



# ASTRO Opening Workshop

## August 22-26, 2016

### SCHEDULE

**Monday, August 22, 2016**

[Hamner Conference Center](#)

8:30-8:45	Registration
8:45-9:00	Opening Remarks <b>Sujit Ghosh</b> , SAMSI; <b>G. Jogesh Babu</b> , PSU
9:00-10:00	<i>Science and Statistics in Time Domain Astronomy and Cosmic Demographics</i> <b>Tom Loredo</b> , Cornell; <b>Eric Feigelson</b> , PSU
10:00-10:30	Break
10:30-11:30	<i>Introduction to Exoplanet Data</i> <b>Bekki Dawson</b> , PSU
11:30-12:30	<i>Multidimensional Clustering, Model Comparison, Measurement Uncertainty, Selection Effects etc., in GW</i> <b>Will Farr</b> , University of Birmingham, UK
12:30-1:30	Lunch
1:30-2:30	<i>Transients: Gotta catch 'em all</i> <b>Ashish Mahabal</b> , Caltech; <b>Matthew Graham</b> , Caltech
2:30-3:30	<i>Hierarchical Modeling of Exoplanet Populations</i> <b>Angie Wolfgang</b> , PSU
3:30-3:45	Break
3:45-4:15	<i>Disentangling Overlapping Astronomical Sources using Spatial, Spectral, and Temporal Information</i> <b>David Jones</b> , SAMSI
4:15-4:45	Panel Discussion <b>Jessi Cisewski</b> , Yale; <b>Sujit Ghosh</b> , SAMSI; <b>Jogesh Babu</b> , PSU
5:00	Shuttle to Hotel

## Tuesday, August 23, 2016

### Hamner Conference Center

- 8:45-9:00 Registration
- 9:00-10:00 *Separating Stellar Activity from Doppler Shifts*  
**Paul Robertson**, PSU
- 10:00-10:30 Break
- 10:30-11:30 *Constructing Flexible Likelihood Functions for Spectroscopic Inference in the Systematics-Dominated Regime*  
**Ian Czekala**, Harvard
- 11:30-12:00 *Using Bayesian Computing to Solve a Complex Problem in Astrophysics*  
**David Stenning**, SAMSI
- 12:00-12:15 Panel Discussion  
**Eric Feigelson**, PSU; **Jessi Cisewski**, Yale
- 12:15-1:15 Lunch
- 1:15-2:15 *Gravitational Wave Astronomy with Ground-based Detectors*  
**John Veitch**, University of Birmingham
- 2:15-3:15 *Pulsar Timing Arrays and Detection of Nanohertz Gravitational Waves*  
**Jim Cordes**, Cornell
- 3:15-3:45 Break
- 3:45-4:45 *Characterization of GW Transients*  
**Ben Farr**, University of Chicago
- 4:45-5:15 Panel Discussion  
**James Long**, Texas A&M; **Michele Vallisneri**, NASA; **Merlise Clyde**, Duke
- 5:15 Shuttle to Hotel

## Wednesday, August 24, 2016

### Hamner Conference Center

- 8:45-9:00 Registration
- 9:00-10:00 *Inference for non-Stationary, non-Gaussian, Irregularly-Sampled Processes*  
**Robert Wolpert**, Duke
- 10:00-10:30 Break
- 10:30-11:30 *Beyond Stationary Gaussian Processes: An overview of model based non-Gaussian time series analysis - AR, ARIMA, ARfIMA, GARCH, ...*  
**Soumen Lahiri**, NCSU

- 11:30-12:00 *Bayesian Estimates of Time Delays between Gravitationally Lensed Stochastic Light Curves and Time Delay Challenge II*  
**Hyungsuk Tak**, SAMSI
- 12:00-12:15 Panel Discussion  
**Eric Ford**, PSU **Jeff Scargle**, NASA **Eric Feigelson**, PSU
- 12:15-1:15 Lunch
- 1:15-2:15 *Statistical Challenges in Cosmology*  
**Elisabeth Krause**, Stanford University
- 2:15-3:15 *Hierarchical Bayesian Models for Type Ia Supernova Cosmology*  
**Kaisey Mandel**, Harvard–Smithsonian Center for Astrophysics
- 3:15-3:45 Break
- 3:45-5:00 Lightening Talks: 2-5-minute talks by participants presenting posters  
Moderator: **Sujit Ghosh**, SAMSI
- 5:00-7:00 Poster Session/Reception
- 7:00 Shuttle to Hotel

**Thursday, August 25, 2016**

[Hamner Conference Center](#)

- 8:45-9:00 Registration
- 9:00-10:00 *Nonparametric methods for Irregularly Spaced Non-Gaussian Spatial Data Analysis*  
**Soumen Lahiri**, NCSU
- 10:00-10:30 Break
- 10:30-11:30 *Time Series Explorer: Bayesian Blocks with Generalized Profiles and in Higher Dimensions*  
**Jeff Scargle**, NASA
- 11:30-12:30 *Multi-Epoch Source Detection*  
**Tamas Budavari**, JHU
- 12:30-12:45 Panel Discussion  
**Ashish Mahabal**, Caltech; **Matthew Graham**, Caltech; **Bekki Dawson**, PSU;  
**Ilya Mandel**, U Birmingham; **Will Farr**, University of Birmingham, UK
- 12:45-1:45 Lunch

- 1:45-4:30            Working Groups: **Sujit Ghosh**, SAMSI; **G. Jogesh Babu**, PSU
- Working Group I: Moderator – **Tom Lored**, Cornell  
*Uncertainty Quantification and Reduced Order  
Modeling in Gravitation, Astrophysics, and Cosmology*
- Working Group II: Moderator - **Ashish Mahabal**, Caltech  
*Synoptic Time Domain Surveys*
- Working Group III: Moderator – **Ben Farr**, University of Chicago  
*Time Series Analysis for Exoplanets & Gravitational Waves: Beyond Stationary  
Gaussian Processes*
- Working Group IV: Moderator – **Eric Ford**, PSU  
*Population Modeling & Signal Separation for Exoplanets & Gravitational Waves*
- Working Group V: Moderators - **Joe Guinness**, NCSU/**Elisabeth Krause**,  
Stanford  
*Statistics, Computation, and Modeling in Cosmology*
- 4:30-5:00            Discussion
- 5:00                    Shuttle to Hotel

**Friday, August 26, 2016**

SAMSI

- 9:00-10:00            Wrap-up and Formation of Working Groups
- 10:00-12:00           Initial Working Group Meetings
- 12:00→                Lunch, Shuttle to RDU Airport