Friday, October 4, 2019

8:00 – 8:45  Arrival and Registration

8:45 – 9:00  Welcoming Remarks
Frederick Antczak, Dean
College of Lib. Arts and Sci.
Chair: Bob Wald (UChicago)
Leo Stein (Mississippi)

9:00 – 10:30  Session 1
Numerical binary black hole collisions in dynamical Chern-Simons gravity
Leo Stein (Mississippi)
Modeling Subgrid MHD Turbulence with Artificial Neural Networks (G)
Shawn Rososky (UIUC)
Magnetic Braking and Damping of Differential Rotation in Massive Stars (G)
Lunan Sun (UIUC)
Effects of spin on magnetized binary neutron star mergers and jet launching
Milton Ruiz (UIUC)
Dynamically stable ergostars
Antonios Tsokaros (UIUC)

10:30 – 10:50  Coffee Break

10:50 – 12:20  Session 2
Spin Self-Force (G)
Kristian Mackewicz (UChicago)
EMRI Waveforms: Efficient Self-Force Calculations
Anna Heffernan (Perimeter/Guelph)
Finite Size Effects On The Self-Force (G)
Klaountia Pasmatsiou (Case Western)
Dynamical gravitomagnetic tidal response of a rotating, barotropic star (G)
Simon Pekar (Perimeter/Guelph)
Black hole hairstyle excitations (G)
Pablo Bosch Gomez (Perimeter/Waterloo)

12:20 – 2:10  Lunch (on your own)

2:10 – 3:25  Session 3
Generating Physically Realistic Neutron Star Initial Data (U)
Grace Fiacco (RIT)
and Trung Ha (Rochester)
Microgravity Effects in Human Body (U)
Tanmoy Chakraborty (Zhengzhou Univ)
Solving Time Travel Paradoxes (U)
Jacob Hauser (Pomona)
Signal Overlays for Evaluating Continuous Gravitational Wave Candidates (U)
Grant Weldon (Michigan)

3:25 – 3:45  Coffee Break

3:45 – 5:35  Session 4
Thermodynamics of Lorentzian Taub-NUT spacetimes (G)
Alvaro Ballon Bordo (Perimeter)
The North American Nanohertz Observatory for Gravitational Waves (NANOGrav) Pulsar Timing Array
Timothy Dolch (Hillsdale)
Constraining Galaxy Merger Histories in the Local Universe with Pulsar Timing Arrays
Sarah Vigeland (UW Milwaukee)
AGN: Laboratory for Gravitational Physics
Ashkbiz Danehkar (Michigan)
Cosmic expansion from spinning black holes (G)
Chi Tian (Case Western)
Applications of Machine Learning to Grav. Physics (G)
Tim Whittaker (Perimeter/Waterloo)

5:35 – 8:00  Dinner (on your own)

8:00 – 9:00  Public Lecture:  Black Hole Myths and Mysteries
(Loosemore Auditorium, DeVos)
Leo Stein (University of Mississippi)
Saturday, October 5, 2019

9:00 – 10:30  
**Session 5**  
Chair: Sarah Vigeland (UWM)  
Laura Sberna (Perimeter)

*Environment effects in multi-band detections of black hole binaries (G)*  
Laura Sberna (Perimeter)

*Can environment effects spoil detection of stellar-origin massive black hole binaries? (G)*  
Alexandre Toubiana (APC/IAP, Paris)

*Testing exotic cosmology models with future Gravitational Wave siren data (G)*  
Maxence Corman (Perimeter)

*The Memory Effect and Infrared Divergences in Quantum Gravity (G)*  
Gautam Satishchandran (UChicago)

*Determination of The Static Scalar and Electromagnetic Self-Force From Conical Singularities (G)*  
Michael LaHaye (Guelph)

10:30 – 10:50  
**Coffee Break**

10:50 – 12:20  
**Session 6**  
Chair: Shane Larson (CIERA)

*Testing Lorentz violation in the Earth’s gravitational field (G)*  
Zonghao Li (Indiana)

*Local and covariant flow relations for OPE coefficients in curved spacetime (G)*  
Mark Klehfoth (UChicago)

*Lorentz Transformations and Existence in Minkowski Spacetime*  
Armin Nikkhah Shirazi (Michigan)

*On the relationship between symmetry of metric and symmetry of matter (G)*  
Fatemeh Bagheri (Texas - Arlington)

*Spacetime Decomposition Methods for GR (G)*  
Soham Mukherjee (Perimeter)

12:20 – 2:10  
**Lunch (on your own)**

2:10 – 2:30  
**Coffee Break and Blue Apple Award Ceremony (Best Student Talk)**

2:30 – 4:20  
**Session 7**  
Chair: Ben Holder (GVSU)

*Solid state analogs for LQG and string theory*  
Stephen Harnish (Bluffton)

*General Relativity and the Dirac Equation*  
Thomas Brennan (Ferris State)

*LISA as a Probe of Stellar Astrophysics*  
Shane L. Larson (CIERA/Northwestern)

*Asteroid effects on LISA*  
Brett Bolen (GVSU)

*3+1 Decomposition of General Relativity for a Scalar Field Using Mathematica*  
George E. Hrabovsky (MAST)

*Meta Relativity*  
Rick DeWitt

4:20 – 4:30  
**Wrap-up and Farewell**