2019

7:45 - 8:15 AM Registration
8:15 - 11:45 AM Session 3: Bindings
11:45 - 12:00 AM National Secretaries Meeting
3:00 - 4:30 PM Session 4: Biomechanics I
4:45 - 6:00 PM Session 5: Snow Park Jump Modeling

Wednesday, April 10, 2019

9:00 - 4:00 AM Ski Day or Tram Ride
11:30 - 1:30 PM Lunch, *Terrace Room at High Camp (at top of Tram)*

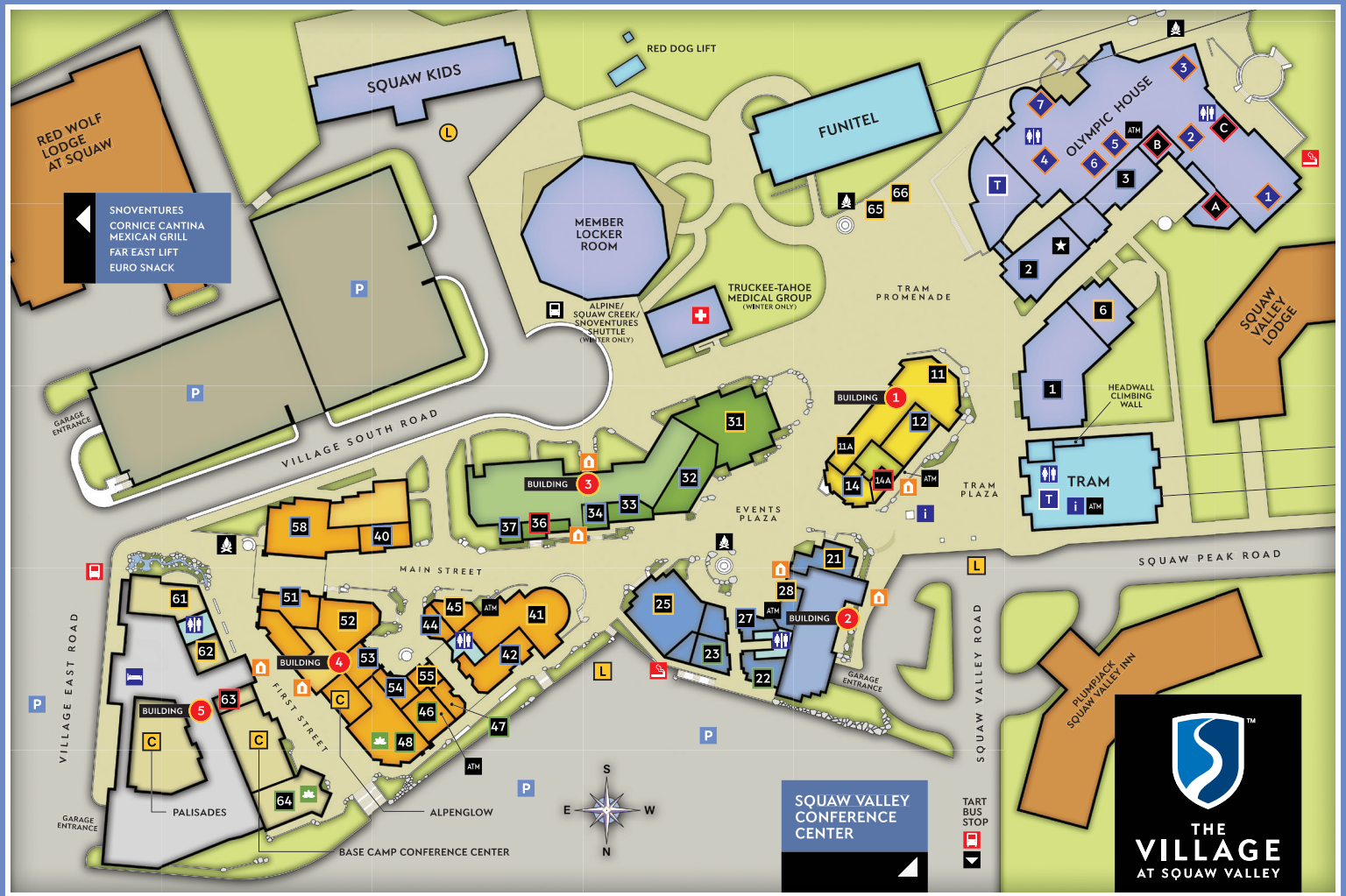
Thursday, April 11, 2019

7:45 - 8:15 AM Registration
8:15 - 11:45 AM Session 6: Biomechanics II
11:45 - 12:00 AM National Secretaries Meeting
3:00 - 4:30 PM Session 7: Upper Extremity
4:45 - 6:00 PM Session 8: Other Mountain Activities

Friday, April 12, 2019

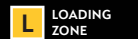
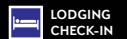
7:45 - 8:15 AM Registration
8:15 - 12:00 PM Session 9: Injury Risk Prediction and Reduction
2:30 - 4:00 PM Session 10: Technology
4:15 - 5:15 PM Session 11: Treatment and Health Outcomes
7:00 - 10:00 PM Conference Banquet and Awards, *Squaw Valley Conference Center*

VILLAGE AT SQUAW VALLEY



LODGING BUILDINGS

- 2 NORTH FACE SUITES
- 4 22 STATION WEST
