<table>
<thead>
<tr>
<th>Topic: Development and Homeostasis</th>
</tr>
</thead>
</table>
| 1. Effect of Microenvironmental Conditions on the Glycosaminoglycan Synthesis Rates of Nucleus Pulposus Cells  
Presenting Author: Niamh Wilson, *Trinity College Dublin, Ireland* |
| 2. Investigating the role of steroid hormones in the intervertebral disc  
Presenting Author: Jeffrey Hutchinson, *University of Western Ontario, Canada* |
| 3. Does increasing sulfation boost primary intervertebral disc cell cultures  
Presenting Author: Paola Bermudez-Lekerika, *University of Bern, Switzerland* |
Presenting Author: Levon Rodriguez, *Icahn School of Medicine at Mount Sinai, USA* |
| 5. CD-9 as a Novel Marker of Healthy Late-Stage Nucleus Pulposus Cells  
Presenting Author: Lachlan Smith, *University of Pennsylvania, USA* |
| 6. Effects of Organ Culture and Mesenchymal Stem Cell Delivery on Nucleus Pulposus Cell Extracellular Matrix Gene Expression and Cell Cycle Progression  
Presenting Author: Lachlan Smith, *University of Pennsylvania, USA* |
| 7. Mitochondrial fusion protein OPA1 is necessary for maintaining integrity of NP cell organelles and tissue homeostasis  
Presenting Author: Vedavathi Madhu, *Thomas Jefferson University, USA* |
| 8. Understanding the physiological behaviour of disc cells in an in vitro imitation of the healthy and degenerated niche  
Presenting Author: Christine Le Maitre, *Sheffield Hallam University, UK* |
| 9. Investigating the Role of TRPV4 as a Mechanoreceptor in the Intervertebral Disc  
Presenting Author: Taylor Shelton, *The University of Western Ontario, Canada* |
| 10. Effects of Lactate and Histone Lactylation on Aggrecan Expression in Rat Nucleus Pulposus Cells  
Presenting Author: Trudy Zou, *University of Pittsburgh, USA* |
| 11. Understanding the Role of the Notochord in Spinal Development  
Presenting Author: Vaneka Hoskie, *Harvard Medical School, USA* |
<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Presenting Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>The Role of Ellis-Van Creveld Syndrome Proteins during Intervertebral Disc Development and Degeneration</td>
<td>Stephen Richardson, University of Manchester, UK</td>
</tr>
<tr>
<td>13</td>
<td>Regulation of CREB provides a feedback loop for the homeostasis and mechanics of connective tissues vital for spine alignment</td>
<td>Ryan Gray, University of Texas at Austin, USA</td>
</tr>
<tr>
<td>14</td>
<td>Spatial and temporal N-glycome characterisation of the human healthy and diseased intervertebral disc</td>
<td>Aert Schepers, CURAM SFI Research Centre for Medical Devices, Ireland</td>
</tr>
<tr>
<td>15</td>
<td>Bioprinting Whole Intervertebral Discs to Understand Development and Inform Regenerative Therapies</td>
<td>Matthew Kibble, University of Manchester, UK</td>
</tr>
<tr>
<td>16</td>
<td>Native Tie2+ Progenitor Cells - The ultimate Rejuvenation Source for the Degenerated Intervertebral Disc?</td>
<td>Benjamin Gantenbein, University of Bern, Switzerland</td>
</tr>
<tr>
<td>17</td>
<td>From pluripotent stem cells to intervertebral disc progenitor cells: a transcriptomic study at the single-cell resolution</td>
<td>Anne Camus, Nantes University, France</td>
</tr>
<tr>
<td>18</td>
<td>High Osmolality with Supplemented Chondroitin Sulfate not only Stimulates Anabolism but also Suppresses Catabolism in Bovine Nucleus Pulposus Explants</td>
<td>Yutaro Kanda, The Brigham and Women's Hospital, USA</td>
</tr>
<tr>
<td>19</td>
<td>Effects of High Osmotic Pressure with Supplemented Chondroitin Sulfate under Cyclic Hydrostatic Pressure on Metabolism in Bovine Nucleus Pulposus Explants</td>
<td>Yutaro Kanda, The Brigham and Women's Hospital, USA</td>
</tr>
<tr>
<td>20</td>
<td>Regenerative Healing in neonatal mouse intervertebral discs only occurs before postnatal day 28</td>
<td>Danielle D’Erminio, Icahn School of Medicine at Mt Sinai, USA</td>
</tr>
<tr>
<td>21</td>
<td>Sirtuin 6 is critical for maintaining intervertebral disc homeostasis during spine aging</td>
<td>Pranay Ramteke, Thomas Jefferson University, USA</td>
</tr>
<tr>
