



# 5th World Congress of Biomechanics



## Scientific Organizing Committee

### 1. Bone Mechanics – Joint ESB

#### Track

#### Track Coordinators

Rik Huiskes

Reiner Gradinger

#### Session Organizers

Peter Niederer

Audrey Berthier

Lutz Claes

Georges van der Perre

Keita Ito

Marie Christine Hobatho

Harri Weinans

Ralph Mueller

Bert van Rietbergen

### 2 Musculoskeletal Mechanics-

#### Joint ISB Track

#### Track Coordinators

Walter Herzog

Kozaburo Hayashi

#### Session Organizers

Van C. Mow

Robert Sah

Lori Setton

Keita Ito

W. I. Schoellhorn

Keith Davids

Alberto E. Minetti

Frank Baaijens

Jack Winter

Dilson Rassier

Jack Winter

Ton van den Bogert

Maarten Bobbert

Savio L.Y. Woo

Richard E. Debski, Ph.D.

Steve Abramowich

V. Baltzopoulos

T. Fukunaga

### 3. Musculoskeletal systems and Performance-Joint ISB/ESB

#### Track

#### Track Coordinators

Mark Grabiner

Günther Rau

Georg Duda

#### Session Organizers

Marco Viceconti

Georg Duda

John O'Connor

Thomas P. Andriacchi

Fabio Catani

Franz van der Helm

C. Disselhorst-Klug

James Ashton Miller

Mark Grabiner

Jaap van Dieën

Hermi Hermens

Tom Oxland

V. J. Goel

Dieter Rosenbaum

Fabio Catani

M. Grazia Benedetti

Jeffrey Hausdorff

Art Kuo

### 4. Implants for Trauma and Orthopedics-Joint ESB Track

#### Track Coordinators

Erwin Steinhauser

Cheng Kung Cheng

#### Session Organizers

Michael Morlock

Luca Cristofolini





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Erwin Steinhauser  
Mark Taylor  
John Howard Newman  
Po-Quang Chen  
Hans-Joachim Wilke  
Erich Schneider,  
Roger Scholz  
Lutz Claes  
Jimmy Cunningham  
Georg Bergmann  
Antonius Rohlmann  
John Fisher  
Zhongmin Jin

### **5. Occupational and Impact Injury Biomechanics**

#### **Track Coordinators**

Heiner Bubb  
Yoganandan, Narayan  
Brian Stemper

#### **Session Organizers**

Frank A. Pintar  
Mark Scarboro  
Beth Winkelstein  
Dale Bass  
Barclay Morrison  
Susan Margulies  
Karol Miller  
David Meaney  
Warren Hardy  
Ali Elhagediab  
Jeff Crandall  
Cynthia Bir  
Dr Ian Horsfall  
King H. Yang  
Jess Snedeker  
M. Xuguang Wang  
Kim Burton  
Anne Manion  
Albert King  
Hans-Joachim Wilke  
Mary Rodgers

Arthur Mak  
Giseppe Androni  
H.P. Wölfel

### **6. Sport Biomechanics-Joint ISB Track**

#### **Track Coordinators:**

Andreas Imhoff  
Benno Nigg  
Erich Müller

#### **Session Organizers**

Peter Brüggemann  
Joe Hamil  
Steven Lorenz  
Albert Gollhofer  
Avela, Janne  
Hermann Anetzberger  
T. Nau  
Hubert Hörterer  
Roland Biedert  
Jason Cheung  
Darren Sefanshyn  
Joe Hamil  
Fred Yeadon  
Hermann Schwameder  
Th. Jöllenbeck  
Erich Müller  
Veit Senner  
Darren Stefanyshyn  
W. Nachbauer  
Wolfgang Schöllhorn  
Natalai Balague  
Mario Lamontagne  
Tom Anddriacchi  
Stefan Grau  
Peter Brüggermann  
Tzyy-Yuang Shiang  
Jochen Mester  
James Wakeling  
Peter Spitzenpfeil  
Tetsuo Fukunaga  
Vinzenc von Tscherner