- 1 FIRST ASCENT SUITES
- 3 SOUTH FACE SUITES
- 5 22 STATION EAST



OLYMPIC HOUSE

UPPER LEVEL

- 1 BAR ONE
- 5 K|TCHEN
- 2 O-LOUNGE
- 6 THE POCKET
- 3 KT BASE BAR
- 7 DAVE'S DELI
- 4 PLAZA BAR

LOWER LEVEL

- A WILDFLOUR BAKING COMPANY
- B O-HOUSE DEMO SHOP
- C DAY LOCKERS

DINING

- 6 LECHAMOI & LOFT BAR
- 11 TWENTY-TWO BISTRO & BAR
- 11A THE SLOT BAR
- 21 STARBUCKS COFFEE
- 25 FIRESIDE PIZZA COMPANY
- 28 MOUNTAIN NECTAR
- 31 ROCKER@SQUAW
- 41 AULD DUBLINER IRISH PUB & RESTAURANT
- 45 EURO SWEETS
- 52 SUKO YAMA SUSHI
- 55 SOUPA
- 61 COFFEEBAR SQUAW VALLEY
- 62 UNCORKED WINE BAR & SHOP
- 65 EURO SNACK (WINTER ONLY)
- 66 EURO CREPE (WINTER ONLY)

SHOPPING

- 1 PARALLEL MOUNTAIN SPORTS
- 2 SQUAW VALLEY SKI & SNOWBOARD RENTAL
- 3 SKI & SNOWBOARD SCHOOL SALES & RENTAL
- 12 SQUAW ONE LOGO COMPANY
- 14 PLUMPJACKSPORT
- 27 MIND PLAY
- 32 THE NORTH FACE
- 33 KALIFORNIA JEAN BAR
- 34 OAKLEY
- 37 SPRUCED GIFT & HOME
- 40 THE LEDGE BOARDSHOP
- 42 GALLERY KEOKI
- 44 LATHER & FIZZ BATH BOUTIQUE
- 51 SUREFOOT CUSTOM BOOT FITTERS
- 53 SQUAW VALLEY OUTFITTERS

