

Abstract Submission Form: EORS 2018, 25th to 28th of September 2018, Galway, Ireland

Abstract Submission Form Guidelines

EORS 2018 invites abstracts in all areas of orthopaedic, musculoskeletal and trauma research, development and clinical translation. Abstract with educational, career development and societal impact are also welcomed. If you are interested in submitting an abstract, please complete the abstract form and submit it to eors@nuigalway.ie by **Friday, the 30th of March 2018**.

Submitted abstracts will be evaluated on the basis of the following criteria:

- Relevance to orthopaedic / musculoskeletal / trauma research;
- Scientific / technological / clinical / educational / societal impact.

Submitted abstracts will be reviewed and considered for:

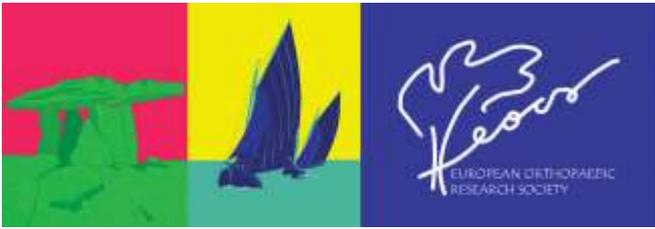
- Podium presentation;
- Rapid fire presentation;
- Poster presentation.

Notification of acceptance or rejection will be communicated to the authors in April 2018. Instructions for podium and poster presenters will be sent to the authors in June 2018.

Accepted abstracts will be published in the Orthopaedic Proceedings of The British Editorial Society of Bone & Joint Surgery and eCM Conferences Open Access.. EORS 2018 is also negotiating with various Journals for dedicated full length papers (research and review manuscripts).

EORS 2018 will provide numerous awards to high quality submitted abstracts from early career investigators. Abstracts will automatically be considered for all awards upon submission.

Abstracts are submitted with the understanding that when an abstract is accepted, the presenting author will register and attend the meeting. Should the presenting author be unable to attend the



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25-28 SEPTEMBER 2018
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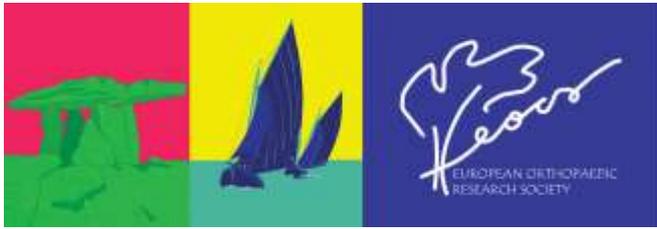


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meeting, a registered co-author may present the podium or poster presentation instead. A registered author can present only one podium presentation and up to three poster presentations.

EORS 2018 assumes that all authors have approved the submitted abstract. All abstracts must be submitted electronically using the template below. All abstracts must be written in English.

EORS 2018 accepts no responsibility for submitted abstracts. The responsibility remains with the authors. The copyright of all abstracts rests with the authors and EORS 2018 may not be held responsible for any infringements as a result of plagiarism, libel, slander or any misuse of material. Authors submitting an abstract for the EORS 2018 meeting do so with the understanding that they will abide by the conditions, deadline policies and decisions of the EORS Committee.



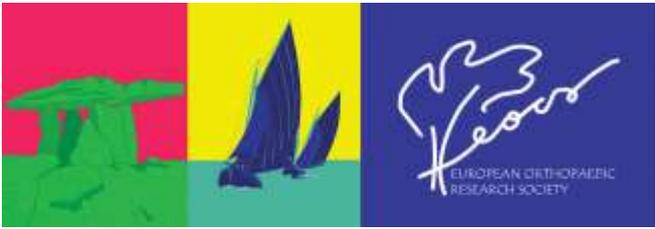
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Please select from the list below up to 5 themes that describe your abstract.

