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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Room</th>
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<tbody>
<tr>
<td>10:00–18.00</td>
<td>Registration</td>
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<tr>
<td>10:00–11:00</td>
<td>Room: Kokand 7.0 Welcome Cocktail</td>
<td>Samarkan 2</td>
</tr>
<tr>
<td>11:00–12:00</td>
<td>Room: Samarkan Honorary Lectures</td>
<td>Samarkan 1</td>
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<tr>
<td>12:00–12:50</td>
<td>Room: Almaty 1 Meniscus &amp; Alignment, Complex Issues</td>
<td>Samarkan 2</td>
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<tr>
<td>12:50–13:00</td>
<td>Meniscus &amp; Alignment, Complex Issues</td>
<td>Samarkan 1</td>
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<tr>
<td>13:00–14:00</td>
<td>Prevention of the Knee</td>
<td>Samarkan 1</td>
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<tr>
<td>14:15–15:15</td>
<td>Complex Issues Alignment, Meniscus &amp; Cartilage</td>
<td>Almaty 1</td>
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<tr>
<td>15:15–16:15</td>
<td>Break/Poster Viewing/Exhibition</td>
<td>Almaty 1</td>
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<tr>
<td>16:15–17:00</td>
<td>5.0 Plenary Session</td>
<td>Samarkan 1</td>
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<tr>
<td>17:00–18:00</td>
<td>Opening Ceremony &amp; Awards Session</td>
<td>Samarkan 1</td>
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<tr>
<td>18:00–19:30</td>
<td>7.0 Welcome Cocktail</td>
<td>Kokand</td>
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**Tuesday, April 10, 2018**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Room</th>
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<tbody>
<tr>
<td>07:30–08.30</td>
<td>Room: Almaty 2 Successful Publishing, Grant Writing &amp; Programme Building</td>
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</tr>
<tr>
<td>08:30–09.30</td>
<td>Room: Almaty 2 Stem Cells &amp; PRP in Cartilage Repair</td>
<td>Samarkan 1</td>
</tr>
<tr>
<td>09:45–10:45</td>
<td>Room: Almaty 2 Clinical Outcomes of Routine/Universal Surgical Techniques</td>
<td>Samarkan 1</td>
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<tr>
<td>10:45–11:15</td>
<td>Room: Almaty 1 Coffee Break/Intermission/Exhibition</td>
<td>Samarkan 1</td>
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<tr>
<td>12:30–13:00</td>
<td>Room: Almaty 1 Industry Satellite Symposia</td>
<td>Samarkan 1</td>
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<tr>
<td>13:30–15:00</td>
<td>Room: Almaty 1 Free Paper Sessions</td>
<td>Samarkan 1</td>
</tr>
<tr>
<td>15:15–16:15</td>
<td>Room: Almaty 1 All About Synovial Environment</td>
<td>Samarkan 1</td>
</tr>
<tr>
<td>16:15–17:00</td>
<td>Room: Almaty 1 Coffee Break/Intermission/Exhibition</td>
<td>Samarkan 1</td>
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<tr>
<td>17:00–18:30</td>
<td>Room: Almaty 2 Free Paper Sessions</td>
<td>Almaty 1</td>
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<tr>
<td>19:30–23.00</td>
<td>Room: Almaty 1 President’s Dinner at Hotel Lisboa</td>
<td>Almaty 1</td>
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**Wednesday, April 11, 2018**

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<tr>
<th>Time</th>
<th>Session</th>
<th>Room</th>
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<tbody>
<tr>
<td>07:30–08.30</td>
<td>Room: Almaty 2 General Assembly</td>
<td>Samarkan 1</td>
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<tr>
<td>08:30–09.30</td>
<td>Room: Almaty 2 Cartilage Repair in Hip &amp; Ankle</td>
<td>Almaty 1</td>
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<tr>
<td>09:45–10:45</td>
<td>Room: Almaty 2 Clinical Outcomes of Routine Cartilage</td>
<td>Almaty 1</td>
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<tr>
<td>10:45–11:15</td>
<td>Room: Almaty 1 Coffee Break/Intermission/Exhibition</td>
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<td>12:30–13:00</td>
<td>Room: Almaty 1 Industry Satellite Symposia</td>
<td>Almaty 1</td>
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<tr>
<td>13:30–15:00</td>
<td>Room: Almaty 2 Free Paper Sessions</td>
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**Thursday, April 12, 2018**

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Room</th>
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<tbody>
<tr>
<td>07:30–08.30</td>
<td>Room: Almaty 2 General Assembly</td>
<td>Samarkan 1</td>
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<tr>
<td>08:30–09.30</td>
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<td>Almaty 1</td>
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<td>10:45–11:15</td>
<td>Room: Almaty 1 Coffee Break/Intermission/Exhibition</td>
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<td>12:30–13:00</td>
<td>Room: Almaty 1 Industry Satellite Symposia</td>
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<tr>
<td>13:30–15:00</td>
<td>Room: Almaty 2 Free Paper Sessions</td>
<td>Almaty 1</td>
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</tbody>
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**Programme Overview**

**Wednesday, April 11, 2018**

1. **Room: Almaty 1**
   - 09:00–10:00: **ICRS Meets China – Part II**
   - 10:45–11:15: **Coffee Break/Intermission/Exhibition**

2. **Room: Almaty 2**
   - 09:00–10:00: **ICRS Meets China – Part I**
   - 10:45–11:15: **Coffee Break/Intermission/Exhibition**

3. **Room: Almaty 3**
   - 09:00–10:00: **ICRS Meets China – Part III**
   - 10:45–11:15: **Coffee Break/Intermission/Exhibition**

**Thursday, April 12, 2018**

- 08:00–09:00: **ICRS Meets China – Part III**
- 09:00–10:00: **ICRS Meets China – Part IV**
- 10:00–10:30: **Coffee Break/Intermission/Exhibition**
- 10:30–12:00: **Free Paper Sessions**
  - 26.1 **Cartilage Regeneration**
  - 26.2 **Proteomics/Biomarkers/Epigenetics**
  - 26.3 **Scaffold & Others**
  - 26.4 **PRP & Bone Marrow**
- 12:00–13:00: **ICRS Meets China – Part IV**
- 12:00–13:00: **Coffee Break/Intermission/Exhibition**
- 12:30–13:00: **ICRS Meets China – Part IV**
- 13:00–14:00: **ICRS Meets China – Part IV**

**Friday, April 13, 2018**

- 08:00–09:00: **ICRS Meets China – Part IV**
- 09:00–10:00: **ICRS Meets China – Part IV**
- 10:00–10:30: **Coffee Break/Intermission/Exhibition**
- 10:30–12:00: **Free Paper Sessions**
  - 26.1 **Cartilage Regeneration**
  - 26.2 **Proteomics/Biomarkers/Epigenetics**
  - 26.3 **Scaffold & Others**
  - 26.4 **PRP & Bone Marrow**
- 12:00–13:00: **ICRS Meets China – Part IV**
- 12:00–13:00: **Coffee Break/Intermission/Exhibition**
- 12:30–13:00: **ICRS Meets China – Part IV**
- 13:00–14:00: **ICRS Meets China – Part IV**

**Saturday, April 14, 2018**

- 08:00–09:00: **ICRS Meets China – Part IV**
- 09:00–10:00: **ICRS Meets China – Part IV**
- 10:00–10:30: **Coffee Break/Intermission/Exhibition**
- 10:30–12:00: **Free Paper Sessions**
  - 26.1 **Cartilage Regeneration**
  - 26.2 **Proteomics/Biomarkers/Epigenetics**
  - 26.3 **Scaffold & Others**
  - 26.4 **PRP & Bone Marrow**
- 12:00–13:00: **ICRS Meets China – Part IV**
- 12:00–13:00: **Coffee Break/Intermission/Exhibition**
- 12:30–13:00: **ICRS Meets China – Part IV**
- 13:00–14:00: **ICRS Meets China – Part IV**

**Sunday, April 15, 2018**

- 08:00–09:00: **ICRS Meets China – Part IV**
- 09:00–10:00: **ICRS Meets China – Part IV**
- 10:00–10:30: **Coffee Break/Intermission/Exhibition**
- 10:30–12:00: **Free Paper Sessions**
  - 26.1 **Cartilage Regeneration**
  - 26.2 **Proteomics/Biomarkers/Epigenetics**
  - 26.3 **Scaffold & Others**
  - 26.4 **PRP & Bone Marrow**
- 12:00–13:00: **ICRS Meets China – Part IV**
- 12:00–13:00: **Coffee Break/Intermission/Exhibition**
- 12:30–13:00: **ICRS Meets China – Part IV**
- 13:00–14:00: **ICRS Meets China – Part IV**
Prof Dr James Richardson †
(1955–2018)

Our friend and colleague, Professor James Richardson, died unexpectedly in February, whilst on a well-deserved family holiday. James was a unique personality, with an indomitable spirit of optimism and fun and amazing energy for innovation, always pushing the boundaries to get the very best possible outcome for his patients. He was an inspiration to clinicians and scientists alike, all around the world.

For 20 years he has been flying the flag for ACI, with drive and tenacity, running clinical trials and heading what is currently the only manufacturing unit for chondrocytes in the UK. Undoubtedly, his personal commitment to building an evidence-base for ACI played a huge part in the decision by National Institute for Health and Care Excellence (NICE) finally to recommend the use of ACI for cartilage repair in the UK, in October 2017. This will surely be his most lasting legacy to orthopaedics. His humanity and dignity made it impossible to avoid admiring and liking him in equal measure. He will be sorely missed by all who knew him.
**Congress Organizing Office**
Cartilage Executive Office GmbH
Spitalstrasse 190 – House 3
CH-8623 Wetzikon ZH, Switzerland
Phone: +41 44 503 73 70
sseiler@cartilage.org
www.cartilage.org

**Congress Venue**
Sheraton Grand Macao Hotel, Cotai Central
Estrada do Isto, s/n, Cotai,
Macao SAR, P.R. CHINA
Reservation.Macao@sheraton.com
www.sheratongrandmacao.com

**Accommodation, Transfers & Tours**
DOC DMC MACAU & HONG KONG
Alameda Dr. Carlos d’Assumpção 258
Praça Kin Heng Long, 4/Q, Macau
Sam Li | Operations Manager
Office Macau: +853 2872 3510
sli@doc-dmc-macau.com

**Office & Registration Desks**
The ICRS Congress Secretariat and Registration Desks are located at Level 5 of the Sheraton Convention Centre.

**Opening Hours:**
Sunday  Apr 08  16.00–18.30
Monday  Apr 09  09.00–18.30
Tuesday Apr 10  07.15–18.30
Wednesday Apr 11  07.15–18.30
Thursday Apr 12  07.45–14.00

**AV Centre/Speaker Ready Room**
The Speaker Ready Room is located on Floor 5 of the Sheraton Convention Centre.

**Opening Hours:**
Sunday  Apr 08  16.00–18.30
Monday  Apr 09  08.00–18.30
Tuesday Apr 10  07.00–18.30
Wednesday Apr 11  07.00–18.30
Thursday Apr 12  07.30–14.00

**Past World Congresses**
1997  1st World Congress, Freiburg, Switzerland
      Roland Jakob
1998  2nd World Congress, Boston, USA
      Alan Grodzinsky
2000  3rd World Congress, Gothenburg, Sweden
      Lars Peterson
2002  4th World Congress, Toronto, Canada
      Shawn O’Driscoll
2004  5th World Congress, Gent, Belgium
      Rene Verdonk
2006  6th World Congress, San Diego, USA
      Bert Mandelbaum, Bill Bugbee
2007  7th World Congress, Warsaw, Poland
      Jaroslaw Deszczynski, Jacek Kruczynski; Konrad Slynarski
2009  8th World Congress, Miami, USA
      Jack Farr, Tom Minas
2010  9th World Congress, Sitges – Barcelona, Spain
      Ramon Cugat, Pedro Guillen
2012  10th World Congress, Montreal, Canada
      Michael Buschmann, Patrick Lavigne
2013  11th World Congress, Izmir, Turkey
      Mehmet Binnet, Didem Kocazi
2015  12th World Congress, Chicago, USA
      Brian Cole, Susan Chubinskaya
2016  13th World Congress, Sorrento/Italy
      Stefano Della Villa, Donato Rosa

**Past Presidents**
1997 – 1998  Roland Jakob, Switzerland
1999 – 2000  Alan Grodzinsky, USA
2000 – 2001  Lars Peterson, Sweden
2002 – 2003  Shawn O’Driscoll, USA
2004 – 2005  Ernst Hunziker, Switzerland
2006 – 2007  Mats Brittberg, Sweden
2008 – 2009  Bert Mandelbaum, USA
2009 – 2010  Lisa Fortier, USA
2011 – 2012  Daniël Saris, Netherlands
2012 – 2013  Anthony Hollander, UK
2014 – 2015  Chris Erggelet, Switzerland
2015 – 2016  Norimasa Nakamura, Japan
2016 – 2018  Kenneth Zaslav, USA, (current)
**Honorary Fellows**

2007 Alan Grodzinski, US  
2007 Roland Jakob, CH  
2007 Lars Peterson, SE  
2009 Mats Brittberg, SE  
2012 Tom Minas, US  
2012 Stefan Nehrer, AT  
2015 Susan Chubinskaya, SE  
2016 Bert Mandelbaum, US  
2016 Rita Kandel, CA  
2018 Lisa Fortier, US  
2018 Alan Nixon, US  
2018 Wayne McIlwraith, US

**ICRS Award for Excellence in Cartilage Research**

2004 Ronald Dorotka et al, AT  
2006 Mark Randolph et al, UK  
2007 Gerjo Van Osch et al, NL  
2009 Avner Yayon et al, IS  
2010 Attila Aszody et al, DE  
2012 Xiaofeng Cui et al, US  
2013 S. Zhu et al, CN  
2015 W. Wei et al, NL  
2016 K. Sivasubramaniyan et al, NL  
2018 Yishan Chen et al, CN

**ICRS Lifetime Award**

2004 Lars Peterson, SE  
2006 Allan Gross, CA  
2007 Arnold Caplan, US  
2009 Richard Steadman, US  
2010 Mats Brittberg, SE  
2012 Joseph Buckwalter, US  
2013 A. Robin Poole, CA  
2015 George Bentley, UK  
2016 Linda Sandell, US  
2018 Roland Jakob, CH

**Best Rated Abstracts**

2007 K. Nakagawa et al, JP  
2007 C. Moser et al, DE  
2009 J.F. Harrington et al, US  
2010 S. D’Arcy et al, IR  
2012 G. Van Den Akker, NL  
2013 N. Nakamura et al, JP  
2015 S. Grassel et al, DE  
2016 H. Fujie et al, JP  
2018 G. Hu et al, CN

**ICRS Executive Board**

President: Ken Zaslav, Richmond, USA  
1st Vice President: Alberto Gobbi, Milano, IT  
2nd Vice President: Tom Minas, Chestnut Hill, USA  
Secretary General: Elizaveta Kon, Milan, IT  
Treasurer: Daniel Grande, Manhasset, USA  
Past President: Norimasa Nakamura, Osaka, JP

**ICRS General Board**

Ao Yingfang, Beijing, CN  
Biant Leela, Edinburgh, GB  
Brittberg Mats, Göteborg, SE  
Chubinskaya Susan, Chicago, USA  
Cole Brian, Chicago, USA  
Fortier Lisa, Ithaca, USA  
Getgood Alan, Ontario, USA  
Gobbi Alberto, Milano, IT  
Gomoll Andreas, New York, USA  
Grande Daniel, Manhasset, USA  
Karperien Marcel, Twente, NL  
Kon Elizaveta, Milano, IT  
Lattermann Christian, Lexington, USA  
Malda Jos, Utrecht, NL  
Minas Tom, Chestnut Hill, USA  
Nakamura Nori, Osaka, JP  
Nehrer Stefan, Krems, AT  
Papacostas Emmanuel, Thessaloniki, GR  
Spalding Tim, Coventry, UK  
Zaslav Ken, Richmond, USA

**ICRS 2018 Congress Chair**

Ao Yingfang, Beijing, China

**Local Congress Secretariat**

Shao Zhenxing, Beijing, China  
Jiang Yanfang, Beijing, China

**Local Organizing Committee**

Ao Yingfang, Beijing, China (Chair)  
Bai Xizhuang, Shenyang, China  
Chaeng Lek-Hang, Macau, China  
Chen Liaobin, Wuhan, China  
Guo Quanyi, Beijing, China  
Jiang Qing, Nanjing, China  
Ouyang Hongwei, Hangzhou, China  
Wang Daping, Shenzhen, China  
Wang You, Shanghai, China  
Wei Xiaochun, Taiyuan, China  
Zhou Chunyan, Beijing, China

**Scientific Programme Committee**

Chubinskaya Susan, Chicago, USA (Co-Chair)  
Lattermann Christian, Lexington, USA (Co-Chair)  
Bugbee Bill, La Jolla, USA  
Madry Henning, Hamburg, DE  
Farshid Guilak, St. Louis, USA  
Sandell Linda, St. Louis, USA  
Vonk Lucienne, Utrecht, NL  
Saris Daniel, Utrecht, NL  
Fu Freddie, Pittsburgh, USA
The Speaker Ready Room is located on Floor 5 of the Sheraton Convention Centre in front of the Registration Area.