SHOPPING

- 54 SQUAW DOGS
- 58 PATAGONIA

VILLAGE SERVICES

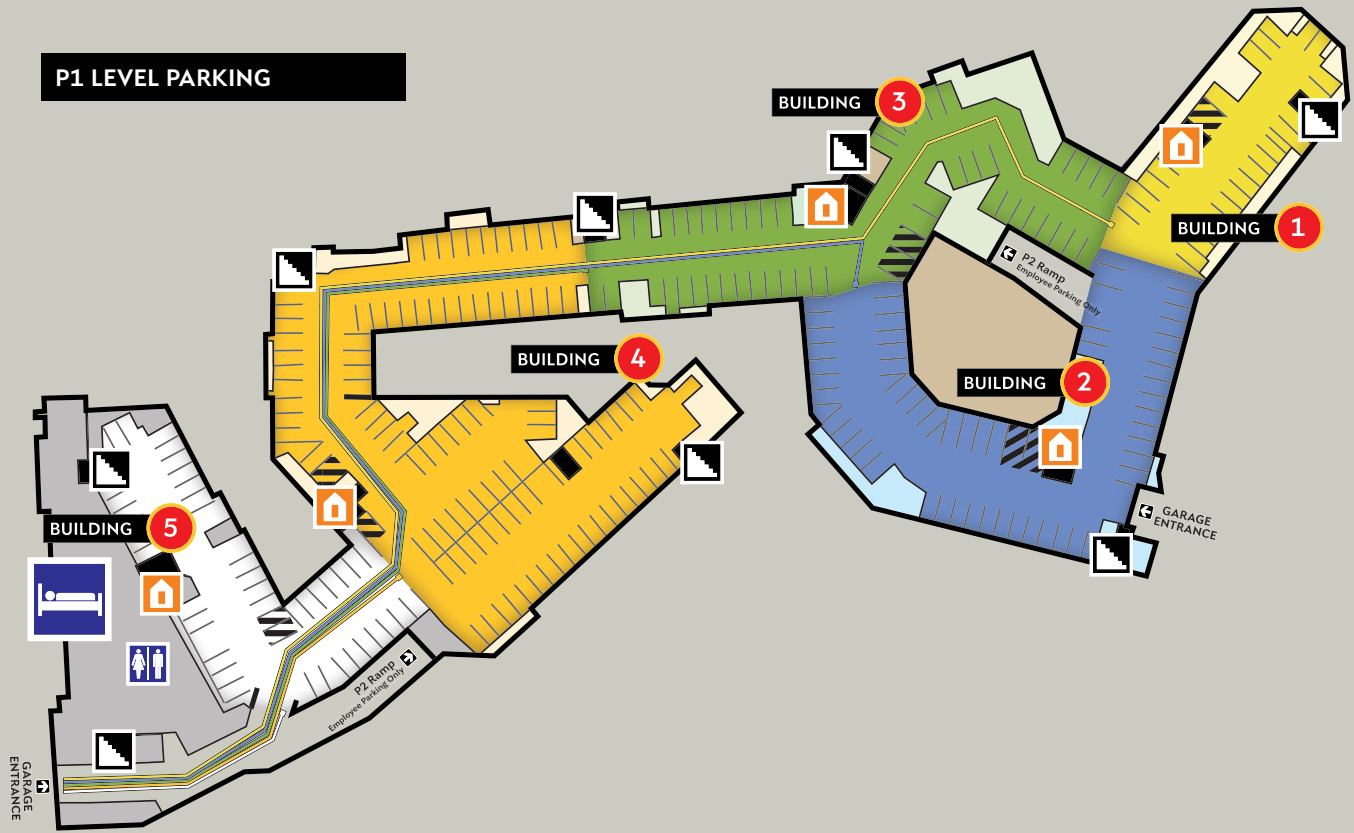
- 22 SQUAW VILLAGE NEIGHBOURHOOD CO.
- 23 ALPENGLOW EXPEDITIONS
- 46 ALICE'S MOUNTAIN MARKET
- 47 ALICE'S BOTTLE SHOP
- 48 TRILOGY SPA
- 64 WANDERLUST YOGA SQUAW VALLEY

