Berton Rahn Research Award

Prof Dr med Dr med dent Berton Albert Anton Rahn
(1939-2008)

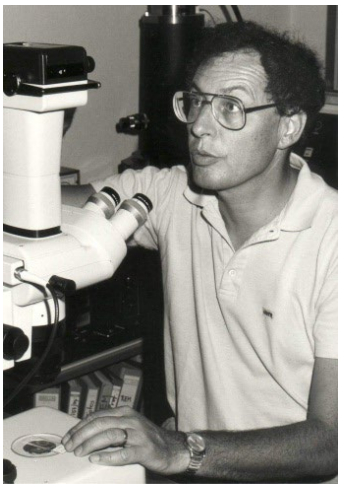
Background

The 'Berton Rahn Research Award' was established in recognition of Berton Rahn's immense contribution to the AO Foundation. The prize previously honored the best completed AO Start-up grant project of that year (based upon final reports and the publications resulting from all completed studies). Since 2017, the award is now open to any AO funded research. From August 2018, there is no longer an age limit for the award. The award consists of a keynote presentation at ARI's eCM conference (along with free registration, accommodation and travel to Davos) and a certificate.

Berton A Rahn

Here we inform you briefly about the Berton Rahn and his dedication to the Laboratory for Experimental Surgery Davos (LECD) and its continuation as AO Research Institute Davos (ARI), the AOCMF community and to the AO Foundation itself.

On March 26, 2008, Prof Dr med Dr med dent Berton Rahn passed away after a difficult illness. We as the AO Foundation family lost a friend, mentor and collaborator who dedicated himself to research for the Foundation in Davos. Berton was a highly respected scientist whose morphological-based bone histology is world-renowned and frequently used in AO courses, though often unperceived by those who use and benefit from it. At the 2009 Trustees Meeting in Chicago, the former AO Research Fund Prize Award, which annually honors the best external start-up research fund project, was renamed the Berton Rahn Research Fund Prize Award in honor of his many contributions to the AO Foundation.



Berton grew up in Schaffhausen, Switzerland and first studied dentistry in Zürich until 1964 and medicine in Berlin until 1968. In 1968 he then joined the Laboratory for Experimental Surgery (now ARI) in Davos under the Directorship of Prof Stephan Perren. Berton stayed with AO for over 37 years. Berton received his doctorate in dentistry in 1970, followed by one in medicine in 1973. He qualified as an assistant professor and in 1985 became an associate professor at the University of Freiburg in Germany. In addition to his lecturing responsibilities at the university, he gave lectures on bone healing mainly based on his own research work, at the AO Courses in Davos and worldwide. He also contributed chapters on bone biology and fracture healing to several respected books. His animal studies in sheep on healing of mandibular fractures (1970–1972) were extremely important because they showed that the healing pattern in craniofacial bones (membraneous bones) is the same as in postcranial bones.

Berton was extremely interested in the microscopic pathology (histology) of bone healing and developed polychrome sequence labeling for newly formed bone (1969), used today worldwide in bone research. This technique also led to a decrease in the number of animals needed for research models. Berton also had strong interest in all forms of microscopy and interactions of cells within tissues and with cells and tissues to implants. Berton made important contributions to the development of craniomaxillofacial surgery as well as to the important field of dental implantology. The correction of deformed and damaged maxillofacial structures using Illizarov's distraction method took some fundamental steps forward thanks to the clinical application of Berton Rahn's research. Berton was an active member of many societies and helped place AO Research on the world map. He was one of the original council members of the European Society for Biomaterials (ESB), helped organize their meeting in Davos in 1984 and 1993 and was chosen