Symposium	Tick	Symposium	Tick	Symposium	Tick
3D printing		Extracellular matrix		Osteoarthritis	
Aseptic loosening		Extracellular vesicles		Osteomyelitis	
AOCMF symposium		Fracture		Osteoporosis	
Biomechanics		Functional biomaterials		Polymers	
Bioprinting		Gait analysis		Statistical methods	
Bioreactors		Gene therapy		Nanomedicine	
Bone		Hand & Wrist		Orthobiologics	
Cancer		Hip		ORS-ISFR symposium	
Cartilage		Hydrogels		Outreach	
Cell-Biomaterial interface		Imaging		Patient reported outcomes	
Ceramics		Immune tissue engineering		Pathophysiologies	
Career development		<i>In silico</i> models		Personalised medicine	
Cell therapy		<i>In vivo</i> models		Rehabilitation	
Clinical trials		<i>In vitro</i> models		Regulatory compliance	
Commercialisation		Infection		RESPINE H2020 symposium	
Composite biomaterials		Injectable systems		Responsive biomaterials	
Decellularised tissues		Intervertebral disk		Shock wave therapy	
Diabetic healing		Joint		Shoulder	
Distraction histogenesis		Knee		Spine	
Drug delivery		Ligament		Surgery	
Education		Marine biomaterials		Tendon	
Elbow		Mechanotransduction		Trauma	
Electroactive biomaterials		Metals		TTT H2020 symposium	
Electromagnetic energy		Minimal invasive surgery		Scalability and manufacturing	
Electrospinning		Muscle		Stem cells	
Engineered cells		Obesity		Women leadership	



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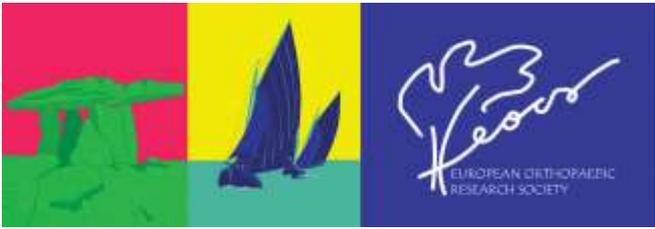


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PLEASE ADHERE TO THE GUIDELINES BELOW

Please rename the file using the first and second name of the presenting author. The title of the abstract should be in bold capital letters. The authors' names should start with their initials, each followed by a full stop before the surname. Only the affiliation of the presenting author should be provided and must include Institute, City and Country. The name and email of the presenting author should follow. The abstract should not exceed 250 words. No figures, photos or graphs are allowed. See example abstract below.

Please submit your abstract to eors@nuigalway.ie by **Friday, the 30th of March 2018.**



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MACROMOLECULAR CROWDING IN MESENCHYMAL STEM CELL CULTURE

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Macromolecular crowding (MMC) is a biophysical phenomenon that accelerates biological processes by several orders of magnitude. Herein, we ventured to assess the influence of MMC in mesenchymal stem cell culture. Human bone marrow stem cells were seeded at 25,000 cells/cm² in 24 well plates and were allowed to attach for 24 h. Subsequently, the medium was changed to medium with MMC (100 µg/ml carrageenan, Sigma Aldrich) and 100 µM L-ascorbic acid phosphate (Sigma Aldrich). Medium without carrageenan was used as control. Media were changed every 3 days. SDS-PAGE, zymography, immunocytochemistry, FACS and tri-lineage analyses were conducted after 2, 7 and 14 days. SDS-PAGE and densitometric analyses illustrated significant increase ($p < 0.001$) in collagen deposition in the presence of carrageenan at all time points. Gelatine zymography revealed a significant increase ($p < 0.001$) in MMP activity in the presence of carrageenan. Immunocytochemistry and relative fluorescence intensity analyses showed significant increase ($p < 0.001$) in collagen type I, collagen type III and laminin deposition in the presence of carrageenan. Surface markers CD90, CD44, CD105 and CD73 were expressed in all groups and no significant difference ($p > 0.05$) was observed between the groups. No significant difference ($p > 0.05$) was observed in transcriptional OCT-4, SOX-2, NANOG and SSEA-4 expression between the groups. Adipogenesis and osteogenesis were not affected ($p > 0.05$), whilst chondrogenesis was significantly increased ($p < 0.001$) in the presence of carrageenan. Collectively, these data clearly illustrate the beneficial effect of MMC in human bone marrow stem cell culture.