REAL ESTATE

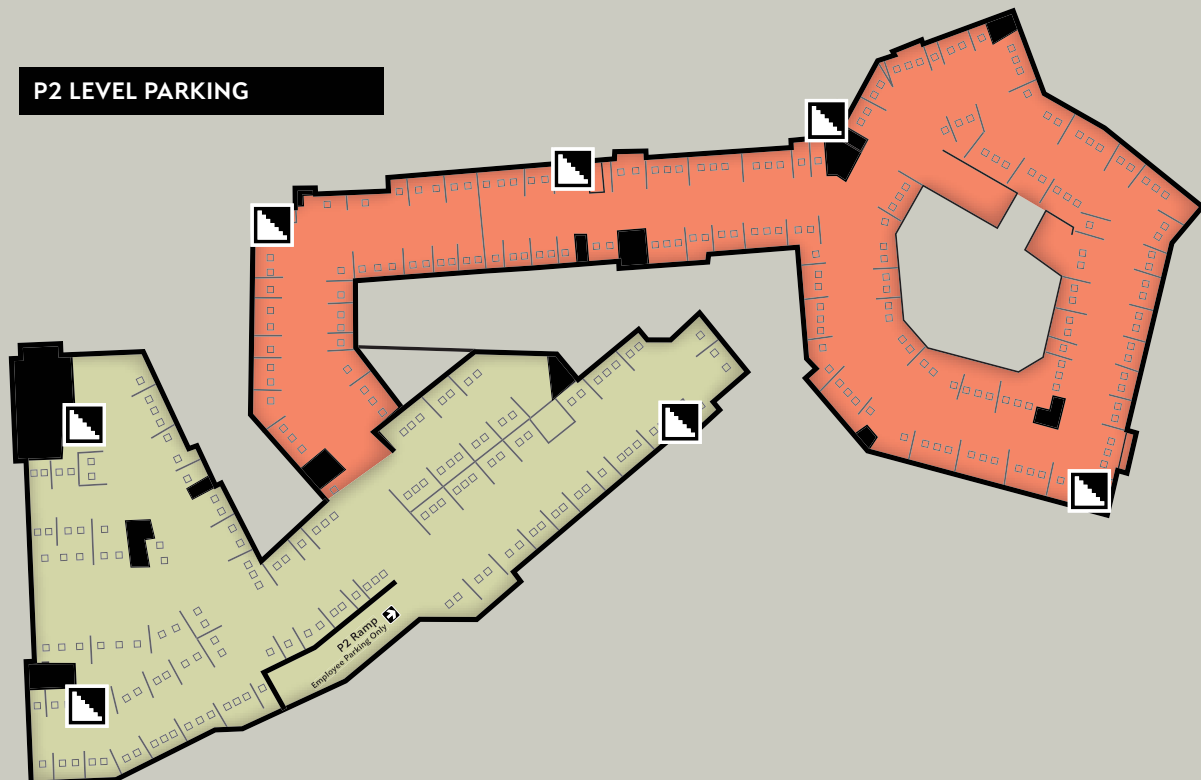
- 14A PLUMPJACK SQUAW VALLEY INN AND RESIDENCES SALES OFFICE
- 36 COMPASS REAL ESTATE
- 63 SIERRA SOTHEBY'S INTERNATIONAL REAL ESTATE