Instructions for Presenters: The official congress language is English, (exception ICRS Meets China Sessions). If English is not your native language, we recommend that you have your presentation proof-read by a native speaker if possible. Presentations must be provided on a USB-Memory Stick to be uploaded on our central server. It is mandatory to deliver presentations to the Speaker Ready Room at least 3 hours prior to the respective session. In case you have an early morning session, presentations must be uploaded the day before. The computers in the server room are equipped with Microsoft Windows 7 and Microsoft Office 2013. If you use Macintosh, please convert your Keypoint presentation or your PowerPoint Presentation for MAC into PowerPoint for PC Windows format.

The following video formats are recommended: .mp4, .mpeg1, .mpeg2, .wmv or .avi. Please use only common and widespread encodings (codecs), preferably in their newest version. If you have any doubt, please contact the Speaker Ready Room 4 hours before your presentation. Our staff will have enough time to verify and adapt your presentation if needed. Do not use special fonts which are not part of the standard PowerPoint package, as this will cause problems while uploading your file. Such presentations cannot be edited in the Speaker Centre. The requested presentation format for your production is 16:9.

Important: It will not be possible to use your own laptop or your USB-stick for your presentation in the session rooms. If a presenter has included videos into the PPT presentations, she/he should make sure that the movies run on the most commonly used video software with Windows compatible codec.

File names of the presentation file should include the presenter’s name and the presentation number. To avoid any compatibility problems, please do not use special characters (e.g. «, Ø, ŋ, ®, ý, }, { etc. or any Chinese’s font ) to name your presentation.

The presentation material remains the property of the speakers and will only be re-used by ICRS with the speaker’s permission. Without formal permission, your presentation data will be definitely deleted after the congress.

Financial Disclosure: All Presenters must include their Financial Disclosure Statement. We request all presenters to cooperate in this by declaring any commercial role or conflicts of interests in the related research on the first slide of their PP Presentations or on the posters for poster presentations.

Speaking Time Free Papers: 6 Minutes + 3 Discussion
It is essential that all podium presenters respect the given speaking time in order not to delay the entire congress schedule. Session Moderators will interrupt presentations in case of exceeding the speaking time of 6 Minutes.

Submit Your Publication to our Journal «Cartilage»
We encourage authors to submit full manuscripts to our peer reviewed journal “Cartilage” ISSN 1947-6043 (now indexed at PUBMED), which publishes full-length original manuscripts on all types of cartilage including articular, nasal, auricular, tracheal/bronchial, and intervertebral disc fibrocartilage. Manuscripts on clinical and laboratory research are welcome. Instructions to authors for submissions are available at http://cart.sagepub.com

Awards & Honours ICRS 2018 (Opening Ceremony)
Sunday, April 09 from 17.15 – 18.00 in the Main Auditorium

The following scientific awards will be presented:
• 1 x Overall Best Rated Abstract
• 2 x Poster Award Magna Cum Laude
• 2 x Poster Award Cum Laude
• 2 x Poster Certificate of Merit
• 1 x ICRS Lifetime Award
• 1 x Young Investigator’s Award (US$ 1000.00)
• 1 x ON Orthoregeneration Award (US$ 1000.00)
• 1 x ICRS Excellence in Cartilage Research (US$ 3000)

Badges, Bags – Scan & Go
Participants are required print out their official congress registration confirmation / barcode or have it ready on a mobile device; it is needed to print the congress badge at the “Scan & Go Station”. Upon arrival participants should scan their barcode at the Scan & Go station and a badge will be printed automatically. The personalized badge is not transferable and it is the admission to the congress. Delegates can than check-in at the appropriate registration desk to pick up their extra vouchers and the congress bags.

Certificate of Attendance
Please use one of the dedicated workstations to print out your certificate of attendance. You can also print your certificate at home after the congress by accessing your ICRS online account. This year you are requested to fill in a short meeting survey, required by UEMS, before you can print out your certificate of attendance.

CME Credits (Maximum of 20 Credits)
The ICRS 2018 World Congress is accredited by the European Accreditation Council for Continuing Medical Education (EACCME) to provide the following CME activity for medical specialists. The EACCME is an institution of the European Union of Medical Specialists (UEMS), www.uems.net. The ICRS 2018 - 14th World Congress of the International Cartilage Repair Society is designated for a maximum of, or up to 20 European CME credits (ECMEC). Each medical specialist should claim only those credits that he/she actually spent in the educational activity. The EACCME credit system is based on 1 ECMEC per hour with a maximum of 3 ECMECs for half a day and 6 ECMECs for a full-day event.

Through an agreement between the European Union of Medical Specialists and the American Medical Association, physicians may convert EACCME credits to an equivalent number of AMA PRA Category 1 Credits. Information on the process to convert EACCME credit to AMA credit can be found at www.ama-assn.org/go/internationalcme.
**CME Credit Application**

- **How can I obtain CMEs for ICRS 2018?**
  ICRS uses a digital session evaluation system. Visit sessions and evaluate them immediately afterwards either on one of the terminals or via your smart phone, tablet or laptop through the ICRS 2018 Congress App.

- **When is the deadline for completing evaluations?**
  Make sure to submit your evaluations immediately after each session during the congress! Online evaluation of the sessions is possible until April 25, 2018. No evaluation is possible and no CME credits can be obtained after this date for sessions which were not evaluated on time.

**Credit Cards/Cash Machines**

All major credit cards are widely accepted. Bank cash machines (ATM) can be found easily and debit cards are widely used. There are also ATM machines in the lobby of the Sheraton Hotel.

**Currency**

The currency in Macau is the MOP. 1 € Euro = 10 MOP

(Date of printing, February 2018)

**Disclaimer**

ICRS and the congress organizer cannot accept any liability for the acts of any suppliers to this meeting nor of the safety of any attendee while in transit to or from this event. Participants are strongly advised to carry proper travel and health insurance as the ICRS cannot accept liability for any accidents or injuries that may occur. Information in this programme is subject to change without prior notice. For updated information, please visit frequently our congress website at www.cartilage.org

**Electricity, Weights and Measures**

- Electricity: 220 volts 50 hz
- Weights: Kilo/Gramm system
- Measures: Metric system

**Health Care**

Special Vaccinations are not required for entry into Macau but an individual travel & health insurance is highly recommended because health insurance plans often do not extend full coverage for medical services received outside the country of residence.

**Industry Exhibition**

A technical industry exhibition with will take place at the Sheraton Convention Centre. It will be open every day throughout the meeting and exhibitors from around the world will present a wide range of orthopaedic- and cartilage repair related products. Participants are encouraged to take advantage of this unique opportunity to be updated with the most recent advances and latest news from our industry partners.

**Intermissions**

During intermissions, coffee, tea and refreshments will be served in the exhibition area as a courtesy from the ICRS.

**Internet/WLAN**

As a special courtesy, ICRS will provide free WLAN Hot Spots and a public Internet corner to all attendees and exhibitors.

**Language**

The official congress language is English. Simultaneous translation from English into Chinese will be provided in the plenary session room.

**Members’ General Assembly (for ICRS Members only)**

Wednesday, April 11 from 17.30–18.30 at

All ICRS members are expected to attend the ICRS General Member’s Assembly. Retired Members and Corporate Members have no right to vote, but are most welcome to attend the GA.

**Meals, Snacks & Refreshments**

Several restaurants & bars in the hotel complex will be at your service subject to their opening hours. Delegates may purchase meals and drinks against payment. No official lunch will be provided by the congress organizer. Industry Satellite Symposia organizers will offer lunch boxes during their symposia. During intermissions, coffee, tea and refreshments are served in the exhibition area as a courtesy by the ICRS.

**Opening Ceremony & Awards Session**

Monday April 09 from 16.15 – 17.00 in the Main Auditorium

**Phones**

Please turn-off or put your mobile phone to the “silent-modus” during all scientific sessions.

**Photos/Recording**

Taking photos or video/ audio recording during the scientific presentations or from the poster area is strictly prohibited. Note that a vast majority of the speakers’ presentations, posters and all officially recorded sessions will become available online after the congress at the ICRS website in the members’ area. Therefore, there is no need to take pictures during the sessions or from poster exhibits.

**Scientific Poster Exhibits**

Monday, April 09 from 15:15–16:15
Tuesday, April 10 from 10:45–12:30

Computer stations will be available for viewing about 300 electronic scientific poster exhibits. The electronic system offers greater flexibility and provides enhanced opportunities for communication. The ability to use moving images, to link to related websites, to search quickly the whole of the scientific exhibition for specific topics in seconds, to e-mail entire exhibits to one’s-self or to a colleague and to access the exhibit from any internet-linked computer in the world are amongst its many advantages besides the post congress availability of the presentations during many years.
In addition to the full electronic poster session, available through the dedicated computer stations, the authors who asked to bring as well traditional paper posters by reserving a poster wall in advance. Approximately 150 posters are located in the poster area.

Abstracts of all posters can be found on our website, on the Congress App and on the electronic poster viewing system onsite. All congress participants are strongly encouraged to join the poster session. To facilitate discussions and networking, all poster presenters are required to stay near their poster boards during this session. Authors should encourage a lively discussion with interested participants. The presenters should introduce themselves as poster presenters and be well prepared to answer questions and initiate discussions.

Security / Badge Control
The safety of all congress attendees is of utmost importance to our society. The ICRS and the Sheraton Macau have taken security precautions to ensure the maximum possible safety for all participants. Identity check controls may occur at any time by the security staff. Congress badges are personalized, not transferable and guarantee individual access to different section of the event. For organizational and security reasons, badges have to be worn all the time at the congress venue.

Smoking
The ICRS World Congress is a non-smoking congress. Smoking is not permitted at the Sheraton Hotel and its Conference Centre except in designated smoking areas.

Social Networking Events
Welcome Reception – Monday April 09 from 18.00 – 19.30
Exhibit Area – The Welcome Reception is offered by the ICRS

Presidents Dinner – Monday April 10 from 19.30 – midnight
Hotel Lisboa Macau – Upon invitation only – Departure 19.15

Chinese Night (Farewell Party) – April 11 from 19.30 – midnight
Tiki Pool Area; Level 8 Sheraton Hotel – Ticket price 80.00

Tipping
While tipping in China Mainland is not a common practice in most sectors of life, tipping in Hong Kong and Macau is very common and important, just like many parts of the world.

For hotel porters, HK$10 for per piece of luggage carried for you is appropriate. 2% of the daily room charge will suffice for the room attendant. For waiters and waitresses, HK$ 5 – 10 at inexpensive restaurants, and 10 – 15% of the bill at fine restaurants, where deserved. For taxi drivers, please round the fare up to the next convenient bill size, or you can tip a few extra dollars, if the driver helps with heavy luggages or takes special efforts to get you to your destination on time.

Thank you for attending the ICRS 2018 World Congress. We wish you a pleasant and uneventful trip back home!
10:00–11:00  Plenary Session  Room: Samarkan

1.1 ICRS Meets China – Part I
Moderators:  Qing Jiang/CN, Liaobin Chen/CN

1.1.1 Opening Remarks & Welcome
Yingfang Ao, Beijing/CN

1.1.2 Post-Traumatic OA After ACL Reconstruction
Freddie Fu, Pittsburgh/US

1.1.3 The Function of miR-101 In Osteoarthritic Cartilage Degeneration
Chunyan Zhou, Yingfang Ao, Linghui Dai, Xiaoqing Hu, Xin Zhang, Beijing/CN

1.1.4 Osteoarthritis Research At Nanjing Drum Tower Hospital
Qing Jiang, Nanjing/CN

1.1.5 Deacetylation Of TGTβr1/2 Mediates Poor Chondrogenic Differentiation and Osteoarthritis Susceptibility in WJ-MSCs from IUGR Neonates
Liaobin Chen, Wuhan/CN

11:00–12:00  Plenary Session  Room: Samarkan

1.2 ICRS Meets China – Part II
Moderators:  Yingfang Ao/CN, Lek-Hang Chaeng/MO

1.2.1 Developing One Stage Cell Based Therapy for Cartilage Defects
Daniel BF Saris, Rochester/US

1.2.2 Synovial Stem Cell-Based Cartilage Repair – From Bench to Clinic
Norimasa Nakamura, Osaka/JP

1.2.3 3D Bio-Printing In Cartilage Repair
Yingfang Ao, Beijing/CN

1.2.4 Overview of Autologous Chondrocyte Implantation
Daping Wang, Shenzhen/CN

1.2.5 Cartilage Regeneration Research At Zhejiang University
Hongwei Ouyang, HENG Sun, Yishan Chen, Zongyou Pan, Hangzhou/CN

1.2.6 The Role of Mir146a in Cartilage Degeneration and Regeneration
Xiaoling Zhang, Chuandong Wang, Shanghai/CN

12:00–12:50  Plenary Session  Room: Samarkan

1.3 ICRS Meets China – Part III
Moderators:  Xiaoling Zhang/CN, Yu Jiakuo/CN

1.3.1 The Chondron: As Seed Cells In Cartilage Tissue Engineering
Xiaochun Wei, Taiyuan/CN

1.3.2 Investigations on Key Success Factors for Tissue Engineering Cartilage Cultivation
Jiakuo Yu, Beijing/CN

1.3.3 Cartilage Fragment Repair with Medical Aural and Encephalic Glue
Jieruo Li¹, Chaeng Lek-Hang², Xiaofei Zheng¹, ¹Guangzhou/CN, ²Macau/CN

1.3.4 Advanced Imaging of Cartilage
Huishu Yuan, Beijing/CN

1.3.5 The Diagnosis & Treatment of Meniscus Posterior Root Tears
Lunhao Bai¹, ², ¹Shenyang/CN, ²ShenYang/CN

2:00–12:50  Opening Session  Room: Almaty 1

2.1 Rehabilitation/Injury Prevention of the Knee
Moderators:  Jay Ebert/AU, Jennifer Howard/US

2.1.1 Rehabilitation of the Degenerative Knee
Lynn Snyder-Mackler, Newark/US

2.1.2 Good Surgery Needs Good Rehab: Mechanics & Timelines of Exercises
Barbara Wondrasch, St. Poelten/AT

2.1.3 New Ideas, Innovations And Technologies
Karen Hambly, Chatham Maritime/GB

2:00–12:50  Opening Session  Room: Samarkan

2.2 Repair of the Knee Joint as an Organ
Moderators:  Mats Brittberg/SE, Christian Lattermann/US

2.2.1 Role of Subchondral Bone in OC Repair
Brigitte Von Rechenberg, Zürich/CH

2.2.2 Role Of Synovial Environment
Virginia Kraus, Durham/US

2.2.3 Mechanically Induced Chondrogenesis - Differentiation & Biomarker Discovery
Martin J. Stoddart, Davos Platz/CH
14:15–15:15  Special Session  Room: Almaty 1