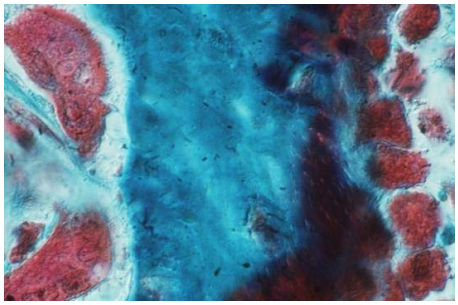
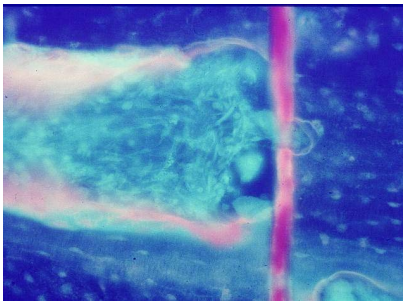
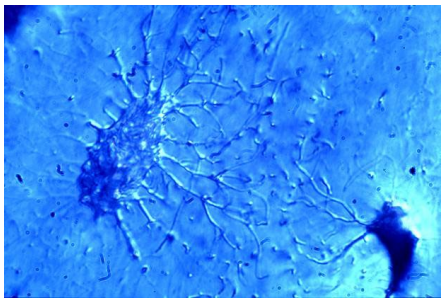
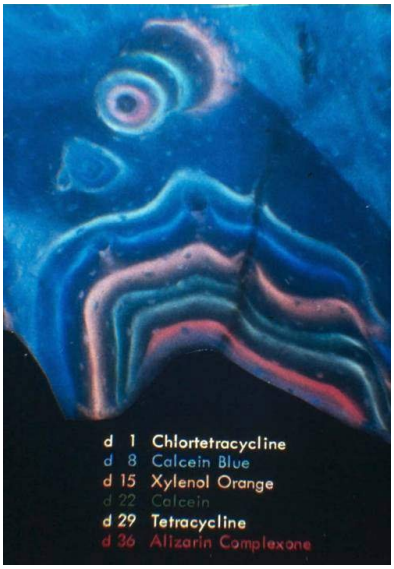
as an honorary member in 2003. Berton was an author of more than 150 papers and has had several dozens of students pass through his hands, many of them earning their doctoral degree with his help. He always listened to his student's problems and liked to help them to solve these issues through their own reasoning. His research was characterized by its creativity, and above all by the support he offered to young researchers (including Geoff Richards in the early 90's).

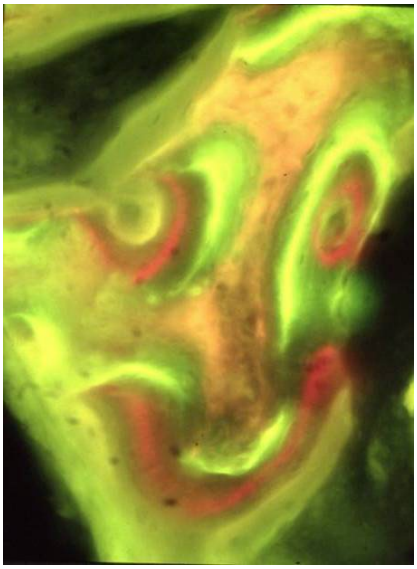
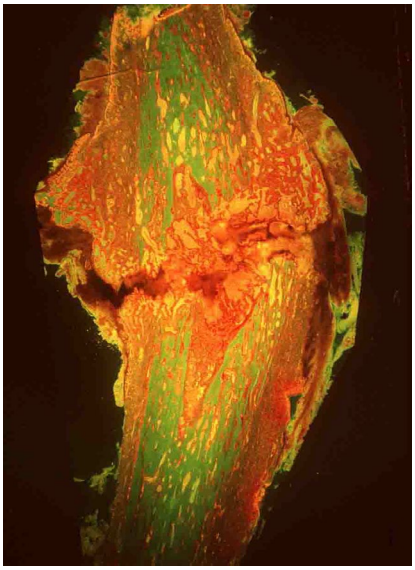
Berton was vice-director of the ARI (from 1975 onwards) and was intimately involved in the design and building of the AO Center on Clavadelerstrasse in Davos which opened in 1992.

Berton was a reserved, sensitive man, but one who in the right moment could surprise with his unique dry sense of humor. His profound humanity made being in his company a great pleasure. In his short duration of retirement, he served as a Scientific Advisor to ARI until the symptoms of his illness manifested themselves in his bones, the very part of the body that he had spent a lifetime studying.