<td>22</td>
<td>Evidence of Histone Lactylation and its Role in MMP-13 Epigenetic Regulation in Intervertebral Discs</td>
<td>Dong Wang, University of Pittsburgh, USA</td>
</tr>
<tr>
<td>23</td>
<td>Network medicine-based gene prioritization in Intervertebral Disc Degeneration</td>
<td>Francesco Gualdi, Universitat Pompeu Fabra, Spain</td>
</tr>
<tr>
<td>24</td>
<td>Smoking and tetramer tryptase+ Mast Cells accelerate intervertebral disc degeneration by inducing METTL14-mediated DIXDC1 m6 modification</td>
<td>Ji Tu, University of New South Wales, Australia</td>
</tr>
<tr>
<td>25</td>
<td>HMGB1 mediates macrophage recruitment and regional intervertebral disc properties following injury</td>
<td>Kevin Burt, Columbia University, USA</td>
</tr>
<tr>
<td></td>
<td>Title</td>
<td>Presenting Author</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>26</td>
<td>Characterization and Modulation of the Pro-Inflammatory Effects of Immune Cells in the Canine Intervertebral Disc</td>
<td>Mary Heimann, The Ohio State University, USA</td>
</tr>
<tr>
<td>27</td>
<td>Free calcium and the Extracellular Calcium-Sensing Receptor Regulate Intervertebral Disc Degeneration and Calcification</td>
<td>Michael Grant, McGill University, Canada</td>
</tr>
<tr>
<td>28</td>
<td>Revisiting the catabolic response of intervertebral disc cells in 3D to TNF-α and IL-1β</td>
<td>Paola Bermudez-Lekerika, University of Bern, Switzerland</td>
</tr>
<tr>
<td>29</td>
<td>TLR-2 Activation Dysregulates miR-100-5p and miR-155-5p Leading to the Downregulation of c-Fos</td>
<td>Petra Cazzanelli, Rochester Institute of Technology, USA</td>
</tr>
<tr>
<td>30</td>
<td>Females Activate More Inflammatory Pathways than Males and Wnt Signaling-Deficiency in Aging Attenuates Inflammatory Pathways in Response to Disc Injury</td>
<td>Tori Kroon, Icahn School of Medicine at Mount Sinai, USA</td>
</tr>
<tr>
<td>31</td>
<td>Slow twitch paraspinal muscle dysregulation in adolescent idiopathic scoliosis exhibiting HIF-2α misexpression</td>
<td>Victor Leung, The University of Hong Kong, Hong Kong</td>
</tr>
<tr>
<td>32</td>
<td>Environmentally Stressed Nucleus Pulposus Cells Trigger the Onset of Discogenic Low Back Pain</td>
<td>Wensen Jiang, Cedars-Sinai Medical Center, USA</td>
</tr>
<tr>
<td>33</td>
<td>Novel dissection method for isolating the dorsal root ganglion, dorsal horn of the spinal cord, along with the nucleus pulposus, and annulus fibrosus from the intervertebral discs of the same mouse</td>
<td>Alison Shur, Hospital for Special Surgery, USA</td>
</tr>
<tr>
<td>34</td>
<td>Chronic Type 2 Diabetes Impairs Tissue Remodeling and Stimulates Pro-inflammatory and Immune-Cell Recruiting Chemokines in the Murine Intervertebral Disc</td>
<td>Christian Gonzalez, Washington University in St. Louis, USA</td>
</tr>
<tr>
<td>35</td>
<td>Effects of Vertebral Endplate Injury on Spinal Cord Using an in Vivo Rat Model</td>
<td>Denise Iliff, Icahn School of Medicine at Mount Sinai, USA</td>
</tr>
<tr>
<td>36</td>
<td>ADAM8 Inactivation Retards Intervertebral Disc Degeneration in Mice</td>
<td>Yejia Zhang, University of Pennsylvania, USA</td>
</tr>
<tr>
<td>37</td>
<td>Roles of TNFAIP8 family in intervertebral disc degeneration</td>
<td>Yejia Zhang, University of Pennsylvania, USA</td>
</tr>
<tr>
<td>38</td>
<td>Characterization of the Temporal Regulation of Acute Immune Cell Infiltration in a Mouse Model of Intervertebral Disc Injury</td>
<td>Sade Clayton, Washington University in St Louis, USA</td>
</tr>
<tr>
<td>39</td>
<td>Circulating microRNAs May be Predictive of Degenerative Cervical Myelopathy</td>
<td>Nicholas D'Antonio, Rothman Institute, USA</td>
</tr>
<tr>
<td>40</td>
<td>Differential expression of TNFR1 and TNFR2 receptors with TNF-alpha challenge in a rat IVDs cells in vitro</td>
<td>Olga Yiantsos, Icahn School of Medicine at Mt Sinai, USA</td>
</tr>
</tbody>
</table>
41. Identification of sub-populations of Chronic Low Back Pain patients by cluster analysis of gut microbiota: a preliminary analysis  
    Presenting Author: Valerio Tonelli Enrico, University of Pittsburgh, USA