3.1  Complex Issues Alignment, Meniscus & Cartilage
Moderators: Alberto Gobbi/IT, Kenneth Zaslav/US

3.1.1  Complex Cartilage Repair: Alignment, Meniscus, Cartilage: What Is Leading The Charge
Tim Spalding, Coventry/GB

3.1.2  Postmeniscectomy Knee: Allograft Vs Synthetic
João Espregueira-Mendes, Porto/PT

3.1.3  Cartilage Repair in the Face of Early Osteoarthritis
Tom Minas, Chestnut Hill/US

14:15–15:15  Special Session  Room: Samarkan

3.2  Early Osteoarthritis & Cartilage Repair
Moderators: Susan Chubinskaya/US, Henning Madry/DE

3.2.1  Treatment of Early Osteoarthritis in the Horse
C. Wayne McIlwraith, Fort Collins/US

3.2.2  Injury-Induced Osteoarthritis as a Whole Organ Disease: See to Treat
Anna Spagnoli, Chicago/US

3.2.3  Early OA: Clinical Data
Stefan Lohmander, Lund/SE

14:15–15:15  Special Session  Room: Almaty 3

3.3  Cartilage & the Patello-Femoral Joint
Moderators: Jack Farr/US, Cassandra Lee/US

3.3.1  Patellofemoral Cartilage Lesion: When to Treat and When Not to Treat?
Seth Sherman, Columbia/US

3.3.2  Cartilage Lesions In Patellofemoral Instability
James HP Hui, Singapore/SG

3.3.3  The Degenerative Patellofemoral Joint: Salvage Cartilage Restoration vs. Patellofemoral Arthroplasty
Jack Farr, Greenwood/US

15:15–16:15  Break/Poster Viewing/Exhibition

16:15–18:00  Plenary Session  Room: Samarkan

5.0  Opening Ceremony & Award Session

6.0  Honorary Lectures

6.0.1  The History of Cartilage Research
Freddie Fu, Pittsburgh/US

6.0.2  Cartilage Repair: The Future and Beyond
Farshid Guilak, St. Louis/US

18:00–19:30  Social Event  Room: Kokand

7.0  Welcome Cocktail
All participants, industry representatives and accompanying persons are invited to join the welcome cocktail in the Exhibit Area. The welcome reception is offered to you by the ICRS. After the cocktail, participants have free time for their own leisure to discover Macau and enjoy one of the many nice Restaurants, Bars & Casinos.
07:30–08:30  Instructional Course  Room: Almaty 2

8.1 Successful Publishing, Grant Writing & Programme Building
Moderator: Mats Brittberg/SE

8.1.1 Editor’s Tasks and Responsibilities; Successful Publishing in CARTILAGE; A Live Dissection of a Paper Stage to Stage with Reviewers and Authors
Mats Brittberg, Kungsbacka/SE

8.1.2 Associate Editors Steps in the Review Process
Jack Farr, Greenwood/US

8.1.3 Reviewers Tips & Tricks
William Bugbee, La Jolla/US

8.1.4 How the Revision should be Handled
Christian Lattermann, Lexington/USA

07:30–08:30  Instructional Course  Room: Almaty 3

8.2 In Vitro Repair Modelling: Cartilage, Subchondral Bone & Disc
Moderators: Susan Chubinskaya/US, Rita Kandel/CA

8.2.1 Chondrocyte Cell Culture
Susan Chubinskaya, Chicago/US

8.2.2 Osteochondral Unit Cultures
Gerjo Van Osch, Rotterdam/NL

8.2.3 Co-Cultures & Stem Cells
Lucienne Vonk, Utrecht/NL

07:30–08:30  Instructional Course  Room: Almaty 1

8.3 Practical Tips for Cartilage Restoration Procedures
Moderator: Dennis Crawford/US

8.3.1 How to Identify the Ideal Procedure for the Knee Cartilage Patient
Leela Biant, Edinburgh/GB

8.3.2 How to Assess Progress: What is Normal and What is Not?
Konrad Slynarski, Warszawa/PL

8.3.3 How to Recognize Failure after Cartilage Repair and how to Approach it?
Dennis Crawford, Portland/US

08:30–09:30  Plenary Session  Room: Samarkan

9.0 Stem Cells & PRP in Cartilage Repair & Early OA
Moderators: Giuseppe Filardo/IT, C. Wayne McIlwraith/US

9.0.1 Translational Approaches for the Use of Stem Cells in the Degenerative Knee
Norimasa Nakamura, Osaka/JP

9.0.2 Has PRP Lived up to the Hype: Where are we now and where are we going?
Giuseppe Filardo, Luca Andriolo, Andrea Sessa, Francesco Perdisa, Alessandro Di Martino, Bologna/IT

9.0.3 Alternative Therapies for Early OA: Stem Cells, PRP & HA
Stefan Nehrer, Vivek Jeyakumar, Krems/AT

09:45–10:45  Special Session  Room: Almaty 2

10.1 Best & Worst Clinical Outcomes of Routine/Universal Surgical Techniques
Moderators: Roland Jakob/CH, Jack Farr/US

10.1.1 Cell-Based Cartilage Repair
Alberto W. Gobbi1, Graeme Whyte2, Ajinkya Desale1, Norimasa Nakamura3, 1Milano/IT, 2New York/US, 3Osaka/JP

10.1.2 Marrow Stimulation Techniques: What is New and What is the Data?
Riley Williams, New York/US

10.1.3 Osteochondral Grafts
Simon Görtz, Phoenix/US

09:45–10:45  Special Session  Room: Samarkan

10.2 Early Osteoarthritis
Moderators: Christoph Erggelet/CH, Luis Tirico/BR

10.2.1 Cartilage Defect or Osteoarthritis? Where to draw the Line and Why?
Christian Lattermann, Lexington/US

10.2.2 Can We Image Early OA?
Siegfried Trattnig, Wien/AT

10.2.3 Potential Future Strategies To Address Early OA
Yingfang Ao, Beijing/CN
### 09:45–10:45 Special Session Room: Almaty 3

**10.3 Personalized Medicine in Cartilage**  
*Moderators: Virginia Kraus/US, Daniel Grande/US*

10.3.1 How to Personalize the Approach to Cartilage Repair?  
*Daniel BF Saris, Rochester/US*

10.3.2 Genetics  
*Linda Sandell, St. Louis/US*

10.3.3 Glycobiological Approaches for the Elucidation of Cartilage Degradation  
*Norimasa Iwasaki, Sapporo/JP*

### 10:45–12:30 Break/Poster Viewing/Exhibition

### 12:30–13:00 Industry Satellite Symposia

| 12.1 | Room: Almaty 1 |
| 12.2 | Room: Samarkan |
| 12.3 | Room: Almaty 2 |
| 12.4 | Room: Almaty 3 |
| 12.5 | Room: Almaty 1 |

A detailed List and Individual Programmes of the Industry Symposia is available on page 58–61.

### 13:30–15:00 Free Papers Room: Almaty 3

**13.1 Meniscus & Clinical Studies (ICRS China Chapter)**  
*Moderators: Lei Zhang/CN, Hwa-Chang Liu/TW*  
*Timing: 6 Min. Presentation and 3 Min. Discussion Time*

13.1.1 Does Torn Discoid Meniscus Have More Effects on Medial Meniscal Extrusion and Arthritic Changes in Older Patients?  
*Jian Li, Zhong Zhang, Gang Chen, Chengdu, China/CN*

13.1.2 The Potential Of Using Semitendinosus Tendon As Autograft In Rabbit Meniscus Reconstruction  
*Li Chenxi, xiaoqing Hu, Yingfang Ao, Beijing/CN*

13.1.3 Arthroscopic Meniscectomy Combined With Suture For Treatment Of Unstable Discoid Meniscus Injuries  
*Ziquan Yang, Taiyuan/CN*

13.1.4 MRI follow-up study of bone contusion and Cartilage changes After isolated Anterior Cruciate Ligament Reconstruction  
*Lei Zhang, Beijing/CN*

13.1.5 The Characteristics of EEG Power Spectra Changes After ACL Rupture  
*XIN Miao, Hongshi Huang, xiaoqing Hu, Dai Li, Yuanyuan Yu, Yingfang Ao, Beijing/CN*

13.1.6 Postoperative 2 Years Follow-Up Of Matrix Induced Autologous Chondrocyte Implantation In 67 Cases  
*Zhu Weimin, Shenzhen/CN*

13.1.7 Mosaicplasty Combined With PRP In The Treatment Of Knee Articular Cartilage Injury: Early Clinical Evaluation  
*Mingyu Zhang, Xi’an/CN*

13.1.8 The Efficacy Of Arthroscopic Osteochondral Autograft For Knee Cartilage Defects: A Ten Year Follow-Up Study  
*Yun Xiangdong, Lanzhou/CN*

13.1.9 Knee Biomechanics In Patients With Anterior Cruciate Ligament Reconstruction During Walking  
*Hongshi Huang, Huijuan Shi, Yuanyuan Yu, Si Zhang, Yingfang Ao, Beijing/CN*

13.1.10 Application Of T2-Mapping In The Osteochondral Lesions Of The Talus After Microfracture  
*Lixiang Gao, Huishu Yuan, Beijing/CN*
13:30–15:00 Free Papers Room: Almaty 2

13.2 Hip & Ankle

Moderators: Emmanuel Papacostas/GR, Francesca Vannini/IT Timing: 6 Min. Presentation and 3 Min. Discussion Time

13.2.1 Acetabular Labral Reconstruction With Autologous Tendon Tissue In A Porcine Model: In Vivo Study
Jianquan Wang, Yingfang Ao, Yuanyuan Shi, Linxin Chen, Beijing/CN

13.2.2 Acetabular Microfracture In Hip Arthroscopy: Clinical outcomes With Minimum Five-Year Follow-Up
Ben Domb, Danil Rybalko, Brian Mu, Jody Litrenta, Austin Chen, Itay Perets, Westmont/US

13.2.3 Reconstruct Or Repair The Labrum In Revision Hip Arthroscopy? A Matched Control Study
Ben Domb, Itay Perets, Westmont/US

13.2.4 Does dGEMRIC Provide an Advantage over Conventional MRI in the Evaluation of Hip Chondral Injury? A Systematic Review
Patrick C. McCulloch, Michael Cain, Ross Gillum, Ronald Mitchell, Joshua Harris, Brayden Gerrie, Houston/US

13.2.5 Agreement Between MRI and Arthroscopic Localization of Chondral & Labral Pathology in FAI Patients

13.2.6 Hip Arthroscopy In Patients Over 50: Five-Year Outcomes And Risk Factors Associated With Conversion To Hip Arthroplasty
Ben Domb, Itay Perets, Edwin Chaharbakhshi, Brian Mu, Lyall Ashberg, Leslie Yuen, Westmont/US

13.2.7 Predictors of Acetabular Chondrolabral Delamination: A Readily Employable In-Clinic Scoring System
Aaron Krych1, Mario Hevesi1, Isabella Wu1, Vishal S. Desai1, Daniel BF Saris1 2, Bruce Levy1, 1Rochester/US, 2Utrecht/NL

13.2.8 Matrix-induced Autologous Chondrocyte Implantation of Talus Osteochondral Defect
Wu Bing, Wei Lu, Shenzhen/CN

13.2.9 Long-Term Follow-Up Of Revision Osteochondral Allograft Transplantation Of The Ankle
Florian Gaul1 2, Luis E. Tirico3, Julie McCauley4, William Bugbee5, 1La Jolla/US, 2Leipzig/DE, 3São Paulo/BR

13.2.10 Weight And Osteochondral Lesions Of The Talus: Can Be Considered A Negative Predictor Factor?
Cristian Indino, Federico Giuseppe Usuelli, Camilla Maccario, Luigi Manzi, Claudia Di Silvestri, Riccardo D’Ambrosi, Milan/IT

13:30–15:00 Free Papers Room: Samarkan

13.3 Clinical Trials and Outcomes


13.3.1 RCT Comparing ACI-C Versus AMIC In The Knee
Gunnar Knutsen, Vegard Fossum, Ann Kristin Hansen, Tom Wilsgaard, Oddmund Johansen, Tromsø/NO

13.3.2 A Single Stage Arthroscopic Autologous Collagen Induced Chondrogenesis - Five Year Results
Ananthram A. Shetty1, Raju Vaishya2, Neha Shetty1, David Stelezeneder3, Seok Jung Kim4, 1Chatham Maritime/GB, 2New Delhi/IN, 3Lazarettgasse, Vienna/AT, 4Seoul/KR

13.3.3 Platelet-Rich Plasma Intra-Articular Knee Injections Vs Viscosupplementation: Long-Term Results Of A RCT
Giuseppe Filardo1, Berardo Di Matteo2, Alessandro Di Martino1, Andrea Sessa1, Francesco Tontoni2, Stefano Zaffagnini1, Elizaveta Kon1, 1Bologna/IT, 2Milano/IT

13.3.4 A 52 week Randomized, Double-Blind Phase 2 Study Of Intra-Articular, Wnt Pathway Inhibitor (SM04690) For Osteoarthritis, Jeymi Tambiah1, Sarath Kennedy1, Christopher Swearingen1, Ismail Simsek1, Andreas H. Gomoll1, Deryk G. Jones2, Morgan Jones3, John Bergfeld4, 1San Diego/US, 2Boston/US, 3Jefferson/US, 4Cleveland/US

13.3.5 An Autologous Protein Solution Injection Reduces Knee Osteoarthritis Pain in a Saline-Controlled RCT: 2 Year Outcomes, Elizaveta Kon1, Lars Engebretsen2, Peter Verdonk3, Stefan Nehrer4, Luca Andriolo2, Giuseppe Filardo5, 1Milano/IT, 2Oslo/NO, 3Gent-Zwijnaarde/BE, 4Krems/AT, 5Bologna/IT

13.3.6 Matrix-Induced Autologous Chondrocyte Implantation in the Tibiofemoral Knee Joint: 10-12 Year Follow-Up
Jay Ebert1, Minghao Zheng2, Timothy Ackland1, Greg Janes1, David Wood1, 1Perth/AU, 2Crawley/AU

13.3.7 Threshold Values for Preoperative Patient Reported Outcome Scores to Predict Global Function following ACI
Jennifer Howard1, Caitlin Conley2, Cale Jacobs2, Christian Lattermann1, 1Boone/US, 2Lexington/US

13.3.8 OAT for Treating Femoral Trochlear Cartilage Defects: The Outcomes of 1 Year to 6 Years Follow-up Study
Jiwei Chen, Ye Meng, Yangyang Pan, Hai Feng, Dechun Wang, Qingdao/CN

13.3.9 Clinical Outcome of Patients with Osteoarthritis and Patients without OA, Treated with a Novel Aragonite-Based Implant, Elizaveta Kon1, Nir Altschuler2, Peter Verdonk1, Matej Drobnic3, Oliver Dulic3, Gordana Gavrilovic4, Kenneth Zaslav5, Andrew Levy6, Marian Patrascu6, Dörk Robinson10, 1Milano/IT, 2Kfar Saba/IL, 3Antwerp/BE, 4Ljubljana/SI, 5Novi Sad/RS, 6Belgrade/RS, 7Rimond/US, 8Millburn/US, 9Timi oara/RO, 10PetahTikwa/IL

13.3.10 Repair of Large Chondral Lesions with Single - Step Chondrocyte and Bone Marrow Cells Co - Transplantation, Konrad Slynarski, Lukasz Lipinski, Warszawa/PL
13:30–15:00  Free Papers  Room: Almaty 1

**13.4 Imaging**

Moderators: Goetz Welsch/DE, Sharmila Majumdar/US
Timing: 6 Min. Presentation and 3 Min. Discussion Time

13.4.1 Collagen Assessment of the Low-Grade Cartilage Lesions Using T2 Mapping at 3 and 7 Tesla MRI: One Year Follow-Up Study, Vladimir Juras¹, Markus Schreiner¹, Didier Laurent², Vladimir Mlynarik², Pavol Szomolanyi³, Stefan Marlovits³, Stefan Zbyn³, Celeste Scotti⁴, Joerg Goldhahn⁴, Harry Haber⁵, Ewa Kubiak⁶, Rahel Heule⁶, Oliver Bier², Ivan Frollo⁶, Siegfried Trattnig⁴; Vienna/AT, ²Basel/CH, ³Oulu/FI, ⁴Bratislava/SK

13.4.3 Joint Space Width Criteria Can Reduce Knee OA Trial Heterogeneity: P2 Post-hoc Data From Wnt Pathway Inhibitor, SM04690, Jeymi Tambiah¹, Inhibitor, SM04690, Christopher Swearingen¹, Alan Brett¹, Mike Bowes³, Philip Conaghan⁴, San Diego/US, ²Lexington/US, ³Manchester/GB, ⁴Leeds/GB