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### 7. Dental biomechanics

#### Track Coordinators

Arturo Natali

Jos Vander Sloten

#### Session Organizers

Jos Vander

John Brunski

Christoph Bourauel

Christopher Provatidis

Michel Dalstra

Roberto Contro

John Middleton

Jan Harm Koolstra

Martin Geiger

### 8. Computer-Assisted Surgery

#### Track Coordinators

Rainer Burgkart

Lutz Nolte

Klaus Radermacher

#### Session Organizers

Stephen Ferguson

Florian Gerhard

Gerd Hirzinger

Robert Riener

Charles Taylor

Hans-Jakob Steiger

Gabor Szekely

### 9. Tissue Engineering

#### Track Coordinators

Axel Stemberger

Ralf Huss

Takashi Ushida

#### Session Organizers

Christian Oddou

Alicia el-Haj

Alan Grodzinsky

Dan Bader

James Goh

Melody Swartz

Takashi Ushida

Patrick Prendergast

### 10. Cellular and Molecular Mechanics

#### Track Coordinators

Roger Kamm

Hiroshi Wada

#### Session Organizers

Kazuo Tanishita

Ed Guo

Ben Fabry

Dr. Crocker

Dr. Gallet

Matt Lang

Dan Hammer

Dennis E. Discher

Andreas Bausch

Mohammad Kaazempur-Mofrad

Brian Helmke

Fred Macintosh

Denis Wirtz

Masaaki Sato

Cheng Zhu

Wendy Thomas

### 11. Artificial Organs

#### Track Coordinators

Michel Jaffrin

Heinrich Schima

#### Session Organizers

Jorg Vienken

Setsuo Takatani

Klaus Affeld

Cecile Legallais

Igor Sauer

Lyle Mockros

Joseph Zwischenberger

Ulrich Steinseifer

Mark Gartner

Danny Bluestein

Shmuel Einav





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### 12. Biomaterials

#### Track Coordinators

Yannis Misirlis  
Birgit Glasmacher

#### Session Organizers

Hasan Uludag  
Joerg Vienken  
Elizabeth Tanner  
Damien Lacroix

### 13. Respiratory Mechanics

#### Track Coordinators:

Robert C Schroter  
David Elad

#### Session Organizers

Merryn Tawhai  
Oliver E. Jensen  
Don Gaver  
Bela Suki  
Daniel Navajas  
Daniel Isabey  
Ning Wang  
Jason Bates  
Zoltan Hantos  
Dennis Doorly  
Tilman Keck  
Christopher M. Waters  
Shigeo Wada

### 14. Cardiovascular Mechanics

#### Track Coordinators

Don Giddens  
Hermann Berger

#### Session Organizers

Tim McGloughlin  
Ender A. Finol  
Jos Spaan  
Motoaki Sugawara  
John Lever  
Nikos Stergiopoulos  
Peter Hunter  
Nico Westerhof

Charles A. Taylor  
Francesco Migliavacca  
David Steinmann  
Karl Perktold  
Shmuel Einav  
Fumihiko Kajiya  
Kristof Kaluzynski  
Kenkichi Ohba  
Dieter Liepsch  
Kristen, Billiar  
Ajit Yoganathan  
Fr. Umezu  
Hans-Henning Eckstein  
Mort Friedman  
K. Hayashi  
Alexander Rachev  
Gerhard Holzapfel  
Takeo Matsumoto

### 15. Microcirculation

#### Track Coordinators

Dominique Barthès-Biesel  
Geert W. Schmid-Schönbein

#### Session Organizers

J. Weiss  
Axel Pries  
Nadia Antonova  
Qiang Zhu  
S. Weinbaum  
Timothy Secomb  
Edward Damiano  
Melody Schwartz  
Brian Helmke