42. Link N Regulates DRG Hypersensitivity through Regulation of IL-1beta  
    Presenting Author: Muskan Alad, McGill University, Canada

43. Lumbar intervertebral disc injury in mice increases neuronal and vascular annulus fibrosis infiltration  
    Presenting Author: Ryan Potter, Washington University in St Louis, USA

44. Are current machine learning applications analogous to radiologist classification of degenerate discs? A systematic review and meta-analysis  
    Presenting Author: Roger Compte, King's College London, UK

45. Investigating autoimmune contribution to Modic change in TwinsUK  
    Presenting Author: Francesco Gualdi, Universitat Pompeu Fabra, Spain

46. Sdc4 plays an important role in the homeostasis of lumbar spine  
    Presenting Author: Kimheak Sao, Thomas Jefferson University, USA

47. Intradiscal Inflammatory Stimulation Induces Spinal Pain Behavior and Intervertebral Disc Degeneration In Vivo  
    Presenting Author: Lauren Lisiewski, Columbia University, USA

48. Intervertebral Disc Activation of NFKB leads to Systemic Inflammation and Disc Macrophage Infiltration  
    Presenting Author: Mark Kim, Columbia University, USA

49. A Novel Mouse Model for the Study of Spinal Cord Injury-Associated Neurogenic Heterotopic Ossification  
    Presenting Author: Rachad Aita, McGill University, Canada

50. A Prospective Evaluation of the Clinical Outcomes of Culture Positive Patients who Underwent Primary Lumbar Fusion  
    Presenting Author: Philip Paschal, Hospital for Special Surgery, USA

51. Bilateral needle puncture of caudal intervertebral discs in mice results in compromised structure, elevated IL-6, and de novo intradiscal innervation and vascularization  
    Presenting Author: Remy Walk, Washington University in St. Louis, USA

52. Diffuse idiopathic skeletal hyperostosis (DISH) in humans: Prevalence and the continuum of imaging features in a Northern US population  
    Presenting Author: Dale Fournier, University of Western Ontario, Canada

    Presenting Author: Karthikeyan Rajagopal, University of Pennsylvania, USA

54. Mechanical compression in an ovine model of Degenerative disc disease  
    Presenting Author: Andres Bonilla, Colorado State University, USA

55. Synergy of the Autoimmune response in a model of Degenerative Disc Disease  
    Presenting Author: Andres Bonilla, Colorado State University, USA
56. **In Vivo Differences in Disc Mechanical Function Between Young and Elderly Populations During Diurnal Loading and Postural Changes Evaluated with MRI**
   Presenting Author: Dawn Elliott, *University of Delaware, USA*

57. **Inhibition of TRPV4 Blunts IL-6 Production and Protects Against Degeneration in the Nucleus Pulposus Due to Dynamic Loading of the Intervertebral Disc**
   Presenting Author: Garrett Easson, *Washington University in St. Louis, USA*

58. **Intervertebral Disc and Facet Crosstalk in a Rabbit Puncture Model of Disc Degeneration**
   Presenting Author: Brianna Orozco, *University of Pennsylvania, USA*