13.4.4 Longitudinal Assessment of Cartilage Composition by High-Field MRI in Patients with Low-Grade Knee Cartilage Injury, Didier Laurent², Vladimir Juras², Vladimir Mlynarik², Markus Schreiner², Pavol Szomolanyi³, Stefan Marlovits³, Stefan Zbyn³, Celeste Scotti⁴, Joerg Goldhahn⁴, Harry Haber⁵, Ewa Kubiak⁶, Ronenn Roubenoff¹, Vladimir Juras², Pavol Szomolanyi², Stefan Marlovits², Siegfried Trattnig⁴, ¹Vienna/AT, ²Basel/CH, ³Vienna/AT, ⁴Zurich/CH, ⁵Wien/AT

13.4.5 Correlation Between T2-Mapping Relaxation Time and Degree of Meniscus Degeneration, Xuan Huang, Shanghai/CN

13.4.6 Cartilage Histopathology Grading Reliability is Improved by Quantitative and Visual Feature Definitions and Image Atlas, Felix Hsu³, Haoran Qiu⁴, Leening Liu⁴, Neil Chang⁴, Barbara Schumacher⁴, Koichi Masuda⁴, Robert Sah⁴, ¹Ja Jolla/US, ²La Jolla/US

13.4.7 Comparison of Cartilage Lesions Morphologic Properties Prepared by Standard Curette and Specialized Chondrocyte Implantation, Anell Olivos Meza⁵, Francisco Perez Jimenez, Enrique Villalobos, Socorro Cortes González, Francisco Cruz Lopez, arturo Almazan, Clemente Ibarra, Mexico City/MX

13.4.8 Quality of Cartilage Repair After 6 Years of Autologous Chondrocyte Implantation, Anell Olivos Meza, Francisco Perez Jimenez, Enrique Villalobos, Socorro Cortes González, Francisco Cruz Lopez, Arturo Almazán, Clemente Ibarra, Mexico City/MX

13.4.9 Automated Quantitative 3D Micro-Computed Tomography Characterization of Osteochondral Tissue Regeneration, Carlos Osuna, Rebecca Drake, Giovanna Silberman, Chengzhen Liang, Juan Carlos Izipisua Belmonte, Robert Sah, La Jolla/US

13.4.10 Comparison of Cartilage Graft Histology Between Patients Undergoing TKA and Knee Revision Surgery after MACI, Aswin Beck¹, David Wood², Tao Wang³, Jay Ebert⁴, Minghao Zheng⁴, ¹Crawley/AU, ²Perth/AU

15:15–16:15  Special Session  Room: Samarkan

**14.1 All About Synovial Environment**

Moderators: Stefan Lohmander/SE, Virginia Kraus/US

14.1.1 Synovial Fluid
Stefan Lohmander, Lund/SE

14.1.2 Macrophages in Early OA and Synovitis
Gerio Van Osch, Yvonne Bastaansen-Jenniskens, Rotterdam/NL

14.1.3 Extracellular Vesicles and their Contents
Lucienne Vonk, Utrecht/NL

15:15–16:15  Special Session  Room: Almaty 1

**14.2 The Role of Cells in Cartilage Repair**

Moderators: Susan Chubinskaya/US, Farshid Guilak/US

14.2.1 Chondrocytes
Rebekah Decker, San Diego/US

14.2.2 Meniscus, Cells & Scaffolds
Darryl D’Llima, La Jolla/US

14.2.3 The Immunobiology of Migrating Cell Populations in Synovial Membrane & Subchondral Bone
Mark Hurtig, Guelph/CA

15:15–16:15  Special Session  Room: Almaty 2

**14.3 All About Bone**

Moderators: Patrick Orth/DE, Brigitte Von Rechenberg/CH

14.3.1 Biology of the Subchondral Bone
Henning Madry, Homburg/DE

14.3.2 Subchondral Bone Imaging
Nogah Shabshin¹, ², ¹Philadelphia/US, ²Afula/IL

14.3.3 Bone Marrow Lesions
Elizaveta Kon¹, Berardo Di Matteo¹, Filippo Vandenbulcke¹, Maurilio Marcacci¹, Giuseppe Filardo², Luca Andriolo², ¹Milano/IT, ²Bologna/IT

16:15–17:00  Break/Poster Viewing/Exhibition
### 17:00–18:30 Free Papers Room: Almaty 2

#### 15.1 Meniscus
Moderators: Darryl D’Llma/US, Patrick Yung/HK
Timing: 6 Min. Presentation and 3 Min. Discussion Time

15.1.1 Development of a One-Stage Cell-Based Arthroscopic Procedure for Meniscus Regeneration
Michella Hagmeijer¹, Lucienne Vonk¹, Roel Custers¹, Jan-Willem Kouwenhoven¹, Ronald Bleys¹, Aaron Krych¹, Daniel BF Saris¹,², Universiteit NL, ²Rochester/US

15.1.2 Role Of Scaffold Mean Pore Size In Meniscus Regeneration
Zhang Zheng-Zheng, Beijing/CN

15.1.3 Meniscus Degeneration Correlates With Articular Cartilage Damage In The Collagenase-Induced Osteoarthritis Mouse Model
Gerjo Van Osch, Lizette Utomo, Susanne Eijgenraam, Duncan Meuffels, Yvonne Bastiaansen-Janekens, Rotterdam/NL

15.1.4 Comparative Outcomes of Radial and Bucket-Handle Meniscal Tear Repair: A Propensity-Matched Analysis
Mario Hevesi¹, Vishal S. Desai¹, Isabella Wu¹, Brian Samuelsen¹, Daniel BF Saris¹,², Universiteit NL, ²Rochester/US

15.1.5 Expectations and mid-term results of 192 Meniscal Allograft Transplants determined by indication
Laura Asplin, Tim Spalding, Peter Thompson, Simon Middleton, Ciara Stevenson, Coventry/GB

15.1.6 3D-Printed Poly (Epsilon-Caprolactone) Scaffold Combined With ECM-Based Hydrogel For Tissue-Engineered Meniscus
Mingxue Chen, Quanyi Guo, Beijing/CN

15.1.7 Meniscus Regeneration Using Different Growth Factors And A Degradable Meniscus Implant
Michella Hagmeijer¹, Jasmijn Korpershoek¹, Liting Chen¹, Joao Crispim², Daniel BF Saris¹,², Universiteit NL, ²Rochester/US

15.1.8 Potential Of Meniscus Regeneration With Novel Meniscal Scaffold Made By Polyglycolic Acid
Shuhei Otukii, Tomohiko Murakami, Kosuke Nakagawa, Shunsuke Sezaki, Hideki Satoh, Masashi Neo, Osaka/JP, ²Kyoto/JP

15.1.9 MRI Evaluation For Novel Atelocollagen Meniscus Substitute In Comparison With Histological Evaluation
Seira Sato¹, Hiroyuki Yoko¹, Yasuhiro Take¹, Tatsuo Mae², Yuta Tachibana², Kazunori Shimomura, Yang Chong, Minami Hikida, Tomoki Ohori, Hideki Yoshikawa², Ken Nakata¹, Toyonaka City/JP, ²Suita City/JP

15.1.10 High Rate of Missed Lateral Meniscus Root Tears On Preoperative Magnetic Resonance Imaging
Aaron Krych¹, Isabella Wu¹, Vishal S. Desai¹, Naveen Murthy¹, Mark Collins¹, Daniel BF Saris¹,², Universiteit NL, ²Rochester/US

### 17:00–18:30 Free Papers Room: Almaty 1

#### 15.2 Stem Cells
Moderators: Nori Nakamura/JP, Marcel Karperien/NL
Timing: 6 Min. Presentation and 3 Min. Discussion Time

15.2.1 KLF15 Regulates Chondrogenic Differentiation of Human Mesenchymal Stem Cells By Targeting SOX9, Zhuoyue Song, Jianzhong Xu, Guangheng Li, Zhengzhou/CN

15.2.2 Chondrogenic Differentiation Of Human Induced Pluripotent Stem Cells Derived From Peripheral Blood Mononuclear Cells, Wan-ju Li, Lihong Tao, Ming-Song Lee, Igor Slukvin, Madison/US

15.2.3 Differentiation of Human Induced Pluripotent Stem Cells to Alkaline Phosphatase-Free Chondrocytes, Solvig Diederichs, Wiltrud Richter, Heidelberg/DE

15.2.4 An Experimental Study On The Difference Of Chondrogenic Differentiation BetweenADMSCs And SD-MSCs, Zhuoyue Song, Jianzhong Xu, Guangheng Li, Zhengzhou/CN

15.2.5 Depot-Dependent Chondrogenic Potential of Adipose Stem Cells, Ming Pei¹, Tingliang Wang¹, Kirk Hansen², Ryan Hilf³, Morgantown/US, ³Co/US

15.2.6 In Vivo Stem Cell Monitoring Using Copper-Free Click Chemistry, Hyuksoo Han¹, Hyun Cheol Bae, Myung Chul Lee, Seoul/KR

15.2.7 Inhibiting Paracrine Senescence Improves Expansion and Chondrogenic Differentiation of hBM-MSCs, Roberto Narcisi, Johannes Lehmann, Natasha Francischini, Danai Chatzivasileiou, Derk Ten Berge, Gerjo Van Osch, Rotterdam/NL

15.2.8 Site-Specific and Functional Heterogeneity of Mesenchymal Stem/Stromal Cells in Bone Marrow, Gerjo Van Osch¹, Kaviitha Sivasubramaniyan, Pieter Bos¹, Diego Santos¹, Abhishek Harichandan², Dragos Ilas³, Peter De Zwart², J.L.M. Koekoel¹, Heather Owston³, Hans-Jörg Bühring², Elena Jones⁴, Rotterdam/NL, ³Maastricht/NL, ⁴Leeds/GB, ⁵Tübingen/DE

15.2.9 Integrin α10β1-selected equine MSC show improved chondrogenesis and adhesion as well as immune modulatory properties, Kristina Uvebrant¹, Linda Larsson¹, Jan Talts², Paolo Albertoni², Atila Aszodi², Evy Lundgren-Akerlund³, ¹Lund/SE, ²Munich/DE

15.2.10 Cultured Versus Uncultured Mscs For Cartilage Regeneration Of The Knee: A Systematic Review And Meta-Analysis, Keng Lin Francis Wong, Sharon Si Heng Tan, Ming Wang, Wei Jian Neo, Joshua Tze Yin Kuek, Wei Seong Toh, James HP Hui, Singapore/SG
17:00–18:30  Free Papers  Room: Samarkan

15.3  **Osteoarthritis - Basic Science**
Moderators: Gerjo Van Osch/NL, Anna Spagnoli/US
Timing: 6 Min. Presentation and 3 Min. Discussion Time

- **15.3.2** Wnt16 Attenuates Osteoarthritis Progression Through The Wnt/PCP-JNK-mTORC1-PTHrP Cascade
  Wenxue Tong, Ling Qin, Hong Kong/HK

- **15.3.3** Trehalose Delays the Progression of Osteoarthritis by Enhancing Autophagy in Chondrocytes
  Xingquan Xu, Dongquan Shi, Qing Jiang, Nanjing/CN

- **15.3.5** Targeted Inhibition of TAK1 Prevents Inflammation-Related Cartilage Degradation in Osteoarthritis
  Jin Cheng, Yingfang Ao, Beijing/CN

- **15.3.6** Fibrin/Hyaluronic Acid Hydrogel-Based Delivery of Antisense Oligonucleotides for Gene Modulation in Osteoarthritis
  João P. Garcia1, Jeroen Stein1, Yunpeng Cai2, Ezequiel Wexselblatt3, Laura B Creemers1, Jeppe Johannessen1, Kenneth A Howard2, Daniel BF Saris1, Avner Ya
d3, 1Utrecht/NL, 2Aarhus/DK, 3Ness Ziona/IL, 4Odense/DK

- **15.3.7** TGF-β Increases Transglutaminase-2 Expression via ERK and p38 Phosphorylation in Osteoarthritis Chondrocytes
  Jong-Keun Kim, Hyuksoo Han, Hyun Cheol Bae, Myung Chul Lee, Seoul/KR

- **15.3.8** NAI1-Dependent Functional Regulation of the Inflammation Amplifier in Chondrocytes via NF-kB Activation
  Mitsutoshi Ota, Yuki Tanaka, Yasunobu Arima, Daisuke Kamimura, tomohiro Onodera, Masaaki Murakami, Norimasa Iwasaki, Sapporo/JP

- **15.3.9** HAS2 Overexpression Inhibits Activated MMP13 Expression In Human Chondrocytes
  Shinya Ishizuka1, Cheryl Knudson2, Emily Askew2, Naoko Ishizuka2, Hideki Hiraiwa1, takashi Hamoda, Yohei Ono, Naoko Ishiguro1, Warren Knudson2, 1Na
goya/JP, 2Greenville/US, 3Mizunami/JP

- **15.3.10** Prenatal Nicotine Exposure Intergenerationally Programs Imperfect Articular Cartilage
  Zhe Xie, Liaobin Chen, Hui Wang, Wuhan/CN

17:00–18:30  Free Papers  Room: Almaty

15.4  **Physical Therapy**
Moderators: Tim Hewett/US, Caitlin Whale Conley/US
Timing: 6 Min. Presentation and 3 Min. Discussion Time

- **15.4.1** 10 Year Follow-Up of a Randomized Trial Evaluating Accelerated Weight Bearing after Autologous Chondrocyte Implantation
  Jay Ebert, Michael Fallon, Timothy Ackland, Greg Janes, David Wood, Perth/AU

- **15.4.2** What is the Activation Profile of Quadriceps and Gluteal Muscles in Short-Arc Quadriceps and Seated Clamshell Exercises?
  Karen Hambly, Philip Bright, Chatham Maritime/GB

- **15.4.3** Comparing the Result of Muscle Isokinetic Strength and Endurance in Operated Limb With Non-operated and Control 12/24 Months Patients AMIC,
  Agnieszka Prusinska1, Tomasz Piontek2, Kinga Ciemniewska-Gorzela2, 1Poznan/PL, 2Poznan/PL

- **15.4.4** Feasibility of Patients Using an Online Forum for Reporting Progress for a Knee Rehabilitation Programme,
  Karen Hambly, Philip Bright, Chatham Maritime/GB

- **15.4.5** The Effect of Home-Based Exercise on Lower Limb Muscle Strength, Balance and Symptoms in KOA Elderly Patients in China
  Chen Hongbo, Shang Shaomei, Zheng Xiaoyan, Liu Congying, Wan Qiaoqin, Beijing/CN

- **15.4.6** Rehabilitation Strategy of Ankle MACI Procedure,
  Wei Lu, Daping Wang, Shenzhen/CN

- **15.4.7** Return To Running Following Knee Osteochondral Repair Using An Anti-Gravity Treadmill,
  Karen Hambly, Somruthai Poomsalood, Emma Mun
dy, Deana Stephens, Chatham Maritime/GB

- **15.4.8** Rehabilitation Attendance Correlates with Postoperative Outcomes After Articular Cartilage Surgery,
  Caitlin Conley1, Jennifer Howard2, Carl Mattacola3, Cale Jacobs1, Christian Lattermann1, 1Lexington/US, 3Boone/US

- **15.4.9** Sports Activity After Arthroscopic Autologous Matrix-Induced Chondrogenesis For Osteochondral Lesions Of The Talus, Cristian Indino, Riccardo D’Ambrosi, Luigi Manzi, Camilla Maccario, Claudia Di Silvestri, Federico Giuseppe Usuelli, Milan/IT

- **15.4.10** What Proportion Of Studies Report Satisfaction With Software Support Tools Used In Knee Pain Management?
  Karen Hambly, Philip Bright, Chatham Maritime/GB

19:30  President’s Dinner at Hotel Lisboa
(Upon Invitation Only)
19:00  Meeting Point: Sheraton South Lobby/Earth Tower
07:30–08:30  Instructional Course Room: Almaty 1

16.1  Cartilage Repair in Hip & Ankle
Moderators: Cassandra Lee/US, Simon Görtz/US

16.1.1  Allograft Cartilage Repair in the Ankle
Francesca Vannini1, Roberto Buda1,2, Antonio Mazzotti1, Sandro Giannini1, 1Bologna/IT, 2Bolgona/IT

