

BMB and the MSU Center for Mitochondrial Science and Medicine will offer a graduate level seminar course (BMB 960) in Spring Semester 2018 on the topic of “Intersection of Mitochondrial Science and Medicine,” with the objective of exploring mitochondrial biochemistry in the context of the current field of mitochondrial medicine, including clinical correlations. The course will feature a combination of faculty and student presentations and consider topics such as: impact of nuclear and mitochondrial DNA mutagenesis and variability on organismal function, regulation of respiration and mitochondrial transcription by cell signaling, role of mitochondria in memory and neurodegenerative disease and the general field of mitochondrial health, oxidative stress and stress response, toxicity and disease.

BMB 960

**Intersection of Mitochondrial Science and Medicine**

Faculty: Laurie Kaguni (Coordinator), Shelagh Ferguson-Miller, John LaPres  
Spring Semester, Thursdays 4:00 pm, 1 credit

**Faculty Presenters Tentative topic**

- January 11 Laurie Kaguni  
Impact of nuclear and mitochondrial mutagenesis on mitochondrial function
- January 18 John LaPres  
The role of PAS proteins in mitochondrial homeostasis
- February 8 Shelagh Ferguson-Miller  
Tryptophan-rich sensory protein, TSPO, a first responder to stress?
- February 22 Maik Huttemann (Wayne State University)  
Regulation of oxidative phosphorylation by cell signaling

**Related BMB Colloquium Speakers** (We will have them visit class for student discussion.)

- January 25 Elizabeth Jonas (Yale)  
Mitochondrial ATP synthase in memory formation and in neurodegenerative disease
- February 1 Gerald Hart (Johns Hopkins University)  
Nutrient regulation of signaling and transcription by O-GlcNAcylation
- February 15 José Antonio Enriquez (CNIC and CIBERFES, Madrid)  
mtDNA variability shapes organismal metabolism
- March 29 Douglas Spitz (Iowa)  
Targeting mitochondrial oxidative metabolism for cancer therapy

**Student Presentations**

March 1, 15, 22, April 5, 12, 19, 26  
(March 8 is spring break)