Foundations of Biomedical Research 2021
Week 12: Signaling Systems and Bodily Stress – Terry Walters

<table>
<tr><th>Time</th><th>Monday
November 15</th><th>Tuesday
November 16</th><th>Wednesday
November 17</th><th>Thursday
November 18</th><th>Friday
November 19</th></tr>
<tr><td>8:30</td><td>Lecture 1: Introduction to signaling systems and bodily stress (TW)</td><td>Lecture 3: Neural signaling and stress (FD)</td><td rowspan="2">Biostats/ bioinformatics Exercise</td><td>Lecture 6: Adaptive immune system and stress (DL)</td><td rowspan="2">Breakout Presentations</td></tr>
<tr><td>9:15</td><td>Lecture 2: Immune signaling and stress; severe trauma example (DL)</td><td>Lecture 4: Endocrine signaling and stress (NJ)</td><td>Lecture 7: Stress and evolutionary medicine (TW)</td></tr>
<tr><td>10:00</td><td>Break</td><td>Break</td><td>Break</td><td>Break</td><td>Break</td></tr>
<tr><td>10:15</td><td>Breakout</td><td>Breakout</td><td rowspan="2">Lecture 5: Pain-related signaling and stress (PG)</td><td>Breakout</td><td>Breakout Presentations</td></tr>
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FD	Fabricio Do Monte, Dept of Neurobiology & Anatomy, McGovern Medical School
PG	Peter Grace, Dept of Symptom Research, MD Anderson Cancer Center
NJ	Nick Justice, Institute of Molecular Medicine
DL	Dorothy Lewis, Institute for Academic Medicine, Houston Methodist
TW	Edgar (Terry) Walters, Dept of Integrative Biology & Pharmacology, McGovern Medical School

Learning Objectives
Core Course Week 12, Signaling Systems and Bodily Stress

1. Understand general principles of systemic signaling important for adaptive and pathophysiological responses to bodily stress.
2. Know the basic roles of the endocrine, immune, and nervous systems in bodily stress responses, and how these signaling systems interact.
3. Know that bodily and psychological stress can promote persistent pain, anxiety, and depression (among other distressing states), and that evolutionary medicine provides insight into stress responses.
4. Learn how to work within a team to develop an original hypothesis about a potentially important role of an extracellular signal of your choice and its downstream effectors for maintaining a chronic complication of severe peripheral injury.
5. Learn how to devise experimental tests of your hypothesis and how to present your hypothesis, its significance, and its experimental tests to a critical audience of scientific peers.