16.1.2  Cell Based Cartilage Repair in the Ankle
Hajo Thermann, Heidelberg/DE

16.1.3  State of the Art in Hip Cartilage Repair
Marc Philippon, Vail/US

07:30–08:30  Instructional Course Room: Almaty 3

16.2  What are the Benchmarks?
Moderators: Tom Minas/US, Konrad Slynarski/PL

16.2.1  Cartilage Repair
Aaron Krych, Rochester/US

16.2.2  Meniscus
Tim Spalding, Coventry/GB

16.2.3  Joint Salvage
William Bugbee, La Jolla/US

07:30–08:30  Instructional Course Room: Almaty 2

16.3  Know Before you Go - Decision Making in Cartilage Repair
Moderators: Leela Biant/GB, Christian Lattermann/US

16.3.1  High Level Athlete: Long vs Short Term Gains
Bert Mandelbaum, Santa Monica/US

16.3.2  What to do with the Young Worst Case Scenarios?
Scott Gillogly, Doha/QA

16.3.3  Malalignment in Cartilage Repair: When to address?
Stefan Nehrer, Christoph Stotter, Krems/AT

08:30–09:30  Plenary Session Room: Samarkan

17.0  Joint Organ Imaging in Early OA/PTOA
Moderators: Stefan Nehrer/AT, Siegfried Trattnig/AT

17.0.1  Applied Use of Imaging in Cartilage Repair
Goetz Welsch, Hamburg/DE

17.0.2  Advanced New Technologies In Imaging
Sharmila Majumdar, San Francisco/US

17.0.3  Imaging & Decision Making in OCD
James Carey, Philadelphia/US

09:45–10:45  Special Session Room: Almaty 1

18.1  Bio Tribology
Moderators: Mats Brittberg/SE, Robert Sah/US

18.1.1  Cartilage Contact Mechanics after Joint Injury
Suzanne Maher, Olufumilayo Adebayo, Caroline Brial, Amanda Wach, Tony Chen, New York/US

18.1.2  Cartilage Tribology before & after Tissue Damage
Markus Wimmer1, Catherine Yuh1, Robert Trevino1, Michel Laurent1, Anna Plaas1, Suzanne Maher2,1Chicago/US, 2New York/US

18.1.3  Tribological Rehydration of Articular Cartilage
Robert Sah, La Jolla/US

09:45–10:45  Special Session Room: Samarkan

18.2  Bench to Bedside, Successes and Failures – What did we Learn?
Moderators: Gloria Matthews/US, Kenneth Zaslav/US

18.2.1  The ACI/MACI Story: What went Right & What Problems were Overcome?
Kenneth Zaslav, Richmond/US

18.2.2  Promising Technologies & Failed Translation
Sven Kili, London/GB

18.2.3  From Bench to Bedside: Cartilage Autograft Implant System
Jack Farr, Greenwood/US
09:45–10:45  Special Session  Room: Almaty 2

18.3  **Novel Therapeutic Approaches in 2018**
Moderators: Magali Cucchiarini/DE, Farshid Guilak/US

18.3.1 Bioreactors & Bioactive Cartilage Repair Constructs
**Martin J. Stoddart**, Davos Platz/CH

18.3.2 Gene Delivery & Cytokines in Cartilage Repair and Early OA
**Magali Cucchiarini**, Homburg/DE

18.3.3 3D Printing
**Jos Malda**, Utrecht/NL

09:45–10:45  Special Session  Room: Almaty 3

18.4  **ICRS Meets Asia**
Moderators: Yingfang Ao/CN, Norimasa Nakamura/JP

18.4.1 Time-Dependent Recovery of MSC Function after Steroid Therapy: Donor Drug Exposure Could Impact Subsequent Tissue Repair
**Yukihiko Yasui**¹, ², **Suta/JP**, ²Hirakata/JP

18.4.2 Bench to Bedside: Cartilage Restoration in Osteoarthritic Patients by a Composite of Allogeneic hUCB-MSCs and Hyaluronate Hydrogel
**Chul-Won Ha**, Seoul/KR

18.4.3 Injectable Supramolecular Hydrogels as a Delivery Vehicle of Therapeutic Cells and Drugs for Cartilage Repair
**Liming Bian**, Hong Kong/HK

10:45–11:15  Coffee Break/Intermission/Exhibition

11:15–12:45  Free Papers  Room: Samarkand

19.1  **Clinical Studies in Cartilage Repair**
Moderators: Emmanuel Papacostas/GR, James HP Hui/SG
Timing: 6 Min. Presentation and 3 Min. Discussion Time

19.1.1 Association on Preoperative Self-Assessed Knee Scores, Mental Health and Autologous Chondrocyte Implantation, **Jakob Ackermann**¹, Takahiro Ogura², **Robert Duerr**³, **Alexandre Mestriner**⁴—⁵, **Andreas H. Gomoll**¹, ²Chestnut Hill/US, ²Boston/US, ³Sao Paulo/BR

19.1.2 Mid-term Follow-up Results (4 years) after Mesenchymal Stem Cells Implantation for Knee Cartilage Lesions, **Michael Iosifidis**¹, Theoifylaktos Kyriakidis², Efstatios Michalopoulos³, Antonia Mpitoudi¹, **Mina Fylaktou**¹, Aikaterini Stavropoulou³, ³Thessaloniki/GR, ²Brussels/BE, ³Athens/GR

19.1.3 Second-Look Arthroscopic Assessment after Three Different Cartilage Repair Methods with High Tibial Osteotomy, **Yong Sang Kim**, Tak Dae Hyun, Yong Gon Koh, Dong Beom Heo, Seoul/KR

19.1.4 Deterioration Of Clinical Outcome After Microfracture Treatment In Chondral Lesions Of The Knee, **Jong-Keun Suh**, **Hyuksoo Han**, Do-Yoon Lee, Myung Chul Lee, Seoul/KR

19.1.5 10-year results of Autologous Matrix Induced Chondrogenesis (AMIC®) for focal chondral defects of the knee, **Sven Abbach**¹, **Alexander Anders**, Jens Schaumburger, Joachim Grafka, Bad Abbach/DE

19.1.6 Long term evaluation of autologous chondrocyte implantation for symptomatic cartilage lesions of the knee, **Massimo Berruto**¹, Stefano Pasqualotto¹, Francesco Mattia Uboldi², Daniele Tradati³, Paolo Ferrua⁴, Alessio Maione⁵, **Eva Usellini**⁶, ⁶Milano/IT, ²Sassari/IT

19.1.7 Long-term Outcomes of Cartilage Repair Using Hyaluronic Acid-based Matrix and Bone Marrow Aspirate Concentrate (HA-BMAC), **Alberto W. Gobbi**¹, Graeme Whyte², ²Milano/IT, ²New York/US

19.1.8 Clinical Outcome in Patients Treated with an Aragonite-Based Implant with and without Previous Knee Surgeries, **Elizaveta Koris**¹, **Nir Altschuler**², Peter Verdonk³, **Matej Drobnic**⁴, Gordan Gavrilovic⁵, Oliver Dulic⁶, **Andrew Levy⁷**, Kenneth Zaslav⁸, Dror Robinson⁹, **Marian Patrascu**¹⁰, ¹Chestnut Hill/US, ²Kfar Saba/IL, ³Antwerp/BE, ⁴Ljubljana/SI, ⁵Belgrade/RS, ⁶Novi Sad/RS, ⁷Millburn/US, ⁸Richmond/US, ⁹PetahTikwa/IL, ¹⁰Timisoara/RO

19.1.9 Management Of Knee Osteochondritis Dissecans In Skeletally Immature Patients: Mean 14-Years Follow-Up, **Daniel BF Saris**¹—², Mario Hevesi², **Thomas Sanders**², Ayoosh Pareek², Todd Milbrandt², Bruce Levy², **Michael Stuart**³, Aaron Krych³, ³Utrecht/NL, ³Rochester/US

19.1.10 Agili-C Implant Performance in the Treatment of Chondral vs. Osteochondral Defects of the Knee, **Elizaveta Kori**¹, Nir Altschuler², Peter Verdonk², **Matej Drobnic**³, Andrew Levy³, Kenneth Zaslav³, **Marian Patrascu**³, Dror Robinson³, Gordan Gavrilovic⁴, Oliver Dulic⁵, ³Milano/IT, ²Kfar Saba/IL, ²Antwerp/BE, ⁴Ljubljana/SI, ⁵Belgrade/RS, ⁶Novi Sad/RS, ⁷Millburn/US, ⁸Richmond/US, ⁹Timisoara/RO, ¹PetahTikwa/IL, ²Belgrade/RS, ¹⁰Novi Sad/RS
**19.2 Tissue Biomechanics**

Moderators: Markus Wimmer/US, Suzanne Maher/US

Timing: 6 Min. Presentation and 3 Min. Discussion Time

**19.2.1 The Stress Effect Of Simulating Defect On Medial Femoral Condyle Cartilage To Cartilage And Meniscus**

Jakob Ackermann1, Luiz Ambra1, Alexandre Mestriner1, Amy Phan1, Andrea H. Gomolip, 1Chestnut Hill/US, 2Boston/US

**19.2.2 Depletion Of Glycosphingolipids Induces The Excessive Response Of Chondrocytes Under Mechanical Stress Condition**

Shinji Matsubara1, tomohiro Onodera1, Eijiro Maeda2, Daiisuke Momma1, Masatake Matsuoka1, Kentaro Homan1, Toshiro Ohashi1, Norimasa Iwasaki1, 1Sapporo/JP, 2Nagoya/JP

**19.2.3 Extracellular Matrix Content & WNT/β-catenin Levels of Cartilage Determine the Chondrocyte Response to Compressive Load**

Solvig Diederichs, Heiko Praxenthaler, Elisabeth Krämer, Melanie Weisser, Nicole Hecht, Jennifer Fischer, Tobias Grossner, Wiltrud Richter, Heidelberg/DE

**19.2.5 Perfusion And Hydrostatic Pressure Have Prolonged Effects For Normal Chondrocyte But Not For Osteoarthritis Chondrocyte**

GE Zhu, Shanghai/CN

**19.2.6 Lipoxin A4 Plays A Key Role In Therapeutic Effects Of Treadmill Exercise On Osteoarthritis In Rats**

Yue Yang, Lunhao Bai, ShenYang/CN

**19.2.7 Effects Of Mechanical Stress On Chondrocyte Phenotype And Chondrocyte Extracellular Matrix Expression**

Qiang Liu, Yingfang Ao, Beijing/CN

**19.2.8 Bone-Plug versus Suture-Only Fixation of Medial Meniscus Allograft Transplants: A Biomechanical Study**

Jakob Ackermann1, Luiz Ambra1, Alexandre Mestriner1, Amy Phan1, Andrea H. Gomolip, 1Chestnut Hill/US, 2Boston/US

**19.2.9 Load Distribution in the Knee After Meniscectomies of the Lateral Posterior Horn and Meniscus Allograft Transplantation**

Jakob Ackermann1, Luiz Ambra1, Alexandre Mestriner1, 2, Amy Phan1, Andrea H. Gomolip, 1Chestnut Hill/US, 2Sao Paulo/BR, 3Boston/US

**19.2.10 Emerging Roles Of circRNA Related To The Mechanical Stress In Human Cartilage**

Qiang Liu, Yingfang Ao, Beijing/CN

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**19.3 ICRS NextGen Free Papers**

Moderators: Lucienne Vonk/NL, Seth Sherman/US

Timing: 6 Min. Presentation and 3 Min. Discussion Time

**19.3.1 Intra-articular Injection of Magnesium Ion promotes Synthesis of Cartilage Matrix and Chondrogenesis of Stem Cell in Joint Cavity in Rat Osteoarthritis**

Hao Yao, JianKun Xu, Ling Qin, Kevin Ki-wai Ho, Hong Kong/HK

**19.3.2 PTHrP Regulates Chondrocyte Proliferation by Shuttle in and Outside HDAC4 Cells**

Zhiliang Zhang, Taiyuan City/CN

**19.3.3 Periostin: A Biologic Connection between Anterior Cruciate Ligament Tear and Osteoarthritis**

Nobuaki Chinzei, Robert Brophy, Xin Duan, Lei Cai, Ryan Nunley, Linda Sandell, Muhammad Farooq Rai, St. Louis/US

**19.3.5 Nanosecond Pulsed Electric Fields Enhanced Chondrogenic Differentiation Of Mesenchymal Stem Cells**

Ziqiang Ge, Tong Ning, Beijing/CN

**19.3.6 A Comprehensive Functional Evaluation System Of The Regenerative Cartilage**

Zhiqiang Qiao, Chengtao Wang, Kerong Dai, You Wang, Shanghai/CN

**19.3.7 Possible Toxic Effect of Tranexamic Acid and Aminocaproic Acid on Human Chondrocyte**

Soonchul Lee, Min-Ji Ahn, Minjung Baek, Jaehee Kim, Jongbeom Oh, Ki soo Kim, Wonchul Choi, Gyeonggi-do/KR

**19.3.8 Outcomes Following High Tibial Osteotomy: A Multi-Center Comparison Of Conventional Metal Fixation Versus PEEK Implant**

Mario Hevesi2, Isabella Wu1, Vishal S. Desai1, Daniel BF Saris1, 2, Bruce Levy1, Elizabeth Arendt1, Jeffrey Macalena3, Michael Stuart1, Aaron Krych1, 1Rochester/US, 2Utrecht/NL, 3Minneapolis/US

**19.3.9 Invossa®-K(TissueGene-C), a Cell and Gene Therapy for Treating Osteoarthritis: A Phase III Trial In Korea**

Bumsup Lee1, Myung Chul Lee2, 1Rockville/US, 2Seoul/KR

**19.3.10 VEGF Functionalized Suture Tape Demonstrates Early Bone Ingrowth in a Rabbit Model of ACL Repair**

Mario Hevesi1, Carlo Paggi1, Joao Crispim2, Janet Denbeigh1, Sanjeev Kakar1, Andre Van Wijnen1, Aaron Krych1, Daniel BF Saris1, 3, 1Rochester/US, 2Enschede/NL, 3Utrecht/NL
Free Papers  Room: Almaty 3

19.4 Cells (ICRS China Chapter)
Moderator: Lei Zhang/CN
Timing: 6 Min. Presentation and 3 Min. Discussion Time

19.4.1 Extracellular Matrix Formation and Meniscal Phenotype in Co-Cultures of Meniscal Cells and Peripheral Blood Stem Cells, Weili Fu, Jian Li, Chengdu/CN

19.4.2 Sorting CD146-Positive Stem Cells From Human Adipose Tissue For Nude Rat Cartilage Regeneration Xu Li, Mingjie Wang, Weimin Guo, Xiaoguang Jing, Shuyun Liu, Shibi Lu, Quanyi Guo, Beijing/CN

19.4.3 Expression Of Exosomal Micrornas During Chondrogenesis Of Human Bone Mesenchymal Stem Cells Zhiqi Zhang, Hao Sun, Guangzhou/CN

19.4.4 Fluorapatite Crystals Doped With Yb/Ho For Tracking Chondrogenic Differentiation Of Bmscs In Vitro And In Vivo, Xiaoping Hu, Beijing/CN

19.4.5 Effect of LIPUS after Autologous ADSCs Transplantation for Tendon-Bone Healing in a Rabbit Model Can Chen, Jianzhong Hu, Changsha/CN

19.4.6 The Effects of Indirectly Co-Cultured Chondron In Vitro on Chondrocytes Apoptosis Zhao Ruipeng, Li Pengcui, Wei Xiaochun, Taiyuan/CN

19.4.7 Directing Chondrogenesis Of Mesenchymal Stem Cells With A Matrix-Supported Chitosan Hydrogel For Cartilage Regeneration Hongjie Huang, Yingfang Ao, Beijing/CN

19.4.8 hWJMSCs Co-cultured with pACs in ACECM Oriented Scaffold Improve Cartilage Repair in a Caprine Model Yu Zhang, Shuyun Liu, Quanyi Guo, Weimin Guo, Beijing/CN

19.4.9 GRL Peptide Enhanced In Vitro Chondrogenesis Of Mesenchymal Stem Cells And In Vivo Cartilage Regeneration Zigang Ge, Litong Fan, Beijing/CN

Free Papers  Room: Almaty 3

21.1 Allografts
Moderators: Tim Spalding/GB, Simon Görtz/US
Timing: 6 Min. Presentation and 3 Min. Discussion Time

21.1.1 Clinical and MRI Outcomes of Osteochondral Allograft Transplantation after Failed Cartilage Repair Surgery in the Knee, Tim Wang1, Dean Wang2, Alissa Burge3, Mollyann Pais4, Blake Kushwaka5, Scott Rodeo6, Riley Williams1, 1Redwood City/US, 2New York/US, 3New York/UM

