

**MODEL THEORY OF OPERATOR ALGEBRAS  
WORKSHOP SCHEDULE  
SEPTEMBER 20-22, 2017**

**Wednesday, September 20**

**Moss Cove Ballroom**

8:30-Breakfast  
9-Sinclair I  
10-Coffee Break  
10:30-Hart I  
11:30-Lunch  
1:30-Ioana I  
2:30-Sinclair II  
3:30-Coffee break  
4:00-Discussion

**Thursday, September 21**

**Doheny Beach Ballroom**

8:30-Breakfast  
9-Ioana II  
10-Coffee  
10:30-Hart II  
11:30-Sinclair III  
12:30-Lunch  
2:30-Hart III  
3:30-Coffee break  
4:00-Discussion

**Friday, September 22**

**Doheny Beach Ballroom**

8:30-Breakfast  
9-Ioana III  
10-Coffee  
10:30-Sinclair IV  
11:30-Ioana IV  
12:30-Lunch  
2:30-Hart IV  
3:30-Discussion  
5-Afternoon gathering (Los Trancos BBQ area)

## TENTATIVE LIST OF TOPICS

**Thomas Sinclair (Purdue University)****C\*-algebras**

Lecture 1: Concrete C\*-algebras, examples, concrete functional calculus, states, classification of abelian C\*-algebras

Lecture 2: Universal C\*-algebras, stable relations, purely infinite algebras, stably finite algebras

Lecture 3: Cpc maps, approximation properties, nuclearity

Lecture 4: Strongly self-absorbing algebras

**Bradd Hart (McMaster University)****Continuous Model Theory**

Lecture 1: Ultraproducts, metric languages and structures, C\*-algebras as an example, Los' theorem

Lecture 2: Elementary classes, type spaces and their topologies, II<sub>1</sub> factors as an example

Lecture 3: Definability and Beth definability, application to nuclearity

Lecture 4: Model theoretic characterization of nuclearity and the Henkin construction, numbers of ultrapowers of separable II<sub>1</sub> factors and their central sequence algebras.

**Adrian Ioana (UC San Diego)****von Neumann algebras**

Lecture 1: Definition of von Neumann (vN) algebras; vN's bicommutant theorem,  $L^\infty$  algebras as vN algebras.

Lecture 2: Review of classification into types; definition of tracial vN algebras; group vN algebras and group measure space vN algebras

Lecture 3: Property Gamma, McDuff factors, hyperfinite II<sub>1</sub> factor

Lecture 4: Amenable groups and amenable vN algebras, equivalence of  $G$  amenable and  $L(G)$  amenable, statement of Connes' uniqueness theorem for amenable II<sub>1</sub> factors, sample of results and open problems for non-amenable vN algebras.