GUEST & HOMEOWNER PARKING

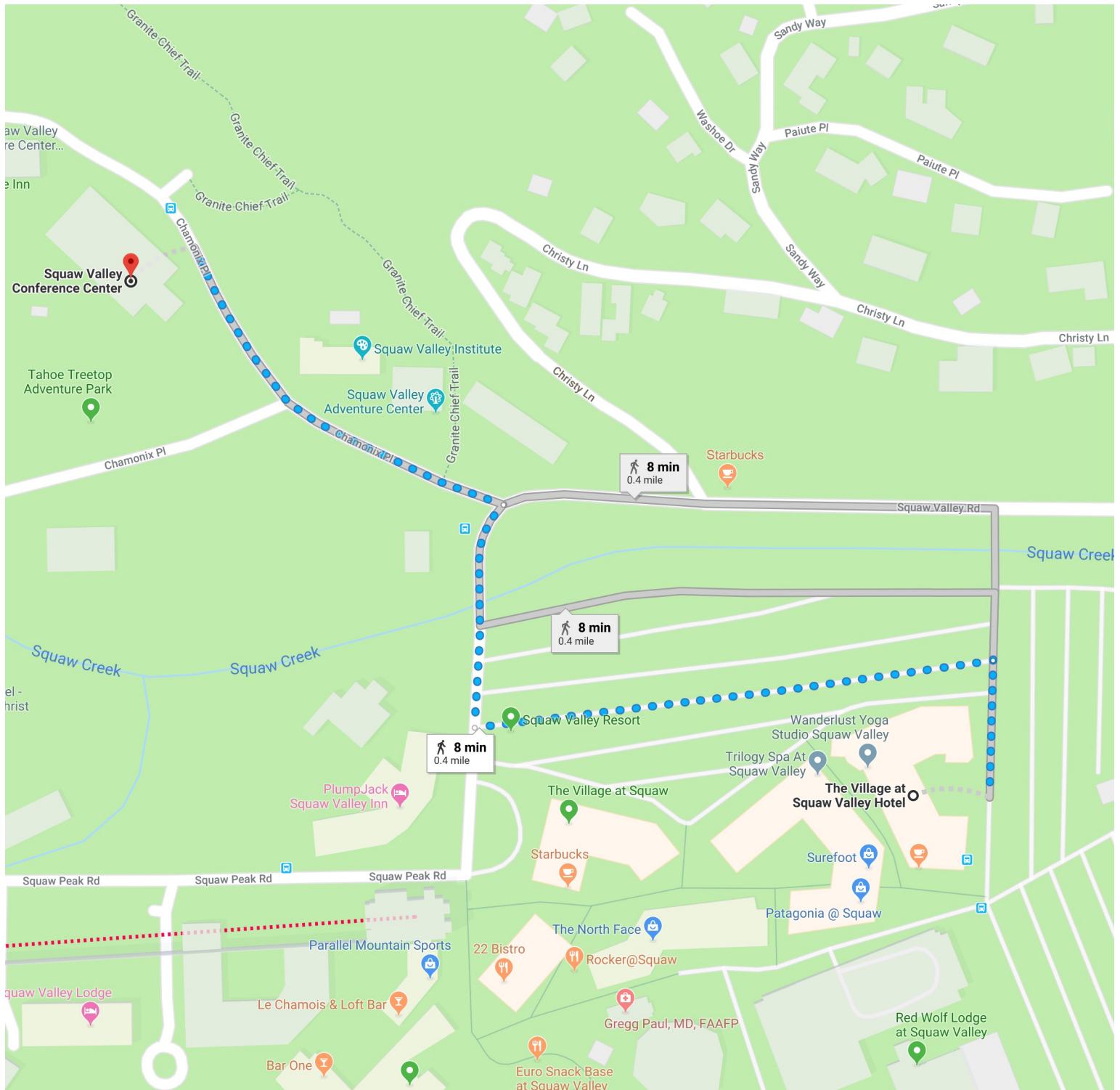
P1 LEVEL PARKING



P2 LEVEL PARKING



DIRECTIONS TO SQUAW VALLEY CONFERENCE CENTER



Monday, 8 April 2019
Morning Session

Welcome

- 8:15 - 8:30 Welcome and Introduction
- 8:30 - 9:15 Keynote: **The Real Side of Safety**
Roy Tuscany

Session 1: Epidemiology

Moderator: Robert Johnson

- 9:15 - 9:30 **How Many Ski and Snowboard Injuries Occur in the US Per Year?**
Jasper Shealy
- 9:30 - 9:45 **Snowsport Injury Trends in Western Canada for the Decade 2008-2009 to 2017-2018**
Tracey Dickson
- 9:45 - 10:00 **Update on Head and Spinal Injury Trends Since 1992 in the French Ski Resorts**
Jean Dominique Laporte

Break
10:00 AM - 10:15 AM

- 10:15 - 10:30 **Skiing and Snowboarding Related Emergency Department Visits in California**
Jasper Shealy
- 10:30 - 10:45 **Injury Patterns in Elite Youth Full-Time Alpine Ski Racers Over 2 Seasons**
Sarah Wilson
- 10:45 - 11:00 **Distribution of Knee Injuries in Downhill Skiers Matching Group Age and Specific Diagnosis**
Aleix Vidal
- 11:00 - 11:30 Panel Discussion on the Future of Snow Sports Safety
A. Ekeland, R. Johnson, M. Lamont, J. LaPorte, H. Lystad, J. Shealy