21.1.2 Osteochondral Allograft Transplantation of the Knee in Patients With An Elevated Body Mass Index, Dean Wang3, Brian Rebello1, David Dare2, Mollyann Pais4, Matthew Cohn1, Kristofer Jones5, Riley Williams1, 1New York/US, 2Los Angeles/US

21.1.3 Long-Term Follow Up After Osteochondral Allograft Transplantation For Recurrent Osteochondral Lesions Of The Talus, Florian Gaul1, 2, Luis E. Tirico3, Julie McCauley2, William Bugbee1, 1La Jolla/US, 2Leipzig/DE, 3São Paulo/BR

21.1.4 Preoperative Outcome Scores Are Predictive Of Achieving A MCID After Treatment With Osteochondral Grafts In The Knee, Dean Wang, Brenda Chang, Francesca Coxe, Mollyann Pais, Thomas Wickiewicz, Russell Warren, Scott Rodeo, Riley Williams, New York/US


21.1.6 Confined Compression Cap Protects Chondrocytes During Impact Insertion of Osteochondral Grafts, Robert Sah, Jacob Rozich, Bolouere Wodu, Alborz Jelvani, Nasim Nia, Julie Yip, Jason Caffrey, William Bugbee, Albert Chen, La Jolla/US

21.1.7 Living Cartilage Allograft: A Novel Solution for Expanding a Precious, Limited Resource, Aaron Krych1, Mario Hevesi1, Janet Denbeigh1, Michelle Hagmeijer2, Koen Dijkstra3, Roeland Huitsing2, Carlo Paggi1, Zachary Resch1, Daniel BF Saris3, Andre Van Wijnen1, 1Rochester/US, 2Utrecht/NL

21.1.8 Bone Marrow Concentrate Does Not Improve Osseous Integration Of Osteochondral Allograft Transplantation In The Knee, Dean Wang, Kenneth Lin, Alissa Burge, Riley Williams, New York/US

21.1.9 Maintaining Chondrocyte Function in Human Articular Cartilage Allografts, Mark Eagle1, Marie Phelan1, Paul Rooney1, Richard Lomas1, Rachel Oldershaw1, Michael McNicholas2, 1Liverpool/GB, 2Aintree/GB

21.1.10 Modernizing Storage Conditions for Osteochondral Allograft: Time to Store at Physiologic Temperatures, Mario Hevesi1, Janet Denbeigh1, Carlo Paggi1, Zachary Resch1, Arvin Forghanian-Arani1, Daniel BF Saris1, 2, Aaron Krych1, Andre Van Wijnen1, 1Rochester/US, 2Utrecht/NL

Free Papers  Room: Almaty 3

11:15–12:45  Industry Satellite Symposia
20.1 Room: Samarkan
20.2 Room: Almaty 1
20.3 Room: Almaty 2
20.4 Room: Almaty 3

A detailed List and Individual Programmes of the Industry Symposia is available on page 58–61.

13:00–14:00  Industry Satellite Symposia
20.1 Room: Samarkan
20.2 Room: Almaty 1
20.3 Room: Almaty 2
20.4 Room: Almaty 3
21.2 Cells & Microfracture
Moderators: Alberto Gabbi/IT, Gunnar Knutsen/NO
Timing: 6 Min. Presentation and 3 Min. Discussion Time

21.2.1 Comparison of Microfracture Alone and Microfracture with BMAC Augmentation for Medial Unicompartmental Osteoarthritis, Eun-Kyoo Song, Jong Keun Seon, Gwangju/KR

21.2.2 Functional Results of 5 Years after Autologous Matrix-Induced Chondrogenesis (AMIC) for Talar Osteochondral Lesions, Oliver Gottschalk, Sebastian Altenberger, Markus Walther, Munich/DE

21.2.3 Comparison Between Patellofemoral Joint and Femoral Condyles Cartilage Lesions after Mesenchymal Stem Cells Implantation, Michael losisidis', Theofylaktos Kyriakidis', Efstathios Michalopoulos', Antonia Mptoudi', Mina Fylaktou', Akaterini Stavropoulos', Thessaloniki/GR, Brussels/BE, Athens/GR


21.2.5 Assessment Of Cartilage Growth After Biopsy Of Osteochondral Loose Bodies For Use In Autologous Chondrocyte Implantation, Brian Haus', Sean Robinson', Jonathan Kramer', Trevor Shelton', Jarrad Merriman', Sacramento/US, San Francisco/US

21.2.6 Long Term Results Using an Osteochondral Biomimetic Scaffold in Knee Isolated Osteochondral Defects, Massimo Berruto, Paolo Ferrua, Daniele Tradati, Alessio Maione, Stefano Pasqualotto, Martina Ricci, Eva Usellini, Milano/IT

21.2.7 Matrix-Induced Autologous Chondrocyte Implantation Addressing Focal Chondral Defect In Knee A Clinical Follow Up, Jing hua Fang, Xue song Dai, Jian yang Luo, Xin ning Yu, Wei Iang Shen, Miaofeng Zhang, Sunan Zhu, Hangzhou/CN

21.2.8 Cryopreserved Osteochondral Allograft, ProChondrix® CR Maintains Metabolically Active And Viable Cells, Anna-Laura Nelson', Carolyn Barrett', Ramasamy Sakthivel', Centennial/US, Denver/US


21.2.10 Arthroscopic Technique of Autologous Chondrocyte Implantation vs Microfracture to treat cartilage lesions in patella, Anell Olivos Meza, Francisco Perez Jimenez, Enrique Villalobos, Socorro Cortes Gonzalez, arturo Almazan, Francisco Cruz Lopez, Monica Saldaña Garcia, Cristina Nieto Gomez, Clemente Ibarra, Mexico City/MX
21.4 Bioprinting & Scaffolds

Moderators: Jos Malda/NL, Claudia Di Bella/AU
Timing: 6 Min. Presentation and 3 Min. Discussion Time

21.4.1 Co-Axial 3D Bio-Printing Of Stem Cells For The Regeneration Of Articular Cartilage, Claudia Di Bella1, Serena Duch5, Carmine Onofrillo1, Cathal O’Connell2, Peter Choong1, Gordon Wallace3, 1Fitzroy/AU, 2Melbourne/AU, 3Wollongong/AU

21.4.2 RNA Sequencing Analysis of a Cartilage Defect in Rabbit Repaired with a Biomimetic Scaffold, Guillermo Bauza Mayol1, 2, Francesca Taraballi2, Xin Wang1, Ajun Zhang1, Lewis Francis1, Patrick C. McCulloch2, Ennio Tasciotti1, 2, 1Swansea/GB, 2Houston/US

21.4.3 Converging of Melt Electrospinning Writing and Extrusion Based Bioprinting for Cartilage Tissue Regeneration Mylene De Ruijter1, Alexandre Ribeiro1, Inge Dokter1, Miguel Castilho1, 2, Jos Malda1, 1Utrecht/NL, 2Eindhoven/NL

21.4.4 Cartilage Graft Development Using 3D Printing and Stem Cells: A Preclinical Model in Sheep, Carlos Landa1, 2, Erick Hazan, Anell Olivos Meza1, Phaedra Suriel Silva Bermudez, Brenda Olivos Diaz1, Victor Cardenas Soria1, Cristina Velasquillo1, Clemente Ibarra, Mexico City/MX

21.4.5 Reinforcing Hydrogel-To-Ceramic Interface in Engineered Osteochondral Grafts by Converging Biofabrication Techniques, Paweena Diloksumpan1, Miguel Castilho1, Tina Vermonden1, Paul Rene Van Weeren1, Jos Malda1, Riccardo Levato1, Utrecht/NL

21.4.6 A Decellularized Auricular Cartilage Scaffold for Articular Cartilage Repair Recellularized by Removing Elastin Fibres, Roberto Narcisi1, Johannes Lehmann1, Cornelia Schneider1, J.L.M. Koekoert1, Kathryn S. Stok2, Susanne Wolbank2, Heinz Redl1, Derk Ten Berge1, Sylvia Nürnberg2, Gerjo Van Osch1, 1Rotterdam/NL, 2Vienna/AT, 3Parkville Victoria/AU

21.4.7 Cartilage by 3D Bioprinting of Induced Pluripotent Stem Cells (iPSC) With Aggrecan Reporter Gene Insert Anders Lindahl1, Stina Simonsson, Rocío Castro Viñuelas1, Alma Forsman, Gothenburg/SE

21.4.8 BioAirbrush for Arthroscopic Cartilage Repair – A Preclinical Instrument Feasibility Study in 3D Cartilage Defect Models, Koen Dijkstra1, Roeland Huizing1, Bastiaan Terhaard1, Daniel Sieber1, Lucienne Vonk1, Daniel BF Saris1, 2, 3, 1Utrecht/NL, 2Rochester/US, 3Erschede/NL

21.4.9 Functional Tissue Engineered Micro-Tissue Combined With 3D Printing For Articular Cartilage Regeneration Heyong Yin1, 2, Xin Sun1, Yu Wang1, Shibi Lu1, Jiang Peng1, 1Munich/DE, 2Beijing/CN

21.4.10 3D-Printed Poly(-caprolactone) Scaffold Augmented With Mesenchymal Stem Cells For Total Meniscal Substitution, Zhang Zheng-Zheng, Jiakuo Yu, Beijing/CN
17:00–17:30  Coffee Break/Intermission/Exhibition

17:30–18:30  Plenary Session  Room: Almaty 1

23.0  General Assembly (For Members Only)
Moderators:  Kenneth Zaslav/US, Alberto Gobbi/IT

It is vitally important that all present ICRS members attend the General Assembly and take part in decision-making and approval processes. Your presence is essential for the formal progress of our society’s business! Thank you for your presence!!!

19:30–23:00  Tiki Pool Area  Sheraton Level 8

Chinese Farewell Night
Great entertainment for everyone! Join us for a magic evening in relaxed style with mouth-watering Asian cuisine, drinks and assist amazing local cultural presentations. Let you be immersed in a magical atmosphere together with your colleagues from all around the world. Here, you can look forward to delicious specialties, regional beverages and enjoy typical music and traditional show acts. (Ticket € 80.00 Euros)

08:00–09:00  Plenary Session  Room: Samarkhan

24.0  Outcomes Research in Cartilage, Registries & Large Data
Moderators:  Christoph Erggelet/CH, Cale Jacobs/US

24.0.1 The ICRS Patient Registry
Leela Biant, Edinburgh/GB

24.0.2 How Registries & Cohort Studies Influence Outcome & Decision Making
Stefan Lohmander, Lund/SE

24.0.3 Where does Cartilage Repair & Joint Preservation fit into Osteoarthritis Treatment Algorithms?
William Bugbee, La Jolla/US

09:00–10:00  Plenary Session  Room: Samarkhan

25.0  Cartilage Repair - Mini Battlefield
Moderators:  Kenneth Zaslav/US, Tim Spalding/GB

25.1.1 Early OA: Metal vs. Not (Pro Metal)
William Bugbee, La Jolla/US

25.1.2 The Case for Biologic Treatment for Early Osteoarthritis
Jack Farr, Greenwood/US

25.2.1 Repair with Cells
Christoph Erggelet, Zürich/CH

25.2.2 Repair without Cells
Giuseppe Filardo, Andrea Sessa, Luca Andriolo, Francesco Perdisa, Alessandro Di Martino, Bologna/IT

25.3.1 Debride vs. Transplant
Gunnar Knutsen, Tromsø/NO

25.3.2 Debride vs. Transplant
Leela Biant, Edinburgh/GB

25.4.1 Human Research vs Mouse Research (MR)
Linda Sandell, St. Louis/US

25.4.2 Human Research vs. Mouse Research (HC)
Robert Sah, La Jolla/US

25.5.1 Cartilage vs. Bone (Cartilage)
Daniel Grande, Manhasset/US

25.5.2 Cartilage vs. Bone (Bone)
Henning Madry, Homburg/DE

10:00–10:30  Coffee Break/Intermission/Exhibition
26.1 Cartilage Regeneration

Moderators: Rebekah Decker/US, Linda Sandell/US
Timing: 6 Min. Presentation and 3 Min. Discussion Time

26.1.1 Novel TNFR2 Signaling In Cartilage Regeneration
Wenyu Fu, Young-su Yi, Jyoti Joshi Mundra, Aubry-anna Hettinghouse, Chuanju Liu, New York/US

26.1.2 CCL21/CCR7 Axis Regulating Juvenile Cartilage Repair Can Enhance Cartilage Healing In Adult, Zenta Joutoku, tomohiro Onodera, Daisuke Momma, Masato-take Matsuoka, Rikiya Baba, Kazutoshi Hontani, Shinji Matsubara, Kentaro Homan, Ryosuke Hishimura, Nori-masa lwasaki, Sapporo/JP

26.1.3 Characterization And Application Of Size-Sorted Zonal Chondrocytes For Articular Cartilage Regeneration, Zheng Yang1, Lu Yin1, Yingnan Wu1, Vinitha Denslin1, Ching Ann Tee1, Jongyoon Han2, Eng Hin Lee1, 1'Singapore/SG, 2'Ma/US

26.1.4 New Transcriptional Insight Into Human Skeletogenesis, Lineage Specification and Adult Cartilage Heterogeneity, Gabriel Ferguson, Los Angeles/US

26.1.5 Chondro-Protective Mechanism of Statin
Mengxi Ly, Yifu Zhou, Tiance Zhang, Liyun Wang, X. Lucas Lu, Newark/US

26.1.6 Stimulation Of A Calcified Cartilage Connecting Zone By GDF-5-Augmented Fibrin In A Novel Layered Ectopic In Vivo Model, Solvig Diederichs, Yvonne Renz, Wiltrud Richter, Heidelberg/DE

26.1.7 Blocking TGF-β1 With Oral Losartan Administration Improves Microfracture-Mediated Cartilage Repair, Hajime Utsunomiya1, Xueqin Gao2, Gilberto Nakama1, Sarah Amra1, Zhenhan Deng1, Haizi Cheng2, Sudsheer Ravuri, Julia Goldman2, Tamara Alliston3, William G Rodkey1, Walter Lowe4, Marc Philippin1, Johnny Huard4, 1Vail/US, 2Houston/US, 3San Francisco/US, 4Houston Tx/US

26.1.8 In Vivo Repair Of Full-Thickness Cartilage Defect With Human iPSC-Derived Mesenchymal Progenitor Cells In A Rabbit Model
Qing Jiang, Xingquan Xu, Dongquan Shi, Nanjing/CN

26.1.9 Suppressing Cartilage Catabolism and Degenera-tion by a Novel Small Molecule Modulator of gp130 Receptor, Denis Evseenko, Ruzanna Shkhyan, Ben Van Handel, Los Angeles/US

26.2 Proteomics / Biomarkers / Epigenetics

Moderators: Yves Henrotin/BE, Rachel Frank/US
Timing: 6 Min. Presentation and 3 Min. Discussion Time

26.2.1 Epigenetic Regulation of DKK-1 and sFRP-1, an Inhibitor Protein of WNT Signaling, In Osteoarthritis, Hyuksoo Han, Hyun Cheol Bae, Myung Chul Lee, Seoul/KR

26.2.2 A Multi-faceted Mechanism of Mesenchymal Stem Cell Exosome In Cartilage Repair, Keng Lin Francis Wong, Shipin Zhang, Shang Jiunn Chua, Ruenn Chai Lai, Sai Kiang Lim, James HP Hui, Eng Hin Lee, Wei Seong Toh, Singapore/SG

26.2.3 Delay The OA Progression By Active Epigenetic Modula-tion, Elena Rodriguez Itigo1, Paloma Martinez2, Juan Manuel Lopez-Alcorocho2, Isabel Guillen1, Chengzheng Liang2, Alejandro Ocampo2, Pradeep Reddy2, Hsin-Kai Liao2, Aida Platero2, Wai Long Tam2, Marta Guillen1, Chiara Marta Fresa1, Isabel Guillen Guillen2, Mariana Morales Valencia2, Tomas Fernandez1, Juan Carlos Izpisua2, Pedro Guillen1, 1'Madrid/ES, 2La Jolla/US

26.2.4 SAA4 Is A Potential Biomarker Of Osteoarthritis, Qiang Xiao, Lei Wei, Ziqiang Yang, Zhiqiang Zhang, Xiaochun Wei, Taiyuan/CN

26.2.5 DNA methylation profiling in chondrocyte dedifferentia-tion and its implication for cell-based cartilage therapy
Li Duan1, xiao Xu1, Wei Lu1, Daping Wang1, Yujie Li-ang2, 1Shenzhen/CN, 2Hongkong/ CN