59. **Molecular Augmentation of the Microniche of Human Osteoarthritic Chondrocytes by Biomimetic Proteoglycans**
   Presenting Author: Elizabeth Kahle, *Drexel University, USA*

60. **A finite element comparison between Total Disc Replacement and Anterior Cervical Discectomy & Fusion in lordotic, kyphotic, and straight cervical spine**
    Presenting Author: Deepanshu Singh, *University of Toledo, USA*

61. **A Method to Characterize Crack Initiation in Intervertebral Discs Using a Multiaxial Anisotropic Approach**
    Presenting Author: Jill Middendorf, *University of Minnesota, USA*

62. **An Evaluation of the Comparators Used to Establish Credibility and Validation of Spine Computational Models**
    Presenting Author: Brittany Stott, *McGill University, Canada*

63. **Automated Vertebral Segmentation using a Convolutional Neural Network**
    Presenting Author: Girish Viraraghavan, *Drexel University, USA*

64. **Delamination Strength and Stiffness in the Annulus Fibrosus from Adult Spinal Deformity Patients**
    Presenting Author: Manmeet Dhiman, *University of Calgary, Canada*

65. **Determination of Stress-Growth Relationship in Immature Porcine Vertebrae using Finite Element Modeling**
    Presenting Author: Girish Viraraghavan, *Drexel University, USA*

66. **Development and Validation of DNA Origami Sensors to Assess the Microenvironment of the Intervertebral Disc**
    Presenting Author: Jordin Marshall, *The Ohio State University, USA*

67. **Does Intervertebral Disc Stiffness Differ in Adolescent Idiopathic Scoliosis (AIS) and Degenerative Scoliosis?**
    Presenting Author: Taylor Bader, *University of Calgary, Canada*

68. **Does Spinal Deformity Result from Loss of Mechanical Integrity of the Annulus Fibrosus in Degenerated Intervertebral Discs?**
    Presenting Author: Taylor Bader, *University of Calgary, Canada*

69. **Effect of Anterior Vertebral Body Tether Breakage on Curve Correction in Adolescent Idiopathic Scoliosis Patients**
    Presenting Author: Girish Viraraghavan, *Drexel University, USA*
70. Multi-modal Evaluation of Vertebral Strength in Individuals with Impaired Bone Density
    Presenting Author: Rachana Vaidya, Washington University in St. Louis, USA

71. Patient-Specific Finite Element Modeling of Scoliotic Curve Progression using Region-Specific Stress-Modulated Vertebral Growth
    Presenting Author: Girish Viraraghavan, Drexel University, USA

    Presenting Author: Girish Viraraghavan, Drexel University, USA

73. Step time and trunk acceleration magnitude asymmetries do not contribute to overall gait asymmetry in chronic low back pain
    Presenting Author: Anna Bailes, University of Pittsburgh, USA

74. Use of Finite Element Modeling to Design 3D-Printed Bioabsorbable Cage to Support Tissue-Engineered Intervertebral Disc Implants
    Presenting Author: Byumsu Kim, Cornell University, USA

75. In Vitro and In Silico Investigation of Dynamic Compression on Cartilage Endplate Cells in Agarose
    Presenting Author: Katherine Crump, University of Bern, Switzerland

76. Cellular Responses to Physiologically Relevant Hydrostatic Pressure in Isolated Bovine Annulus Fibrosus Cells in vitro
    Presenting Author: Ryo Taiji, Brigham and Women’s Hospital, USA

77. Effects of Hydrostatic Pressure on Metabolic Turnover in Inner and Outer Annulus Fibrosus Explants
    Presenting Author: Ryo Taiji, Brigham and Women’s Hospital, USA

78. Effects of collagen cross-linking on solute transport in the human cartilage endplate
    Presenting Author: Jae-Young Jung, University of California San Francisco, USA

79. Restoration of Physiologic Loading Improves Outcomes in Engineered Disc Implanted-Spinal Motion Segments
    Presenting Author: Sarah Gullbrand, University of Pennsylvania, USA

80. A 3D Bioprinted Model of the Intervertebral Disc for Disease Modelling Applications
    Presenting Author: Stephen Richardson, University of Manchester, UK

81. Characterization of Quantitative MRI Measures to Assess Spontaneous Canine Intervertebral Disc Degeneration
    Presenting Author: Casey Johnson, University of Minnesota, USA