Berton's influence throughout the formative years of the AO Research Institute Davos, and the AO Foundation as a whole, is remembered with deep gratitude.

Prof R Geoff Richards, Director AO Research & Development
Prof Dr med Stephan M Perren, Honorary & Founding Member AO Foundation, past Director LECD & ARI
Prof Dr med Joachim Prein, Honorary Trustee, AO Foundation

Berton Rahn Research Award Winner 2025:

Biographical Sketch

Dr. Marcel Dvorak

Dr. Marcel Dvorak was a full-time Professor of Orthopaedics at the University of British Columbia and held the Cordula & Günter Paetzold Chair of Clinical Spinal Cord Injury Research. He served as the Head of the Division of Spine in the Department of Orthopaedics at Vancouver General Hospital and as the Medical Director of the Combined Neurosurgical and Orthopaedic Spine Program from 2004 to 2014. Dr. Dvorak was also the Scientific Director of the Rick Hansen Foundation and an executive member of the Association for Collaborative Spine Research.

His clinical practice focused exclusively on adult spine surgery, with particular expertise in major deformity, traumatic spine and spinal cord injuries. He was deeply committed to clinical research, particularly in the areas of spinal cord and column injury and enhancing care for spinal surgery patients. In over three decades of research and practice, he authored over 400 peer-reviewed papers and delivered over 300 scientific presentations at major global conferences. In addition, he supervised the training of more than 100 graduate students and spine fellows. In 2012 Dr Dvorak was awarded the North American Spine Society's Leon Wiltse Award, recognizing excellence in leadership and clinical research in spine care.

His AO journey began with an AO Fellowship in Spine Surgery at the Inselspital Bern, Switzerland, in 1992. He became a founding member of the AO/ASIF North America Spine Education Committee in 1997, a position he held until 2002. He was also a founding member and one of three Co-Chairs of the Spine Trauma Study Group from 2002 to 2010, which later evolved into the Knowledge Forums. As one of the founding members of the Knowledge Forums, he served as a steering committee member of the AO Spine Knowledge Forum Trauma & Infection until 2024.

KF Trauma & Infection Meeting, GSC 2024, Bangkok, Thailand

Discussing the AO TL-A3/A4 study outcomes

AO Funded Research

Thoracolumbar Burst Fractures (AO Spine TLA3-A4) in Neurologically Intact Patients – *Marcel Dvorak (Principal Coordinating Investigator) and Cumhur Öner (Co-Principal Coordinating Investigator)*

Thoracolumbar (TL) burst fractures (AO TL A3A4) in neurologically intact patients account for approximately 45% of all TL spine injuries[1,2,3]. However, the current literature presents mixed and inconclusive findings, with varying recommendations and treatment algorithms. As a result, there is significant uncertainty within the expert community regarding the optimal treatment approach. In some regions, these fractures are almost always treated with surgery, while in others, surgery is rarely considered. What is even more perplexing is that there does not seem to be any clear, evidence-based reason for such a wide variation in practice. Therefore, a true state of equipoise exists wherein there is genuine uncertainty within the global expert medical community — not necessarily on the part of the individual 'surgeons' — about the preferred treatment.

The objective of this prospective, multicenter observational cohort study was to leverage the strong treatment preferences of individual international centers participating in this study, while acknowledging the genuine uncertainty in the literature and expert community. The goal was to determine which approach leads to more rapid improvement in the Oswestry Disability Index during the first year of recovery.

Through a decade-long dedication to this topic, the study demonstrated that neurologically intact patients with TL burst fractures who are appropriate candidates for surgical management may experience faster recovery times, reaching minimal disability more quickly. However, this result has not achieved statistical significance. These patients, as well as their caregivers, are likely to experience less workday loss. Additionally, surgically treated patients utilize fewer medications, notably opioids, and require fewer visits to healthcare providers and allied health professionals. Patients with secondary AO TL B1/B2 injuries who receive surgical treatment can avoid long-term disability and experience a better quality of life. From a societal perspective, patients treated surgically for AO TL A3/A4 fractures will receive the most cost-effective care, as active patients undergoing surgery experience less loss of productivity compared to those treated conservatively. This results in reduced costs for the patient, caregiver, and society at large.