Free Time for Outdoor Activities
(11:30 AM – 2:30 PM)

ISSS Board Meeting
(12:00 PM – 1:00 PM)



23rd International Congress on Snow Sports Trauma and Safety
Squaw Valley, California, USA
April 7-13, 2019

Monday, 8 April 2019

Afternoon Session

Session 2: Risk and Resort Management

Moderator: John Rice & Mark Petrozzi

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|-------------|---|
| 2:30 - 3:15 | Keynote: State of the U.S. Ski Industry: Successes, Challenges, Myths & Trends
Dave Byrd and Mike Reitzell |
| 3:15 - 3:30 | An Objective, Systematic, Criteria-Driven Approach to On-Slope Risk Management in the Mountain Resort Setting
Mark Petrozzi |
| 3:30 - 3:45 | Terrain Park Injuries in Switzerland
Flavia Bürgi |
| 3:45 - 4:00 | Practical Terrain Park Jump Design Based on Field Experience
Elia Hamilton and Jay Scambio |
| 4:00 - 4:15 | Changing Dynamics of Pipe and Slopestyle Event Course Design and the Future of Resort Terrain Parks
Michael Bettera |
| 4:15 - 4:30 | Questions |

Break
4:30 PM - 4:45 PM

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|-------------|--|
| 4:45 - 5:00 | A Controlled Study of Skier Compliance with Posted "Slow" Signs and Ski Patrolters
Erin Harley |
| 5:00 - 5:15 | Snow Immersion Suffocation - Recent Trends
Paul Baugher |
| 5:15 - 5:30 | AIOK: Towards the First AI Engine for Skiers Safety
Riccardo De Filippi |
| 5:30 - 5:45 | Ski Patrol Database and the Visualisation of Injury Data
Benedikt Heer |
| 5:45 - 6:00 | Assessing and Assuring Effective Safety Management at California Ski Resorts
Daniel Gregorie |
| 6:00 - 6:15 | Questions |



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Tuesday, 9 April 2019

Morning Session

Session 3: Bindings

Moderator: Christoph Wurm and Helmut Holzer

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|---------------|---|
| 8:15 - 8:30 | Introduction |
| 8:30 - 9:15 | Keynote: International Standards for Ski Boots and Bindings: Two Steps Behind the Market?
Veit Senner |
| 9:15 - 9:30 | Key Factors for an Accurate Ski Binding Setting in Switzerland
Flavia Bürgi |
| 9:30 - 9:45 | Lateral-Heel Release Settings for Alpine Ski-Bindings that Address Abduction Loading
Rick Howell |
| 9:45 - 10:00 | Sensing the Skier: Towards A Mechatronic Ski Binding
Aljoscha Hermann |
| 10:00 - 10:15 | Questions |

Break
10:15 AM - 10:30 AM

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|---------------|---|
| 10:30 - 10:45 | Geometric Considerations for Alpine Touring Tech/Pin Systems
Irving Scher |
| 10:45 - 11:00 | Quantification of Functional Parameters of Modern Alpine Touring Ski-Bindings in Interaction with the Touring Ski-Boot
Lorenz Hüper |
| 11:00 - 11:15 | Directional Compression Tights Reduce Ground Reaction Force but Preserve Dynamic Stability During Alpine Skiing
Daniel Blake |
| 11:15 - 11:30 | The Effect of Foot Setting on Kinematic and Kinetic Skiing Parameters of an Elite Paralympic Skier During Giant Slalom
Nicola Petrone |
| 11:30 - 11:45 | Questions |

Free Time for Outdoor Activities
(11:45 AM – 3:00 PM)

National Secretaries Meeting
(11:45 AM - 12:00 PM)