82. Effects of Hydration of Nucleus Pulposus Tissue on T1rho and T2 Relaxation Times and Mechanical Properties
    Presenting Author: Megan Co, The Ohio State University, USA

83. Validating a Novel VR/AR Spinal Surgical Training Device with Focus on Physics-Based Force Feedback
    Presenting Author: Sami Alkadri, McGill University, Canada

84. Cyclic traction loading facilitates water uptake in a healthy bovine disc culture: preliminary study
    Presenting Author: Astrid Soubrier, AO Research Institute, Switzerland
85. 3D Printed Scaffolds for Stabilization and Local Delivery in Bone Metastases  
Presenting Author: Ateeque Siddique, McGill University, Canada

86. Nanoparticle-functionalized Bone Cement for the Local Therapeutic Delivery to Spine Metastases  
Presenting Author: Ateeque Siddique, McGill University, Canada

87. Dasatinib and Quercetin treatment reduces the incidence and severity of disc degeneration with evidence of Junb and Zfp3611 as regulators of cell fate  
Presenting Author: Olivia Ottone, Thomas Jefferson University, USA

88. Targeting Senescent Cancer Cells Using Senolytic Drugs to Prevent Breast-To-Bone Metastasis  
Presenting Author: Eleane Hamburger, McGill University, Canada

89. A cell-free therapeutic strategy: the role of Wharton's Jelly MSCs derived extracellular vesicles in intervertebral disc regeneration  
Presenting Author: Gianluca Vadala, Campus Bio-Medico University Hospital Foundation of Rome, Italy

90. EV-enriched secretome fraction of interleukin-1β-primed mesenchymal stem/stromal cells modulates the phenotype of human annulus fibrosus cells  
Presenting Author: Graciosa Teixeira, Ulm University, Germany

91. 3D Printed Titanium Surface Optimization for Mesenchymal Stem Cell Growth and Attachment  
Presenting Author: Gregory Paschal, Hospital for Special Surgery, USA

92. Regenerative potential of an injectable hydrogel system in human degenerate discs  
Presenting Author: Hosni Cherif, McGill University, Canada

93. Novel-Unidentified Targets for Driving Osteogenesis in ASCs Using a Genome-Wide CRISPRa Screen  
Presenting Author: Hunter Levis, University of Utah, USA

94. Increased Extracellular Matrix Deposition using Synergistic Multiplex CRISPR-activation of a Novel Gene in ACAN/Col2 Upregulated Adipose-Derived Stem Cells  
Presenting Author: Hunter Levis, University of Utah, USA

95. Synergistic Multiplex CRISPR-activation of RNF14 Improves Extracellular Matrix Deposition in Low-pH Media in dCas9-VPR-ACAN/Col2 Upregulated Adipose-Derived Stem Cells  
Presenting Author: Hunter Levis, University of Utah, USA

96. PCRX-201, a novel gene therapy treatment approach for intervertebral disc degeneration  
Presenting Author: Joseph Snuggs, Sheffield Hallam University, UK

97. Phenotypic maturation of hiPS-derived notochord-like cells using covalent hydrogel and micromasses culture  
Presenting Author: Julie Warin, Nantes University, France

98. 3-Vanillin Enhanced Extracellular Vesicle Modulation of Human Mesenchymal Stem Cell Differentiation and Disc Cell Phenotype  
Presenting Author: Li Li, McGill University, Canada
99. Non-viral Cell Penetrating Peptides for microRNA Delivery and Regulation of NP Cell Phenotype
Presenting Author: Marcos Barcellona, Trinity College Dublin, Ireland

100. Notochordal cells as a potential cell source for disc degeneration-associated low back pain
Presenting Author: Shaghayegh Basatvat, Sheffield Hallam University, UK

101. Treatment of intervertebral disc cells with CRISPR modified MSC derived EVs
Presenting Author: Iker Martinez Zalbidea, Rochester Institute of Technology, USA

102. Dual Peptide Functionalized Alginate Hydrogels to Control MSC Therapeutic Potency for Cell-mediated Intervertebral Disc Repair
Presenting Author: Xiaohong Tan, Washington University in St. Louis, USA