26.2.6 Patients with Poor Outcomes 3 Years After ACL Recon-struction had Elevated Biomarker Concentrations on the Day of Surgery, Christian Lattermann1, Caitlin Whale Conley1, Janet Huebner1, Ching-heng Chou1, Kurt Spindler1, Virginia Kraus2, Cale Jacobs3, Lexington/US, 4Dur-ham/US, 5Cleveland/US

26.2.7 Glucosamine: A New Biomarker Of The Severity Of Osteoarthritis, Yves Henrotin1, Catherine Legrand3, Usman Ahmed2, Atta Anwar2, Kashif Rajpoot1, Sababha Pasha3, Rose K. Davidson4, Ian M. Clark5, Paul J. Thornal-ley6, Cécile Lambert1, Naila Rabban7, 1Liège/BE, 2Coventry/GB, 3Birmingham/GB, 4Norwich/GB

26.2.8 Mesenchymal Stem Cell Exosomes Reduce Pain And Degeneration In Rats With Surgically-Induced Knee Osteoarthritis, Yedan Wang, Shipin Zhang, Krysteen Ye-Wen Teo, Xiafei Ren, Afzah Hassan, Ruenn Chai Lai, Sai Kiang Lim, James HP Hui, Wei Seong Toh, Singapore/SG

26.2.9 Proteomic Analysis Of Synovial Fluid In Osteoarthritis Using SWATHMass Spectrometry, Weixiong Liao, Zhongli Li, Beijing/CN

26.2.10 Phenotype Dissection And Manipulation Of Primary Chondrocytes During Dedifferentiation, Yishan Chen, HongWei Ouyang, Hangzhou/CN
10:30–12:00 Free Papers Room: Almaty 1

26.4 Scaffold & Others (ICRS China Chapter)
Moderators: Weiming Wang/Quanxi Guo/CN
Timing: 6 Min. Presentation and 3 Min. Discussion Time

26.4.1 A Functional Biphasic Biomaterial Homing Mesenchymal Stem Cells For In Vivo Cartilage Regeneration
Yingfang Ao, Hongjie Huang, Beijing/CN

26.4.2 Gene-Based Association Analysis Identified Novel Genes Associated With Developmental Dysplasia Of The Hip,
Wenjin Yan, Qing Jiang, Nanjing/CN

26.4.3 Surface Modification on PCL Mesh and Human Decalcified Bone Scaffold with SMSCs-Affinity Peptide,
Zhenxing Shao, Beijing/CN

26.4.4 Kartogenin-Incorporated Multifunctional Ultra-Small Hyaluronan-Ceria Nanoparticles used for Osteoarthritis Treatment
Wei-Nan Zeng, Liu Yang, Chongqing/CN

26.4.5 Diabetes Mellitus Accelerates Progression of Osteoarthritis in Streptozotocin-induced Diabetic Mice
huajun Wang, xiaofei Zheng, simin Luo, zhengang Zha, qiushi Wang, Guangzhou/CN

26.4.6 Circular RNA Regulates MMP13 Expression By Functioning As A miR-136‘Sponge’ In Human Cartilage Degradation,
Qiang Liu, Yingfang Ao, Beijing/CN

26.4.7 Adipose-Derived Stromal Vascular Fraction By Mechanical Separation For Repairing Cartilage Defects,
Peng Chen1, 2, Xinglei Sun3, Xiang Gao1, Angyang Hou2, He Tang2, Jiang Peng3, Xu Li1, 1Shenyang/ CN, 2Beijing/CN, 3Weifang/CN

26.4.8 Multi-Generation Genetic Effects Of Osteoarthritis-Like Phenotype In Female Offspring Induced By Dexamethasone Exposure
Jun Qin, Zhe Zhao, Xu Yang, Hui Wang, Liaobin Chen, Wuhan City/CN

26.4.9 The Effect Of Low-Energy Shock Waves In Microfracture Holes In The Repair Of Cartilage Defects In A Rabbit Model
Zhongli Li1, Qi Wang2, 1Beijing/CN, 2Tianjin/CN

26.4.10 Histologic Study the Transition of a Notochordal to a Fibrocartilaginous Nucleus Pulposus in Cervical Disc,
Weiming Wang, Dalian/CN

26.3 PRP & Bone Marrow
Moderators: Giuseppe Filardo/IT, Daniel BF Saris/NL
Timing: 6 Min. Presentation and 3 Min. Discussion Time

26.3.1 Adipose Derived Stem Cells for the Treatment of Knee Osteoarthritis: Expanded, Digested by Enzymes or Micro-fragmented?, Giuseppe Filardo1, Alice Roffi2, Francesco Perdisa3, Giovanna Desando1, Milena Fini4, Brunella Grigolo2, Gianluca Giavarelli1, Francesca Salamanna1, Matilde Tschoni1, Elizaveta Kon2, 1Bologna/IT, 2Milano/IT

26.3.2 Platelet-Rich Plasma (PRP) is not a Suitable Carrier for Cartilage Cell Therapies, Koen Dijkstra1, Margot Rikkers1, Daniel BF Saris1,2,3, Lucienne Vonk1, 1Utrecht/NL, 2Rochester/US, 3 Enschede/NL

26.3.3 A Review of Point-Of-Care Devices to Concentrate Bone Marrow for the Treatment of OA and Focal Cartilage Lesions, Florian Goul1,2, Heinz Hoeleneck1, William Bugbee1, Darryl D’Ulla1, 1La Jolla/US, 2Leipzig/DE

26.3.4 Purification of Platelet-Rich Plasma with Peptide-Functionalized Microspheres, João Crispim1, Pascal Jonkheijm1, Daniel BF Saris1, 1 Enschede/NL, 2Utrecht/NL

26.3.5 The Effect of Fibrin Glue on Scaffold-Induced Osteochondral Regeneration, Francesco Perdisa1, Elizaveta Kon1, Alessandro Di Martino1, Milena Fini4, Gianluca Giavarelli1, Anna Paola Parrilli1, Francesca Salamanna1, Giuseppe Filardo1, 1Bologna/IT, 2Milano/IT

26.3.6 Different Production Technology Of Blood Derived Products Influences Differentiation Pathway Of Various Cell Populations, Andrea De Luna1, Olga Kuten, Rene Weiss, Zsombor Lacza, Viktoria Weber, Stefan Nehrer, Krems/AT

26.3.7 Variability of Growth Factors and Catabolic Cytokines in Platelet Rich Plasma in Patients with Osteoarthritis Yong-Beom Park1, Chul-Won Ha2, 1Seoul/KR, 2Seoul/KP

26.3.8 Tuning the Immune-Modulatory Properties of MSCs with Different Substrates, Francesca Taraballi1, Bruna Corradetti2, Guillermo Bauza2, Silvia Minardi2, Patrick C. McCulloch1, Ennio Tasciotti1, 1 Houston/US, 2Ancona/IT, 3 Chicago/US

26.3.9 Efficacy Of Subchondroplasty In The Treatment Of Bone Marrow Edema Of The Knee, Long Term Results Andrew Levy, Millburn/US

26.3.10 Treatment of Meniscal Tears and Early Osteoarthritis By PRP And PRP-HA Philippe Adam, Toulouse/FR

26.2.11 Human Allogeneic Platelet Rich Plasma as a Biological Scaffold for Articular Chondroprogenitors in Cartilage Healing, Elizabeth Vinod, Deepak Vinod Francis, Solomon Sathishkumar, Boopalan Ramasamy, Vellore/IN
12:00–13:00 Special Session Room: Almaty 3

27.1 Clinical Trials
Moderators: Christian Lattermann/US, Stefan Marlovits/AT

27.1.1 AMIC in the Knee: Open vs. Arthroscopic?
Justus Gille, Luebeck/DE

27.1.2 Treatment of Articular Cartilage Lesions with GelnirnC Demonstrates Long-Term Sustainable Symptom Improvement: A 3-Year Follow-Up
Ron Arbel, Tel Aviv/IL

27.1.3 Radiographic Outcomes were Concordant with Pain and Function Response: Post-hoc Analysis from a Phase 2 Study of SM04690, a WNT Pathway Inhibitor for Knee Osteoarthritis Treatment
Jeymi Tambiah, Christopher Swearingen, Sarah Kennedy, San Diego/US

27.1.4 One Year Radiographic and Clinical Outcomes of Subchondroplasty for Treatment of Symptomatic Bone Marrow Lesions of the Knee
Linda Korthout¹, C Hajnik², S Akhavan³, D J Wyland⁴, S B Cohen⁵, L M Jazrawi⁶, T Youm⁶, G J Loren⁷, Jack Farr⁷, M R Rahme¹, Patrick Reischling¹, ¹Warsaw/US, ²Encinitas/US, ³Pittsburgh/US, ⁴Greenville/US, ⁵Philadelphia/US, ⁶New York/US, ⁷Indianapolis/US

12:00–13:00 Special Session Room: Almaty 1

27.3 Bioengineering
Moderators: Jos Malda/NL, Darryl D’Llima/US

27.3.1 Bioengineering of the Meniscus for Repair, Regeneration & Replacement
Darryl D’Llima, La Jolla/US

27.3.2 Basic Research & Clinical Application of Bionic Cartilage Scaffold Based on Composition and Structure
Quanyi Guo, Beijing/CN

27.3.3 Tissue Engineered Intervertebral Disc Replacement: The Next Frontier
Rita Kandel¹, Shu Qui Li¹, Mark Hurtig², Paul Santerre¹, ¹Toronto/CA, ²Guelph/CA

13:00 End of Meeting

13:15 ICRS Society Meeting ICRS Meeting Room 1
ICRS EB/GB Meeting (New General Board)
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ICRS 2018 Macau, China | AlloSource Industry Satellite Symposia | Wednesday, 11 April 2018 | 13:00–14:00, Almaty 3 Room

Vishal Mehta, MD
ORTHOPEDIC SURGEON
Fox Valley Orthopedics
Geneva, IL, USA
ProChondrix® 24-Month Clinical Experience in the knee

Peter Stevens, PhD
AlloSource
Centennial, CO, USA
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Tuesday, April 10, 2018

12:30–13:00  Industry Symposium  Room: Almaty 1

12.1  Regen Lab Symposium - Cellular Matrix
Moderator: Bert Mandelbaum/US

12.1.1  Innovative Treatment for Knee OA
Bert Mandelbaum, Santa Monica/US

12.1.3  Indications of Cellular Matrix (PRP-HA) for Joint Disorders
Philippe Adam, Toulouse/FR

12:30–13:30  Industry Symposium  Room: Almaty 2

12.3  Geistlich - What’s New with AMIC®?
Moderator: Roland Jakob/CH

12.3.1  AMIC® Arthroscopic in the Knee
Justus Gille, Luebeck/DE

12.3.2  LIPO-AMIC®
Fabio Sciarretta, Rome/IT

12:30–13:30  Industry Symposium  Room: Almaty 3

12.4  Anika Therapeutics- Hyalofast One-Step Procedure: Best Practice & New Evidence in Cartilage Repair
Moderator: Alberto Gobbi/IT

12.4.1  Hyalofast Long-Term Clinical Outcomes in the Treatment of Full-Thickness Cartilage Lesions of the Knee
Alberto W. Gobbi1, Graeme Whyte2, Norimasa Nakamura3, 1Milano/IT, 2New York/US, 3Osaka/JP

12.4.2  Hyalofast Arthroscopic Implantation in the Knee: Pitfalls, Pearls and MRI Based Rehab Protocol
Boguslaw Sadlik, Bielsko-Biala/PL

12.4.3  Hyalofast Arthroscopic Implantation in the Ankle:
Surgical Technique and Clinical Results
Stefan Nehrer, Krems/AT

13:00–13:30  Industry Symposium  Room: Almaty 1

12.5  OrthoCell - A Cost Effective, Personalized and Minimally Invasive Autologous Chondrocyte Implantation

12.5.1  Pre-Clinical and Clinical Validation of Customised Collagen Scaffold Based Autologous Chondrocyte Implantation
Minghao Zheng, Crawley/AU

12.5.2  Mapping of Articular Cartilage Defects in OA Patients by Autologous Chondrocyte Implantation – Can it Delay Total Knee Replacement?
David Wood, Perth/AU
Wednesday, April 11, 2018

13:00–14:00  Industry Symposium  Room: Samarkan

20.1  **Konee - Collagen-Induced Cartilage Regeneration Technique & Clinical Research**
Moderator: Yingfang Ao/CN

20.1.1  **Basic Science for Autologous Collagen Induced Chondrogenesis**
Seok Jung Kim¹, Ananthram A. Shetty², Saif Ahmed³, Siegfried Trattnig³, SA Kim¹, ¹Seoul/KR, ²Chatham Maritime/GB, ³Wien/AT

20.1.2  **Clinical Research for ACIC & Case Demonstration**
(Autologous Collagen Induced Chondrogenesis)
Ananthram A. Shetty, Chatham Maritime/GB

13:00–14:00  Industry Symposium  Room: Almaty 1

20.2  **Zimmer - Biomet Symposium**
Moderators: Jennifer Woodell-May/US

20.2.1  **The Science Behind nSTRIDE APS**
Jennifer Woodell-May, Warsaw/US

20.2.2  **Developing second generation biologics**
Elizaveta Kon, Milano/IT

20.2.3  **The Treatment of Chronic, Painful Subchondral BML Defects Using The Subchondroplasty Procedure.**
Amon Ferry, Phoenix/US

13:00–14:00  Industry Symposium  Room: Almaty 2

20.3  **Smith & Nephew - Foundations & Architecture: Restoring Cartilage**

20.3.1  **Cartilage Regeneration with CARGEL Bioscaffold**
Dave Lee, Singapore/SG

20.3.2  **Cartilage Treatment with the WEREWOLF COBLATION System**
Patrick C. McCulloch, Houston/US

13:00–14:00  Industry Symposium  Room: Almaty 3

20.4  **AlloSource®, ProChondrix® 24-Month Data and Cell Viability**

20.4.1  **ProChondrix 24-Month Clinical Report**
Vishal M. Mehta, Naperville/US

20.4.2  **ProChondrix CR, Post-Cryopreservation Cell Viability & Basic Science**
Peter Stevens, Centennial, USA
Monday, April 09 from 15:15–16:15
Tuesday, April 10 from 10:45–12:30

Posters marked with a traditional wall poster besides their electronic poster submission.

