Short Course on the Genetics of Addiction  
April 19 – May 7, 2020

This virtual event will meet from 12-2pm EDT each week on Monday, Wednesday and Friday. Sessions will be a combination of brief lectures and open discussion with topic experts.

**Monday, April 19th – Session One**

| How and why do we study the genetics of addiction? | • Overview of addiction genetics in mouse and human  
| | • Addiction genetics in humans  
| | • Addiction genetics in the laboratory mouse |

**Wednesday, April 21st – Session Two**

| How do we define and characterize addiction in humans and model organisms? | • Human Phenotypes  
| | • Mouse Behavioral Phenotyping  
| | • Similarities/Differences |

**Friday, April 23rd – Session Three**

| How do we study human genetics of addiction and what are the challenges and unanswered questions? | • Human genetics of addiction  
| | • Heritability, Twin Studies, phenotype and development  
| | • GWAS fundamental |

**Monday, April 26th – Session Four**

| What are the methods and populations for genetic studies in model organisms? | • Human genetics of addiction  
| | • Heritability, Twin Studies, phenotype and development  
| | • GWAS fundamental |
### Wednesday, April 28th – Session Five

| What makes a "disease model" and what are the challenges to modeling human variants in laboratory mice? | • Making “Humanized Mice”  
• Genetic background and phenotype  
• Modeling disease argument; cell culture, behavioral models and validity |

### Friday, April 30th – Session Six

| What makes a "disease model" and what are the challenges to modeling human variants in laboratory mice? | • Gene expression and gene regulation  
• Gene expression analysis  
• Epigenetics in addiction |

### Monday, May 3rd – Session Seven

| Where do we access and analyze model organism addiction data? | • Software overviews, purpose, access, etc. |

### Wednesday, May 5th – Session Eight

| Where do we access and analyze human addiction genetics and genomics data? | • Fuma, LD Hub, etc. |

### Friday, May 7th – Session Nine

| What are the rationale, methods and approaches for cross species integration? |  |