What motivates treatment decisions in Neurologically intact patients with thoracolumbar burst fractures *Marcel Dvorak (Principal Coordinating Investigator), Cumhur Öner (Co-Principal Coordinating Investigator) and Charlotte Dandurand (Co-Principal Coordinating Investigator)*

To leverage the concept of equipoise and the global network of AO Spine Knowledge Forum Trauma experts, an unique approach was taken to understand how treating surgeons make treatment decisions based on radiographic evaluation in neurologically intact thoracolumbar burst fractures. This unique approach was also used to understand what radiographic characteristics lead surgeons to agree or disagree on treatment recommendations. In simple words, why two surgeons looking at the same scans or x-ray follow a completely different treatment approach. To answer this question, the objective was to examine the entire process—

[1] Dai LY, Jiang SD, Wang XY, Jiang LS. A review of the management of thoracolumbar burst fractures. Surg Neurol. 2007 Mar;67(3):221-31; discussion 231. doi: 10.1016/j.surneu.2006.08.081. PMID: 17320622.
[2] Ghobrial GM, Jallo J. Thoracolumbar spine trauma: review of the evidence. J Neurosurg Sci. 2013 Jun;57(2):115-22. PMID: 23676860.
[3] van der Roer N, de Bruyne MC, Bakker FC, van Tulder MW, Boers M. Direct medical costs of traumatic thoracolumbar spine fractures. Acta Orthop. 2005 Oct;76(5):662-6. doi: 10.1080/17453670510041745. PMID: 16263613.

from interpreting radiographic findings to classifying the injury and selecting the most appropriate treatment with the ultimate goal to improve patient care and enhance decision-making in the management of thoracolumbar burst fractures. It appeared that differences in training, regional practices, and perhaps even local school of thought or philosophy contribute to the wide range of treatment protocols. Therefore, it is evident that only in the presence of an objective outcome measurement linked to the different categories of injuries (i.e. A3, vs A4, presence of comminution, or PLC injury) surgeons can personalize their treatment of specific injury patterns to obtain the best outcomes with minimal costs, risk and do so with greater consistency across geographies and regions.

References from Thoracolumbar Burst Fractures (AO Spine TLA3-A4) in Neurologically Intact Patients and What motivates treatment decisions in Neurologically intact patients with thoracolumbar burst fractures

Peer-reviewed Journal Articles:

1. M. M. Aly, C. Dandurand, M. F. Dvorak, C. F. Oner, K. Schnake, S. Mujis, L. M. Benneker, E. Vialle, S. Rajasekaran, M. El-Skarkawi, R. M. Kanna, M. Holas, E. C. Popescu, J. W. Tee, G. Camino-Willhuber, A. F. Joaquim, O. Kenyan, H. S. Chhabra, S. Bigdon, U. Spiegel, G. D. Schroeder, J. A. Canseco, A. R. Vaccaro and R. J. Bransford. The Influence of Comminution and Posterior Ligamentous Complex Integrity on Treatment Decision Making in Thoracolumbar Burst Fractures Without Neurologic Deficit? Global Spine J 14 (1_suppl): 41S-48S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/38324603

2. G. Camino-Willhuber, S. Bigdon, C. Dandurand, M. F. Dvorak, C. F. Oner, K. Schnake, S. Muijs, L. M. Benneker, E. Vialle, J. W. Tee, O. Keynan, H. S. Chhabra, A. F. Joaquim, E. C. Popescu, J. A. Canseco, M. Holas, R. M. Kanna, M. M. Aly, N. Fallah, G. D. Schroeder, U. Spiegl, M. El-Skarkawi, R. J. Bransford, S. Rajasekaran and A. R. Vaccaro. Expert Opinion, Real-World Classification, and Decision-Making in Thoracolumbar Burst Fractures Without Neurologic Deficits? Global Spine J 14 (1_suppl): 49S-55S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/38324602