103. TNFR1 blocking improves degenerative human annulus fibrosus cell genotype
Presenting Author: Jennifer Gansau, Icahn School of Medicine at Mount Sinai, USA

104. A Novel, Shelf-Stable Complete Autograft Substitute Based on Innovative Allograft Preservation Technology
Presenting Author: Subha Bhattacharyya, MTF Biologics, USA

105. Fetal-inspired scaffolds for Intervertebral Disc Regeneration
Presenting Author: Joana Caldeira, Universidade do Porto, Portugal

106. Mechanical Characterization of Flexible and Resorbable Support Materials for Tissue Engineered Intervertebral Discs
Presenting Author: Alikhan Fidai, Cornell University, USA

107. Nanofiber-Reinforced Sulfated Alginate for 3D Bioprinting of Intervertebral Discs
Presenting Author: Gabriella Wagner, Rochester Institute of Technology, USA

108. Notochordal cell matrix-based hydrogel serves as a delivery vehicle and protective niche of notochordal phenotype for IVD regeneration
Presenting Author: Georgina Targa Fabra, CURAM SFI Research Centre for Medical Devices, Ireland

109. Repairing Annulus Fibrosus Fissures to Prevent Intervertebral Disc Herniation using Methacrylated Gellan Gum in combination with Novel Silk
Presenting Author: Andreas Croft, University of Bern, Switzerland

110. Using Mesendoderm Progenitor Cells Seeded in Hydrogel Biomaterial to Regenerate the Intervertebral disc
Presenting Author: Rebecca Williams, Sheffield Hallam University, UK

111. Adhesive and Non-Adhesive Hydrogels for Intervertebral Disc Repair in an Ovine Discectomy Model
Presenting Author: ChristopherPanebianco, Icahn School of Medicine at Mount Sinai, USA

112. Driving Osteogenesis in Composite Biomaterials Using Tunable Hydroxyapatite Surface Modifications
Presenting Author: Matthew Fainor, University of Pennsylvania, USA

113. From Preclinical to Clinical Translation of Intervertebral Disc Cell-based Regeneration - Effects of Species-Specific Scale, Metabolism and Matrix Synthesis Rates
Presenting Author: Emily McDonnell, Trinity College Dublin, Ireland
114. Repair of Intervertebral Disc Herniations with Surgical-Fiberlock Technology  
Presenting Author: Brianna Orozco, University of Pennsylvania, USA

115. Injectable Radiopaque Hyaluronic Acid Granular Hydrogels for Intervertebral Disc Repair  
Presenting Author: Sarah Gullbrand, University of Pennsylvania, USA

116. Interlaminar Fusion Stabilization versus Pedicle Screw Instrumentation, a Retrospective Study of Lumbar Circumferential Fusion  
Presenting Author: Philip Paschal, Hospital for Special Surgery, USA

117. Withdrawn

118. Are All Cervical Cages Created Equal? An Analysis of a Decade of Adverse Event Reports in the United States  
Presenting Author: Oluwatodimu Raji, The Taylor Collaboration, USA

119. Intravenous vs Oral Acetaminophen Perioperative to Instrumented Lumbar Fusion: A Comparative Effectiveness Study  
Presenting Author: Gregory Paschal, Hospital for Special Surgery, USA

120. Poly-Ether-Ketone-Ketone versus Titanium Interbody Cages in Patients Undergoing ACDF Procedures, a Prospective Evaluation  
Presenting Author: Philip Paschal, Hospital for Special Surgery, USA

121. Rapamycin Ameliorates Age-Associated Intervertebral Disc Degeneration in Marmosets with Gender Specific Effects  
Presenting Author: Yunting Tang, University of Pittsburgh, USA

122. FOXF1 Delivery via Engineered Extracellular Vesicles in a Mouse Lumbar Intervertebral Disc Puncture Model  
Presenting Author: Shirley Tang, The Ohio State University, USA

123. Synergistic Effect of RG-7112 & o-Vanillin Combination Treatment for Intervertebral Disc Degeneration  
Presenting Author: Olivia Wu-Martinez, McGill University, Canada

124. Activation of the Integrated Stress Response (ISR) Pathway in the Intervertebral Discs of a Mouse Model of Chondrodysplasia Results in Early Onset Disc Degeneration  
Presenting Author: Kathryn Cheah, University of Hong Kong, Hong Kong