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Tuesday, 9 April 2019

Afternoon Session

Session 4: Biomechanics

Moderator: Veit Senner

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|-------------|---|
| 3:00 - 3:15 | How the International Sports Engineering Association Supports Snow Sport Safety
Chloe Newton - Mann |
| 3:15 - 3:30 | Analysis of Knee Kinematics During Skiing and Simulated Risky Maneuvers Using an Instrumented Knee Brace
Barnaba Marchesini |
| 3:30 - 3:45 | The Effect of Canting on Knee Moments in Recreational Alpine Skiers
Sarah Wilson |
| 3:45 - 4:00 | Effects of Common Ski Boot Adjustments on Balance in Recreational Alpine Skiers
Sarah Wilson |
| 4:00 - 4:15 | The Effects of Ski Boots on uCOF and Knee Kinematics During Walking
Jonathan Lee |
| 4:15 - 4:30 | Questions |

Break

4:30 PM - 4:45 PM

Session 5: Snow Park Jump Modeling

Moderator: Irving Scher

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|-------------|--|
| 4:45 - 5:00 | Towards More Valid Simulations of Slopestyle and Big Air Jumps
Matthias Giligien |
| 5:00 - 5:15 | Towards More Valid Simulations of Slopestyle and Big Air Jumps: Aerodynamics During In-Run and Flight Phase
Fabian Wolfsperger |
| 5:15 - 5:30 | Towards More Valid Simulations of Slopestyle and Big Air Jumps: Snow Friction During In-Run
Fabian Wolfsperger |
| 5:30 - 5:45 | Accessible, Open-Source Computational Analysis and Design of Terrain Park Ski Jumps
Mont Hubbard |
| 5:45 - 6:00 | Questions |



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Thursday, 11 April 2019
Morning Session

Session 6: Biomechanics II

Moderators: Nicola Petrone and Werner Nachbauer

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|---------------|--|
| 8:15 - 8:30 | Introduction |
| 8:30 - 9:15 | Keynote: Current State of the Science in Helmet Technology Related to Winter Sports
Rick Greenwald |
| 9:15 - 9:30 | Evaluating Helmet Performances During a Head-Snow Impact
Nicolas Bailly |
| 9:30 - 9:45 | Modeling Skier Kinematics During Falls: Examining the Effect of Catching an Edge
Irving Scher |
| 9:45 - 10:00 | A 3D Musculoskeletal Simulation Model for Alpine Skiing
Martin Mössner |
| 10:00 - 10:15 | Questions |

Break
10:15 AM - 10:30 AM

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|---------------|--|
| 10:30 - 10:45 | Inverted Impacts onto Snow Park Air Bags: Potential for Severe Head and Neck Injury
Lenka Stepan |
| 10:45 - 11:00 | Can Safety Hurt: Examining Injury Potential in B-net Impacts Using MADYMO Simulations
Darrin Richards |
| 11:00 - 11:15 | Factors Influencing Variability of Safety Mattress Performances: Preliminary Results
Marine Dorsemayne |
| 11:15 - 11:30 | The Influence of Directional Compression Tights on Muscle Function During Three Consecutive Days of Alpine Skiing
John Seifert |
| 10:30 - 10:45 | Questions |

Free Time for Outdoor Activities
(11:30 AM – 3:00 PM)

General Assembly Meeting
Members Only
(11:45 AM - 12:00 PM)



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Thursday, 11 April 2019

Afternoon Session

Session 7: Upper Extremity

Moderator: Michael Lamont

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|-------------|--|
| 3:00 - 3:15 | Progress and Challenges in Developing a Standard for Snowboard Wrist Protectors
Tom Allen |
| 3:15 - 3:30 | Comparison of a Finite Element Model for Snowboard Wrist Protectors Against an Impact Test
Chloe Newton-Mann |
| 3:30 - 3:45 | Development of a Tissue Simulant to Improve Assessment of Snowboarding Wrist Protectors
Gemma Leslie |
| 3:45 - 4:00 | Thumb Protection System
Casper Smit |
| 4:00 - 4:15 | Acromio-Clavicular Injuries. Prevalence at Our Ski Resort
Aleix Vidal |
| 4:15 - 4:30 | Questions |