3. J. A. Canseco, T. Paziuk, G. D. Schroeder, M. F. Dvorak, C. F. Oner, L. M. Benneker, E. Vialle, S. Rajasekaran, M. El-Sharkawi, R. J. Bransford, R. M. Kanna, M. Holas, S. Muijs, E. C. Popescu, C. Dandurand, J. W. Tee, G. Camino-Willhuber, M. M. Aly, A. F. Joaquim, O. Keynan, H. S. Chhabra, S. Bigdon, U. J. Spiegl, K. Schnake and A. R. Vaccaro. Interobserver Reliability in the Classification of Thoracolumbar Fractures Using the AO Spine TL Injury Classification System Among 22 Clinical Experts in Spine Trauma Care. Global Spine J 14 (1_suppl): 17S-24S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/38324600

4. C. Dandurand, M. F. Dvorak, O. Hazenbiller, R. J. Bransford, K. J. Schnake, A. R. Vaccaro, L. M. Benneker, E. Vialle, G. D. Schroeder, S. Rajasekaran, M. El-Skarkawi, R. M. Kanna, M. M. Aly, M. Holas, J. A. Canseco, S. Muijs, E. C. Popescu, J. W. Tee, G. Camino-Willhuber, A. F. Joaquim, O. Keynan, H. S. Chhabra, S. Bigdon, U. Spiegel and C. F. Oner. Using Equipoise to Determine the Radiographic Characteristics Leading to Agreement on Best

Treatment for Thoracolumbar Burst Fractures Without Neurologic Deficits. Global Spine J 14 (1_suppl): 25S-31S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/38324599

5. C. Dandurand, N. Fallah, C. F. Oner, R. J. Bransford, K. Schnake, A. R. Vaccaro, L. M. Benneker, E. Vialle, G. D. Schroeder, S. Rajasekaran, M. El-Skarkawi, R. M. Kanna, M. Aly, M. Holas, J. A. Canseco, S. Muijs, E. C. Popescu, J. W. Tee, G. Camino-Willhuber, A. F. Joaquim, O. Keynan, H. S. Chhabra, S. Bigdon, U. Spiegel and M. F. Dvorak. Predictive Algorithm for Surgery Recommendation in Thoracolumbar Burst Fractures Without Neurological Deficits. Global Spine J 14 (1_suppl): 56S-61S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/38324597

6. C. Dandurand, C. F. Oner, O. Hazenbiller, R. J. Bransford, K. Schnake, A. R. Vaccaro, L. M. Benneker, E. Vialle, G. D. Schroeder, S. Rajasekaran, M. El-Skarkawi, R. M. Kanna, M. Aly, M. Holas, J. A. Canseco, S. Muijs, E. C. Popescu, J. W. Tee, G. Camino-Willhuber, A. F. Joaquim, O. Keynan, H. S. Chhabra, S. Bigdon, U. Spiegel and M. F. Dvorak. Understanding Decision Making as It Influences Treatment in Thoracolumbar Burst Fractures Without Neurological Deficit: Conceptual Framework and Methodology. Global Spine J 14 (1_suppl): 8S-16S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/38324598

7. M. Dvorak, C. F. Oner, C. Dandurand and K. Schnake. Summary and Future Strategies in Anticipation of the A3 A4 Fracture Study Results. Global Spine J 14 (1_suppl): 66S-69S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/38324595

8. M. F. Dvorak, C. F. Oner, K. Schnake, C. Dandurand and S. Muijs. From Radiographic Evaluation to Treatment Decisions in Neurologically Intact Patients With Thoraco-lumbar Burst Fractures. Global Spine J 14 (1_suppl): 4S-7S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/37991870