### 16. Reproductive Biomechanics

#### Track Coordinators

David Elad  
Roger C Young

#### Session Organizers

Osnat Eytan  
Ludwig Wildt  
Christiane Pfarrer  
Martin JC van Gemert





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Anthony Shmygol  
Simona Socrate  
Bradley B. Keller  
C. Wayne Brodland  
Amit Gefen  
Ofar Barnea  
Lisa Fauci

### 17. Biomechanics in Nature

#### Track Coordinators

Tim Pedley  
Johan van Leeuwen

#### Session Organizers

Julian Vincent  
Cam Tropea  
Roland Ennos  
Deane Harder  
Charlie Ellington  
Andy Biewener  
Alan Wilson

### 18. Trends in Cranial and Spinal Biomechanics

#### Track Coordinators

Hiroshi Ujiie  
Hans-Jakob Steiger

#### Session Organizers

B. Lieber  
David Kallmes  
Z. Czosnyka  
C. Bertram  
N. Ward  
K.-J. Langen  
H. Iseki  
C. Nimsy  
Robert Riener  
Thierry Keller  
Richard Hall  
Mineo Kawasaki  
Hubert Gramling

### 19. Biotransport

#### Track Coordinators

John Tarbell  
John Bischof  
**Session Organizer**  
Norman Harris  
David Rumschitzki  
Peter Weinberg  
George Truskey  
Yoed Rabin  
Al Aksan  
Oana Craciunescu  
Hiroshi Ishiguro  
Birgit Glasmacher

### 20. Biomechanics of Organs

#### Track Coordinators

Mark Johnson  
Rich Hart  
**Session Organizers**  
J. Crawford Downs  
Darryl Overby  
Jeffrey Ruberti  
Tony Gummer  
David A. Vorp  
Margot Damaser  
Michael Sacks  
Jiro Nagatomi  
Frank Baaijen  
Cheng Dong

#### Thread 1: Computational Methods in Biomechanics and Mechanobiology

##### Thread organizers:

Gerhard A. Holzapfel, gh@biomech.tu-  
graz.ac.at

Prof. Tim David

##### Session Organizers

Dimitrije Stamenovic  
Krishnan B. Chandran  
David A. Vorp





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Danny Bluestein  
Jim Antaki  
Tim McGloughlin  
James E. Moore  
Gabriele Dubini  
Joaquim Peiro  
Pascal Verdonck  
Richard E. Debski  
Jeffrey A. Weiss  
Jörg Schröder  
Manuel Doblare  
Jan Herman Kuiper  
Glen L. Niebur  
Phillippe K. Zysset  
Jacques M. Huyghe  
Aboufazel Shirazi-Adl  
Adamantios Arampatzis  
Gert-Peter Brüggemann  
Hans Gregersen  
Panos Diamantopoulos  
Timothy David  
Karl Grosh  
Edward Givelberg

### **Thread 2: Flow-Structure Interactions**

#### **Thread organizers:**

Chris Bertram  
Ross Ethier  
Charlie Ellington

#### **Session Organizers**

Dalin Tang  
Ajit Yoganathan  
Jay Humphrey

Danny Bluestein  
Pascal Verdonck  
Matthias Heil  
N. A. Hill  
Oliver Jensen

### **Thread 3: Biomechanics at Micro- and Nanoscale Levels**

#### **Thread organizer**

Hiroshi Wada

#### **Session Organizers**

Kazuo Tanishita  
Masaaki Sato  
Takashi Ushida  
Takami Yamaguchi

### **Thread 4: Imaging**

#### **Thread organizers**

Ralph Müller  
Peter Augat

#### **Session Organizers**

Peter Niederer  
Pascal Laugier  
Frances Sheehan  
Christof Hurschler  
Gadi Pelled  
Melissa Knothe Tate  
Krzysztof Kaluzynski  
Richard Frackowiak

### **21.1 Electro-Impedance**

Tadeusz Palko