Molecular Basis of Organ System Diseases

Fall 2015
GMS MTM 707
Evans Biomedical Research Center, X-715
Tuesdays 10:00 – 11:50 am

Course Director: Matthew Jones
Office: R-206
Phone: 638-5236

Grading: Midterm Exam 50% due 11/2/15 by 5 pm (email submission)
Final Exam 50% due 12/18/15 by 5 pm (email submission)

Summary: The Organ System Diseases course is designed to explore contemporary research on the molecular basis of diseases in a variety of tissues and organs within the body. The content of this course will introduce students to the structure and function of major organ systems including the heart, lungs, kidney, bone, brain, skin and liver, and then interrogate how molecular and cellular alterations in these organs can lead to physiologic dysfunction and disease.

Course Schedule:

**September 2015**

<table>
<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Topics</th>
</tr>
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<tbody>
<tr>
<td>15</td>
<td>Lou Gerstenfeld</td>
<td>Introduction to the structure and function of bone <em>Hematopoiesis, mineral homeostasis, and age-related diseases of skeletal tissues</em></td>
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<tr>
<td>22</td>
<td>Caroline Apovian</td>
<td>Introduction to adipose tissue structure and function <em>Obesity and diabetes</em></td>
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<tr>
<td>29</td>
<td>Hee-Young Park</td>
<td>Introduction to the structure and function of skin</td>
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**October 2015**

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<thead>
<tr>
<th>Date</th>
<th>Speaker</th>
<th>Topics</th>
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<tbody>
<tr>
<td>6</td>
<td>Linsey Stiles, Orian Shirihai</td>
<td>Mitochondrial function and dysfunction <em>Theory and practice</em></td>
</tr>
<tr>
<td>13</td>
<td>Wilson Colucci</td>
<td>Molecular mechanisms of myocardial remodeling <em>Heart failure</em></td>
</tr>
<tr>
<td>20</td>
<td>Richard Cohen</td>
<td>Introduction to cardiovascular structure and function <em>Atherosclerosis and cardiovascular disease</em></td>
</tr>
</tbody>
</table>
27  David Salant  Introduction to kidney structure and function  
     Glomerular disease: from animal models to humans

Midterm Take Home Exam – Deadline November 2\textsuperscript{nd} by 5:00 pm --- email submission

\begin{tabular}{|c|c|p{10cm}|}
\hline
Date & Speaker & Topics \\
\hline
3 & Herb Cohen & Cystic kidney disease \\
\hline
10 & Christine Reardon & Introduction to the structure and function of the lungs COPD, ILD, ARDS, PAH, thromboembolic and pleural diseases \\
\hline
17 & Alan Fine & Molecular and cell biology of asthma \\
\hline
24 & Darrell Kotton & Introduction to regenerative medicine Stem cell applications to modeling and curing disease \\
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\end{tabular}

November 2015

December 2015

1  Ben Wolozin  Introduction to structure and function of the brain  
     Parkinson’s disease: How deficits in autophagy lead to slow movement

8  Gustavo Mostoslavsky  Introduction to structure and function of the liver  
     Hemochromatosis

15  Raja Sayegh  Introduction to structure and function of the reproductive system  
     Menstrual disorders

Final Take Home Exam – Deadline December 18\textsuperscript{th} by 5:00 pm --- email submission