Break
4:30 PM - 4:45 PM

Session 8: Other Mountain Activities

Moderator: Jasper Shealy

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|-------------|--|
| 4:45 - 5:00 | The Nica Injury Surveillance System: Injuries in Youth Mountain Bike Racing
Stuart Willick |
| 5:00 - 5:15 | An Epidemiological Study of Mountain Biking Injuries Treated in Emergency Departments in the United States
Denise Cruise |
| 5:15 - 5:30 | Acquisition and Analysis of Rider-Bicycle Interactions During Downhill Trail Jumps
Nicola Petrone |
| 5:30 - 5:45 | Quantifying Snow Tube Deceleration Techniques: A Preliminary Study of Deceleration Mats
Lenka Stepan |
| 5:45 - 6:00 | Questions |



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Friday, 12 April 2019

Morning Session

Session 9: Injury Risk Prediction and Reduction

Moderator: Anne Terwiel and John Seifert

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|---------------|--|
| 8:15 - 8:30 | Introduction |
| 8:30 - 9:15 | Keynote: Looking Beyond Injuries: Will a "Social License to Operate" Benefit Snowsports?
Tracey Dickson |
| 9:15 - 9:30 | Do Low-Priced Ski Passes Lead to an Increase in Participation and Health Promotion? A Case Study of the Leisure Card Tirol
Philipp Schlemmer |
| 9:30 - 9:45 | Trend of the Situation of Skiing and Trauma Injuries in Japan
Yukio Urabe |
| 9:45 - 10:00 | Participants' Perceptions of Contributing Factors in Snowsport Terrain Park Falls and Injury
Tracey Dickson |
| 10:00 - 10:15 | A Review of Safety Aspects of Contact Features in the Terrain Park
Charles Roberts |
| 10:15 - 10:30 | Questions |

Break
10:15 AM - 10:30 AM

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|---------------|--|
| 10:45 - 11:00 | Attempt to Predict Injuries of Female Junior Alpine Ski Racers on the Basis of Fitness Parameters
Werner Nachbauer |
| 11:00 - 11:15 | Injury Risk Reduction of Professional Ski Instructors
Michael Decker |
| 11:15 - 11:30 | Changes in Somatosensory Scores in Elite Adolescent Snowsport Participants After 11 Weeks of Training and Racing
Tracey Dickson and Anne Terwiel |
| 11:30 - 11:45 | Changes in Somatosensory Scores in Snowsport Professionals After 4 Weeks of Dryland Training: Research in the Real World
Tracey Dickson and Anne Terwiel |
| 11:45 - 12:00 | Questions |

Free Time for Outdoor Activities
(12:00 PM - 2:30 PM)



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Friday, 12 April 2019

Afternoon Session

Session 10: Technology

Moderator: Tom Allen

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|-------------|---|
| 2:30 - 2:45 | Auxetic Foam to Reduce Injuries Caused by Unpredictable Collisions in Mountain Sports
Oliver Duncan |
| 2:45 - 3:00 | Ski Binding Suspension System for Vertical Load Transmission
Chris Brown |
| 3:00 - 3:15 | Advances in the Study of Concussion Mechanism Using an Instrumented Human Head Surrogate
Nicola Petrone |
| 3:15 - 3:30 | The Effect of Different Garment Fabrics on the Speed in Alpine Skiing
Michael Hasler |
| 3:30 - 3:45 | Sit Ski with Dynamic Controls
Chris Brown |
| 3:45 - 4:00 | Questions |

Break

4:00 PM - 4:15 PM

Session 11: Treatment and Health Outcomes

Moderator: Harald Lystad

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|-------------|--|
| 4:15 - 4:30 | Similar Risk of ACL Graft Revision for Alpine Skiers, Football and Handball Players, but Those ≤ 18 Years Had 5 Times Higher Rate of Graft Revision than Those ≥ 35 Years
Arne Ekeland |
| 4:30 - 4:45 | Lessons Learned from 2018 Pyeong-Chang Winter Olympic Games: What You Have to Pack in Your First Aid Back Pack for Ski Alpine Race
Seung Zhoo Yoon |
| 4:45 - 5:00 | Field of Play Medical Service for the Alpine Ski Speed Event in the 2018 Pyeongchang Winter Olympic Games
Seung Pyo Eun |
| 5:00 - 5:15 | Questions |

Conference Banquet

7:00 PM - 10:00 PM



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