P01
Effect Of Chondrogenic Pre-Differentiation Of Human Umbilical Cord Blood-Derived MSCs On Cartilage Repair
Yong-Beom Park1, Chul-Won Ha2, 1Seoul/KR, 2Seoul/KP

P02
Radial Shock Wave Treated MSCs Seeded PLGA Scaffold Is Benefit For Cartilage Repair
Hao Zhang, Zhongli Li, Beijing/CN

P03
Injectable Chitosan Hydrogel For Cartilage Repair
Feiyan Zhu, Jianyi Xiong, Daping Wang, Shenzhen/CN

P04
Macroscopic, MRI And CT Diagnostics Of Cartilage Defect Healing By Modified PHB-Chitosan Scaffolds In The Sheep Model
Marek Tomco, Martin Boldizar, René Hako, Jan Danko, Ladislav Medvecky, Eva Petrovova, Kosice/SK

P05
Animal Model Establishment Of Acetabular Labrum Reconstruction With Autogenous Tendon In Miniature Pigs
Yuanyuan Shi, Linxin Chen, Jianquan Wang, Yingfang Ao, Beijing/CN

P06
Intraarticular Injection of Allogenic Chondroprogenitors versus Sodium Hyaluronate for Knee Osteoarthritis in Rabbits.
Elizabeth Vinoth1, Jithu V James1, Sabareeswaran Arumugam2, George Thomas3, Solomon Sathishkumar1, Ozlem Ozbey4, Boopali Ramasamy1, 1Vellore/IN, 2Thiruvananthapuram/IN, 3Chennai/IN, 4Turkey/TR

P07
Can cell therapy with umbilical cord mesenchymal stromal cells influence osteoarthritis progression in a murine model?
Jade Perry1,2, Claire Mennan1,3, Helen McCarthy1,3, Rob Van ‘t Hoof1, George Bou-Gharios4, Peter Milner4, Sally Roberts1,3, 1Stoke-On-Trent/GB, 2Newcastle/GB, 3Oswestry/GB, 4Liverpool/GB

P08
The advantages of converting open surgical procedures to arthroscopy in sheep
Mark Hurtig1, Erin Cummins1, Micheal Scott2, Emma Lamoure3, 1Guelph/CA, 2Calgary/CA

P09
Repair of knee chondral defect of rabbit with PVA/CS porous hydrogel loaded with bone marrow stromal cell
Liangquan Peng, Shenzhen/CN

P10
The high-fat diet/streptozotocin-induced type 2 diabetic rat model: an evaluation of cartilage and tendon tissues
Sik Loo Tan, Mun-Peak Nyon, Hong-Hao Chan, Savatey Hak, Chee-Ken Chan, Tunku Kamarul, Kuala Lumpur/MY

P11
Biomechanical Features Of Anterior Cruciate Ligament Deficient Knee With Or Without Meniscus Injury During Walking
Huijuan Shi, Hongshi Huang, Yuanyuan Yu, Zixuan Liang, Yingfang Ao, Beijing/CN

P12
MicroRNA-1 Regulates Chondrocyte Hypertrophy By Targeting IHH In Mouse Osteoarthritic Cartilage
Chen Taoyu, Pengcui Li, Xiaochun Wei, Lei Wei, Taiyuan/CN

P13
Prediction Of The Spinal Loads During Different Activities After Two Simulated Interventions For Lumbar Disc Herniation
Shengzheng Kuai, Wenyu Zhou, Shenzhen/CN

P14
Effects of Osteochondral Defect Size on Medial Femoral Condyle Contact Pressure During Simulated Gait
Jason Koh1, Yupeng Ren1, Todd Zimmerman1, Savan Patel1, Dali Xu1, Li-Qun Zhang2, 1Evanston/US, 2Baltimore/US

P15
Are There Trochlear Chondorcytes Morpho-Functional Differences In Patellofemoral Pain Syndrome? Case-Control Study
Andrea Fabio Manunta, Francesco Mattia Uboldi, Gianfilippo Caggiari, Giacomo Giachetti, Gianfranco Pintus, Sassari/IT
Do co-culture of articular chondrocytes and chondroprogenitors enhance chondrogenic phenotype and maintain stemness?
Elizabeth Vinod, Deepak Francis, Solomon Sathishkumar, Boopalan Ramasamy, Vellore/IN

Coculture of chondrocytes and MSCs with CS/HA nanoparticles promotes chondrogenic differentiation
Xiongbo Song, Tao Li, Shu Huang, Cheng Chen, Liu Yang, Chongqing/CN

Effect of hyaluronan supplemented culture media on human mesenchymal stem cell chondrogenesis
Martin J. Stoddart, Graziana Monaco, Mauro Alini, Davos Platz/CH

Development of a 3D osteoarthritic knee joint model
Zsombor Lacza¹, Dorottya Kardos², Bence Marschall², István Hornyák³, Melinda Simon³, Adél Hisenkamp³, Olga Kuten³, Stefan Nehrer³, ¹Krems An Der Donau/AT, ²Budapest/HU, ³Krems/AT

In Situ Forming Thermosensitive Hydrogel Combined With ACM For Cartilage Defect Treatment.
Chih-Hung Chang¹, ², Yu-Chun Chen¹, ², Yi-Shan Shen¹, ³, Feng-Huei Lin³, ¹New Taipei City/TW, ²Taoyuan City/TW, ³Taipei City/TW

Poly (Glycerol Sebacate)-Poly (ε-Caprolactone) Controlled Architecture Scaffolds For Cartilage Repair
Pedro Morouço¹, Diana Reis¹, Sara Biscaia¹, Cândida Malça², Ana Veloso², ¹Marinha Grande/PT, ²Coimbra/PT

Automated Detection of Chondrocytes for Cartilage Histopathology
Haoran Qiu, Leening Liu, Felix Hsu, Robert Sah, La Jolla/US

Silencing Of Indian Hedgehog In The Treatment Of Early PTOA Induced By Anterior Cruciate Ligament Injury
Pengcui Li, Lei Wei, Xiaochun Wei, Taiyuan/CN

Involvement Of Chloride Channels In Estrogen-Regulated Bone Formation Processes
Daping Wang, Zhiqin Deng, Li Duan, Shenzhen/CN

Synovium-Derived Mesenchymal Stem Cells In Rheumatoid Arthritis
Zhang Zheng-Zheng, Weiping Li, Bin Song, Guangzhou/CN

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Anika Therapeutics is a global medical technology company, and a pioneer in developing therapeutic products for tissue protection, healing and repair. Our products are based on hyaluronic acid (HA), a naturally occurring polymer found throughout the body. HA enhances joint function and coats, protects, cushions and lubricates soft tissues. With more than 20 years of experience in the use of HA technology, Anika is recognized worldwide as a provider of premium HA products that are effective, safe and long-lasting. We are committed to delivering innovative medical solutions that help patients feel better faster, look and feel younger, and remain active.

Arthrex, Inc. is a global leader in new product development and medical education in orthopedics. With a corporate mission of helping surgeons treat their patients better, Arthrex has pioneered the field of arthroscopy and developed more than 9,500 innovative products and surgical procedures to advance minimally invasive orthopedics worldwide. Arthrex is a privately-held company, committed to delivering uncompromising quality to the healthcare professionals who use its products and the millions of patients whose lives are impacted. For more information, visit www.Arthrex.com

Biomomentum manufactures and commercializes testing devices for the mechanical characterization of biomaterials and cartilage. The Mach-1™ multiaxial mechanical tester is the only all-in-one device designed for compression, tension, shear, friction, torsion and indentation mapping. The Mach-1™ is now used in many university labs and is deemed an excellent educational tool for students. Biomomentum also offers a full-service approach to biomechanical testing. In addition to performing highly controlled tests using a state-of-the-art technology, its expert team adheres to effective Standard Operating Procedures, develops reliable testing protocols, and delivers accurate data analysis reports in compliance with Good Laboratory Practice.
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Geistlich Surgery is a business unit of Geistlich Pharma AG, which is headquartered in Switzerland. Geistlich is a leader in the field of regenerative orthopedics and was among the first companies to apply collagen for medical use in the 1990s. The company applied its extensive knowledge of collagen and its biocompatibility to develop the first collagen membrane, the Chondro-Gide®, which can be used in combination with different established approaches to cartilage repair. Chondro-Gide® is the original membrane utilized in the Autologous Matrix-Induced Chondrogenesis (AMIC®) procedure and now has over 10 years of clinical history.

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Histogenics is a leader in the development of restorative cell therapies that may offer rapid-onset pain relief and restored function. Our lead investigational product, NeoCart®, is designed to rebuild a patient’s own knee cartilage to treat pain at the source and potentially prevent a patient’s progression to osteoarthritis. NeoCart® is intended to perform like articular hyaline cartilage at the time of treatment, and as a result, may provide patients with more rapid pain relief and accelerated recovery as compared to the current standard of care.

Innovative Cellular Therapeutics (ICT)
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Founded in August 2009, Innovative Cellular Therapeutics (ICTTM) is positioned to become a global leader in cell therapy and committed to improving human health through rigorous scientific & technological innovation. In the field of cell therapy, stem cells and gene editing, ICTTM has reached international advanced level and has acquired more than 30 Chinese and international patents. The company is now recognized as one of the leading players in CART cell therapy. ICTTM provides pharmaceutical research and development in the pharmaceutical and biotechnology fields.

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JRF Ortho specializes in providing orthopedic surgeons with the highest viability, most widely available cartilage solutions in the industry. Our goal is to provide innovative solutions for allograft joint repair to orthopedic surgeons who specialize in helping patients regain movement and improve their quality of life; thus, JRF Ortho is redefining the standard for allograft joint repair and maximizing the gift of donation. Our unique member relationship with AlloSource® and Community Tissue Services® (CTS) enables us to offer the largest selection of specialized high-viability fresh osteochondral grafts, tendons and menisci in the industry.

Konee Co, Ltd
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Konee Co, Ltd (“Konee” for short) is a high-tech enterprise which incorporates research & development, product registration, production and marketing of orthopedics medical device. Konee is dedicated to provide world leading regenerative technologies, products and services. The products and services that Konee mainly provides are orthopedics medical device, such as orthopedics surgical instruments, orthopedics implants and minimally invasive orthopedics medical products, etc. At present the main products of Konee are orthopedics medical devices that are used to repair cartilage damage. Konee has a number of patent technologies in the field of cartilage regeneration.

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medi GmbH & Co. KG in Germany is one of the world’s leading manufacturers of medical aids. medi supplies the following products: medical compression stockings for treatment of venous disorders (i.e. varicose veins, DVT, etc.); antiembolism stockings for thrombosis prophylaxis in hospitals; lymphoedema sleeves and stockings; wound care products; orthopaedic products: braces and supports; orthopaedic insoles; compression sport socks. Most of the products are made in Germany and are certificated with ISO 9010. For further information please visit our website www.medi.de/en.
ON Foundation
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ON, the orthoregeneration network is an independent international foundation in the field of orthopedic tissue regeneration driving the development and understanding of new treatment strategies for the well-being of the patient. The ON FOUNDATION sets quality standards, spreads unbiased knowledge about orthoregeneration and links young professionals, experts and academic organizations all over the world. Together we build a strong network and guarantee innovation.

We believe that research is the engine of development and that linking and educating passionate young professionals is the way to advance the field of orthoregeneration significantly.

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Orthocell is a regenerative medicine company that has developed an important new class of collagen medical devices, autologous cellular therapies and bioactive molecules/growth factors. Orthocell has successfully developed:

• Ortho-ACI™ is a 3rd generation therapy for the regeneration of human cartilage. Ortho-ACI™ is the gold standard intervention for treating symptomatic defects of the articulating cartilage of the joints.
• Celgro™ scaffold is a unique collagen scaffold that is biocompatible, bio-absorbable and biomechanically sound, allowing for multiple uses (cartilage repair and soft tissue reconstruction) either on its own or in combination with cells or growth factors.
• Ortho-ATI™ for the regeneration of human tendon in patients with tendinopathy who have failed to respond to conservative therapies such as physiotherapy and corticosteroid injection. This is a breakthrough regenerative therapy that has multiple tendon applications.

Orthocell holds a license from the TGA to manufacture Ortho-ATI™ and Ortho-ACI™ with Ortho-ACI™ recently being included on the Australian Registry of Therapeutic Goods (ARTG). Orthocell is accredited under ISO13485 for the manufacture of collagen medical devices including CelGro™. Orthocell has received a CE Mark for CelGro™ for guided bone regeneration and soft tissue repair.

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Össur prides itself in continuously pushing the boundaries to create some of the most effective, non-invasive mobility solutions on the market. We are technology pioneers and spirited advocates of “Life Without Limitations”, persistent in our mission to improve people’s mobility and quality of life. Among our scientifically proven and award-winning designs are Unloader® osteoarthritis (OA) knee braces and the Rebound® PCL brace, which is one of Össur’s Injury Solutions products that carry the prestigious Functional Healing® seal of approval. Össur’s emphasis has always been on effective clinical outcomes, and we continue to maintain a powerful service ethic, aiming to respond to the diverse needs of our customers.

Regen Lab
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Regen Lab is a global leader in products for autologous regenerative medicine based on freshly prepared platelet rich plasma (platelet concentrate) from the patient’s own blood, used either alone or combined with hyaluronic acid or other fresh autologous cells from the patient’s fat or bone marrow. These freshly prepared autologous concentrates are safer and have longer lasting effects than traditional cell-therapy products. They accelerate healing and have proven efficacy in ageing management, wound care and musculoskeletal pathologies.

REV-MED
Revolutionary Medical Device Manufacturer for Regenerative Medicine Solutions
Email. ljh.revmed@gmail.com

• TriCeLL PRP kit – Platelet Rich Plasma Kit
• TriCeLL BMC kit - Bone Marrow Concentration Kit
• Hilthera 4.0 – High Intensity Laser Therapy

REV-MED is the manufacturer of the TriCell Biologic Separation & Concentration System. TriCell is designed to separate autologous peripheral blood or bone marrow into its essential elements. The TriCell triple chamber technology allows for accurate customized control over the biologic. The physician can easily specify and control the final concentration and cellular constellation to meet the therapeutic demand.
Smith & Nephew Inc.  
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Smith & Nephew is a global medical technology business dedicated to helping healthcare professionals improve people’s lives and prides itself on high standards of performance, innovation and trust. We have leadership positions in Orthopaedic Reconstruction, Advanced Wound Management, Sports Medicine, Trauma and Clinical Therapies. The Company has distribution channels, purchasing agents and buying entities in over 90 countries worldwide.  
http://global.smith-nephew.com/key-products/sports-medicine/bst-cargel/

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Swiss Alp Health is a leading health nutrition manufacturer with innovative and most complete formulations for the musculoskeletal system. We specialize in cartilage, ligaments, tendons, bones and muscles formulations. Our premium formulations are recommended by leading Swiss doctors and used by world class athletes. Come and join us at the booth no. 18

Zimmer Biomet Holdings, Inc.  
Booth 6
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About Zimmer Biomet: Founded in 1927 and headquartered in Warsaw, Indiana, Zimmer Biomet is a global leader in musculoskeletal healthcare. We design, manufacture and market orthopaedic reconstructive products; sports medicine, biologics, extremities and trauma products; office based technologies; spine, craniomaxillofacial and thoracic products; dental implants; and related surgical products. We collaborate with healthcare professionals around the globe to advance the pace of innovation. Our products and solutions help treat patients suffering from disorders of, or injuries to, bones, joints or supporting soft tissues. Together with healthcare professionals, we help millions of people live better lives.

Independent research revealed that customers feel JRF Ortho excels in timely fulfillment of fresh allograft orders, rating them a 9.6 out of 10.
The one-step procedure for the treatment of chondral and osteochondral lesions

Easy and fast to be applied via arthroscopy. Fixation is not required in most cases.

The only entirely hyaluronic acid-based scaffold supporting hyaline-like cartilage regeneration

Visit Anika at booth #16
MACI® (autologous cultured chondrocytes on porcine collagen membrane) is an autologous cellularized scaffold product that is indicated for the repair of single or multiple symptomatic, full-thickness cartilage defects of the adult knee, with or without bone involvement. MACI is intended for autologous use and must only be administered to the patient for whom it was manufactured. The implantation of MACI is to be performed via an arthroscopy to the knee joint under sterile conditions. The amount of MACI administered is dependent upon the size (surface area in cm²) of the cartilage defect.

**Dosage and Administration**

For autologous implantation only.
- Contact Vericel at 1-800-453-6948 or www.MACI.com regarding training materials for surgical implantation of MACI.
- The amount of MACI implanted depends on the size (surface area in cm²) of the cartilage defect.
- MACI should be trimmed to the size and shape of the defect and implanted with the cell-side down.

**Adverse Reactions**

The most frequently occurring adverse reactions (≥5%) reported for MACI were arthralgia, tendonitis, back pain, joint swelling, and joint effusion. Serious adverse reactions reported for MACI were arthralgia, cartilage injury, meniscus injury, treatment failure, and osteoarthritis.

**Use in Specific Populations**

Pregnancy: Because MACI implantation requires invasive surgical procedures, use in pregnancy is not recommended.

See 17 for Patient Counseling Information Revised: 06/2017

For more information, please see Highlights of Prescribing Information about MACI, or visit MACI.com


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nSTRIDE® Autologous Protein Solution Kit

Intra-Articular Injection for the Treatment of Knee Osteoarthritis

Once OA pain starts it is hard to stop. The nSTRIDE APS Kit is designed to produce a groundbreaking autologous therapy to treat pain and slow the progression of cartilage degradation and destruction in the knee. The nSTRIDE APS Kit is a cell-concentration system designed to concentrate anti-inflammatory cytokines and anabolic growth factors to significantly decrease pain and promote cartilage health.

- Significantly Reduces Pain Associated with Knee OA up to 2 years1-3
- Significantly Improves function in the Knee Joint associated with OA1-3
- Stimulates Cartilage Cell Proliferation**
- Blocks Cartilage Destruction**
- Slows Cartilage Degradation**
- Point-of-Care
- Single Injection

70% Improvement in Knee Pain at 2 years following a Single Injection3*


**Cell culture assays are not necessarily indicative of clinical outcomes.

* As measured by WOMAC pain scores reported by patients continuing follow-up through 2 years (n = 22).

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Your progress. Our promise.

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