9. B. T. S. Kweh, J. W. Tee, C. Dandurand, A. R. Vaccaro, B. M. Lorin, K. Schnake, E. Vialle, S. Rajasekaran, M. El-Skarkawi, R. J. Bransford, R. M. Kanna, M. M. Aly, M. Holas, J. A. Canseco, S. Muijs, E. C. Popescu, G. Camino-Willhuber, A. F. Joaquim, H. S. Chhabra, S. F. Bigdon, U. Spiegel, M. Dvorak, C. F. Oner and G. Schroeder. The AO Spine Thoracolumbar Injury Classification System and Treatment Algorithm in Decision Making for Thoracolumbar Burst Fractures Without Neurologic Deficit. Global Spine J 14 (1_suppl): 32S-40S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/38324601

10. K. J. Schnake, M. F. Dvorak, C. F. Oner, C. Dandurand, S. Muijs and S. F. Bigdon. What Factors Influence Surgeons in Decision-Making in Thoracolumbar Burst Fractures? A Survey-Based Investigation of a Panel of Spine Surgery Experts. Global Spine J 14 (1_suppl): 62S-65S, 2024

https://www.ncbi.nlm.nih.gov/pubmed/38324596

11. Y. J. Alabdallat, G. D. Schroeder, S. Siddiqui, J. Akerstedt and M. M. Aly. How reliable is the distinction between thoracolumbar AO type A3 and A4 fractures? A systematic literature review. Eur Spine J 33 (10): 3663-3676, 2024

https://www.ncbi.nlm.nih.gov/pubmed/39030322

12. Charlotte Dandurand, Cumhur F Öner, Klaus John Schnake, Richard J Bransford, Greg D. Schroeder, Nicolas Dea, Mark R. Phillips, Alexander Joeris, Mohammad El-Sharkawi, Shanmuganathan Rajasekaran, Lorin M. Benneker, Jin W. Tee, Eugen Cezar Popescu, Jérôme Paquet, John C. France, Alexander R. Vaccaro, Marcel F Dvorak. Surgical versus non-surgical treatment of thoracolumbar burst fractures in neurologically intact patients: A Cost-utility analysis.,

The Spine Journal, 2025, ISSN 1529-9430, https://doi.org/10.1016/j.spinee.2025.01.030.

Conference proceedings

Podium/Oral Presentations

1. S. Sadiqi. Functional outcomes between surgical and nonsurgical treatment for neurologically intact patients with thoracolumbar burst fractures. 25th Annual Scientific Conference of the Canadian Spine Society (CSS). 2025. La Malbaie, QC, Canada

2. E. Vialle. Surgical and non-surgical treatment of thoracolumbar burst fractures in neurologically intact patients: A non-randomized controlled international multicentre trial. 19th Brazilian Spine Congres. 2024. Recife, Brazil

3. E. Vialle. Health Economic Analysis of Neurologically Intact Thoracolumbar A3 and A4 Fractures is dominant in supporting Surgery over Non-Surgical Treatment. 19th Brazilian Spine Congres. 2024. Recife, Brazil

4. U. Spiegel. Geschlechtsspezifische Unterschiede bei der Versorgung von thorakolumbalen Berstungsfrakturen ohne neurologische Ausfälle 19th Annual Meeting of the German Spine Society (DWG). 2024. Hamburg, Germany

5. M. Pumberger. Gesundheitsökonomische Analyse von thorakolumbalen A3- und A4-Frakturen mit intakter Neurologie zeigt die Überlegenheit der operativen Therapie gegenüber der konservativen Behandlung 19th Annual Meeting of the German Spine Society (DWG). 2024. Hamburg, Germany

6. M. Neva. Thoracolumbar Fractures - Surgery or Conservative Treatment Orthopedics and Traumatology Days 2024. 2024. Helsinki, Finland

7. Marcel F Dvorak, Cumhur F. C. Oner, Charlotte Dandurand, Alexander Joeris, Klaus Schnake, Mark Phillips, Alexander R Vaccaro, Richard Bransford, Eugen Cezar Popescu, S. R. Mohammed El-Sharkawi, Lorin M Benneker, Greg D Schroeder, Jin W Tee, John France, Jérôme Paquet, Richard Allen, William F Lavelle, Emiliano Vialle and N. Dea. Health Economic Analysis of Neurologically Intact Thoracolumbar A3 and A4 Fractures is dominant in supporting Surgery over Non-Surgical Treatment. 24th Annual Scientific Conference of the Canadian Spine Society (CSS) 2024. Whistler, BC, Canada

8. M. F. Dvorak. Health economic analysis of neurologically intact thoracolumbar A3 and A4 fractures reveals surgery to be the dominant strategy over non-surgical treatment. Global Spine Congress 2024 2024. Bangkok, Thailand

9. C. Dandurand. Health Economic Analysis of Neurologically Intact Thoracolumbar A3 and A4 Fractures is dominant in supporting Surgery over Non-Surgical Treatment North American Spine Society (NASS) 39th Annual Meeting. 2024. Chicago, IL, USA [Best papers award]

10. S. Bigdon. Neurologisch intakte thorakolumbale Burstfrakturen (AO Spine A3, A4) verbessern den ODI gleichermaßen bei operativer und konservativer Behandlung. 19th Annual Meeting of the German Spine Society (DWG). 2024. Hamburg, Germany

11. K. Schnake. "What factors influence decision making in thoracolumbar spine fractures? – A survey-based investigation involving international experts"" has been validated.". EuroSpine 2023. 2023. Frankdurt, Germany

12. B. M. Schnake. Welche Faktoren beeinflussen die Entscheidungsfindung bei Frakturen der thorakolumbalen Wirbelsäule – Ergebnisse einer internationalen Expertenbefragung. DKOU 2023. 2023. Berlin, Germany

13. M. Dvorak. Neurologically intact thoracolumbar burst fractures (AO Spine A3, A4) improve on ODI equally when treated surgically versus non-operatively. 23rd Annual Scientific Conference of the Canadian Spine Society (CSS). 2023. Quebec City, QC, Canada

14. C. Dandurand. Predictive algorithm to guide decision making in thoracolumbar burst fracture without neurological deficits. Global Spine Congress 2023 2023. Prague, Czech Republic

15. C. Dandurand. Thoracolumbar burst fractures (AO Spine A3, A4) in neurologically intact patients achieve minimal disability more quickly when treated surgically versus non-operatively. North American Spine Society (NASS) 38th Annual Meeting. 2023. Los Angeles, CA, USA

16. C. Dandurand. Predictive algorithm for surgery recommendation in thoracolumbar burst fractures without neurological deficits. North American Spine Society (NASS) 38th Annual Meeting. 2023. Los Angeles, CA, USA

Poster or Virtual Presentations

1. R. Maximilian. Therapieentscheidungen bei neurologisch intakten Patienten mit thorakolumbalen Berstungsfrakturen. 19th Annual Meeting of the German Spine Society (DWG). 2024. Hamburg, Germany

2. Joaquim. Surgical versus non-surgical treatment of thoracolumbar burst fractures (AO Spine A3, A4) in neurologically intact patients: An AO Spine nonrandomized controlled international multicentre trial. 7° Congresso Brasileiro de Abordagens Neurocirúrgicas. 2024. São Paulo, Brasil [Best poster award]

3. Joaquim. Surgical versus non-surgical treatment of thoracolumbar burst fractures (AO Spine A3, A4) in neurologically intact patients: An AO Spine nonrandomized controlled international multicentre trial. 7th Congresso Brasileiro 2024. Sao Paolo

Previous Berton Rahn Research Award Winners

2024

Passive immunization MRSA AO Registry of bone infection, including biobank Diagnosis of infection using newly synthesized antibodies

Dr. Edward Schwarz is the Burton Professor of Orthopaedics and Director of the Center for Musculoskeletal Research at the University of Rochester Medical Center, in Rochester, NY, USA.

2023

Ria Versus BMC as orthobiologic augments to allografts

Brett Crist Vice Chair of Business Development, Director of the Orthopaedic Trauma Service, Director of the Orthopaedic Trauma Fellowship, Director of the Limb Preservation Center, and is a tenured Professor of the Department of Orthopaedic Surgery at the University of Missouri Health, USA

2022

CRP Annulus Fibrosus Rupture (AFR) (ANNUMECH) Establish the functional requirements for next-generation annulus repair methods through iterative, parametric experimental and simulation studies, to develop methods for the fabrication of novel biomaterial-based repair devices, and to validate their mechanical and biological performance in organ models

Stephen Ferguson, Institute for Biomechanics, ETH Zurich, Switzerland

2021

3D printed constructs for osteochondral defect repair

Jos Malda, Department of Orthopaedics, University Medical Center Utrecht and the Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Utrecht, The Netherlands

2020

Rapid Prototyping of Custom-Made Bone-Forming Tissue Engineering Constructs & Projects on 3D printing in collaboration with ARI consortia

Ling Qin, Musculoskeletal Research Laboratory, Department of Orthopaedics & Traumatology, The Chinese University of Hong Kong, China

2019

Projects on Fracture Related Infection in collaboration with AOTrauma Clinical Priority Program Bone Infection, ARI and AOTK

Willem-Jan Metsemakers, UZ Leuven, Department of Trauma Surgery, Leuven, The Netherlands

2018

CRP Annulus Fibrosus Rupture (AFR): (ANNUPHEN)

Characterization of intervertebral disc cells and identification on a suitable cell source for efficient tissue regeneration

Daisuke Sakai, Tokai University School of Medicine in Kanagawa, Japan

2017

CRP Acute Cartilage Injury (ACI): (HiCartia)

A novel platform for optimizing material design for cartilage tissue engineering and enabling drug discovery for cartilage restoration

Robert Mauck, University of Pennsylvania (USA)

2016

Project S-12-27S:

Targeting endothelial to mesenchymal transition in fibrodysplasia ossificans progressive

Gonzalo Sánchez Duffhues, Leiden University Medical Center (NL)

2015

Project S-10-07L:

Controlling nanotopography-ECM environment for enhanced bone formation with hMSCs

Jung Yul Lim, University of Nebraska-Lincoln (USA)

2014

Project S-10-62Y:

Stem cell mobilization for enhanced bone healing

Clare Yellowley, University of California Davis (USA)

2013

Project S-07-1C:

Can low intensity pulsed ultrasound accelerate osteoporotic fracture healing?

Wing-Hoi Cheung, The Chinese University of Hong Kong (China)

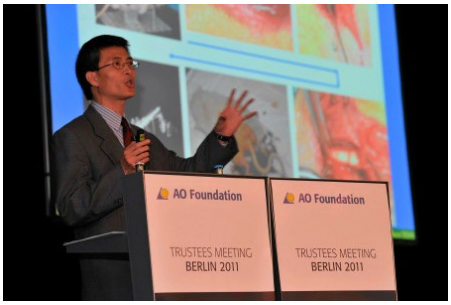
2012

Project S-05-95J:

In-situ crosslinkable osteoinductive poly(lactide) scaffold for bone regeneration

Esmaiel Jabbari, University of South Carolina (USA)

2011



Project F-07-43L:

A pilot study of interleukin-12 local delivery for infection prevention after a traumatic open fracture

Bingyun Li, West Virginia University (USA)

2010

Project 04-J44:

Skeletal effects of estrogen

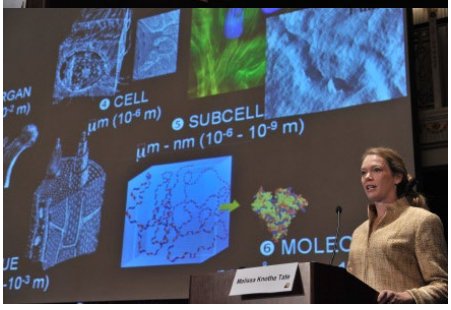
Teppo Järvinen, University of Tampere (Finland)

2009 (2 winners)

Project 04-I58:

Effects of cyclic compression on intervertebral disc cell metabolism

James C Iatridis, University of Vermont (USA)



Project 04-K3:

Unravelling endogenous mechanisms of bone regeneration through quantification of the interplay between bone cells and their environment

Melissa Knothe Tate, Cleveland Clinic Foundation (USA)