

SESSION A – Saturday, 9:00am

Facilitator: Dr. Amanda Nienow, Gustavus Adolphus College, Chemistry

Kersten Physics Teaching Center, Room 120

# of Presenter	Presenter Name	College / University	Title of Presentation
A.1 (9:00)	Brandon Furey	Gustavus Adolphus College	Comparing SEBAL and METRIC: Evapotranspiration models applied to Paramount Farms almond orchards
A.2 (9:15)	Emily Seelen	Gustavus Adolphus College	Mercury and Metal Cycling in an Ombrotrophic Peatland
A.3 (9:30)	Kyle Alexander	Hope College	Sediment Fingerprinting of Lake Macatawa using PIXE and other Quantitative Analysis Techniques
A.4 (9:45)	Bryce Ingram	Colorado College	Quantification of PBDE Tissue Concentration in a High-Dose Postnatal Diet in Rats
BREAK (10:00-10:15)			
A.5 (10:15)	Katherine Boknevitz	Lawrence University	Evaluation of the reduction of nitric acid by humic substances
A.6 (10:30)	Will Ksander	Beloit College	Total Synthesis of Apoptolidin A
A.7 (10:45)	Allie Hunter	Beloit College	Monte Carlo Simulation of the Interfacial Free Energy of a Hard-Sphere Fluid at a Convex Hard Wall

SESSION B – Saturday, 9:00am

Facilitator: Dr. Erlan Wheeler, Carthage College, Mathematics

Kersten Physics Teaching Center, Room 105

# of Presenter	Presenter Name	College / University	Title of Presentation
B.1 (9:00)	Nathan Fulton	Carthage College	Event-based Version Control
B.2 (9:15)	Philip Quinan	The University of Chicago	A Declarative Shader Specification for Standard ML
B.3 (9:30)	Zachary Butler Dugan Knoll	Grinnell College	A robust system for discovering text baselines in scene text images
B.4 (9:45)	Sam Estrem	Lawrence University	AIRS: Anytime Iterative Refinement of a Solution
BREAK (10:00-10:15)			
B.5 (10:15)	Madeline Barnicle	University of Chicago	Properties of solutions to the generalized Airy equation on time scales
B.6 (10:30)	Elden Elmanto	The University of Chicago	2-Dimensional Lattice Topological Field Theories: A Diagrammatic Approach
B.7 (10:45)	Jonathan Gleason	The University of Chicago	The F^* -algebraic Formulation of Quantum Mechanics
B.8 (11:00)	Daphne Kao	University of Chicago	Angle Spectra of Flat 2-Tori

SESSION C – Saturday, 9:00am

Facilitator: Dr. Ted Gries, Beloit College, Chemistry

Kersten Physics Teaching Center, Room 103

# of Presenter	Presenter Name	College / University	Title of Presentation
C.1 (9:00)	Mitch Eagles	Washington University in St. Louis	NMR Analysis of N3-phase Magnesium Borohydride and its High Temperature Transform Product
C.2 (9:15)	Yijun Tang	Wabash College	Deterministic generation and optical levitation of single water droplet
C.3 (9:30)	Wei Jia Ong	Washington University	Isotopic and Elemental Characterization of Presolar Grains in Acfer 094
C.4 (9:45)	Francis Bothfeld	Grinnell College	The Effects of the Pacific Decadal Oscillation on Surface Elevation of Continental Glaciers
Break 10:00 – 10:15			
C.5 (10:15)	Omoluyi Adesanya	The University of Chicago	Self-Monitoring Glucometer Devices Versus GBP (Glucose Binding Proteins): Developing an Alternative Biosensor to Monitor Blood Glucose Levels in Diabetic Patients
C.6 (10:30)	Tianxiang Lui	Grinnell College	Determination of the Dihedral Angles in Predominantly trans 1,2-Disubstituted Ethane Systems Using NMR Spectroscopy
C.7 (10:45)	Jordan DeGayner	Colorado College	Nonheme Iron-Catalyzed Alkene cis-Dihydroxylation: Kinetics and the Effects of Additives

SESSION D – Saturday 1:30pm

Facilitator: Dr. Paul Stanley, Beloit College, Physics

Kersten Physics Teaching Center, Room 103

# of Presenter	Presenter Name	College / University	Title of Presentation
D.1 (1:30)	Kimberly Schultz	Carthage College	Simulation of polarization switching in a ferroelectric nanowire through shaped terahertz pulses
D.2 (1:45)	Lauren Snyder and Rebecca Gobel	St. Olaf College	Geophysical Characteristics Of An Active Antarctic Subglacial Lake Revealed By Ground Penetrating Radar
D.3 (2:00)	Xiyu Du	Beloit College	Standing ripple rings within the super-critical flow region of a circular hydraulic jump
D.4 (2:15)	John Schmidt	Gustavus Adolphus College	Characteristic frequency analysis of a macroscopic cantilever in water and in air
Break 2:30 – 2:45pm			
D.5 (2:45)	Donald Lee-Brown	Luther College	Population Heterogeneity in Newly-Discovered Variable Stars in the Field of Open Star Cluster M23
D.6 (3:00)	Morgan Rehnberg	Beloit College	Detecting Near-Earth Asteroids With PhAst, A New Software Tool
D.7 (3:15)	Walter Buhro	Washington University	Elementary Model of the Damping of Gravitational Radiation Emitting Modes in Neutron Stars
D8 (3:30)	Anastasia Belozertseva and Summer Blot	The University of Chicago	Reconstruction of the trajectory of muons for the International Muon Ionization Cooling Experiment

SESSION E – Saturday 1:30pm

Facilitator: Dr. Doug Martin, Lawrence University, Physics

Kersten Physics Teaching Center, Room 120

# of Presenter	Presenter Name	College / University	Title of Presentation
E.1 (1:30)	Meagan Elinski	Hope College	A Quantitative Analysis of the Growth of Metal-Organic Coordinated Multilayers
E.2 (1:45)	Ari Jacobs	Beloit College	Hydrothermal Synthesis of Zinc Oxide Nanowires
E.3 (2:00)	William Perreault	Grinnell College	Electrochemical Impedance Studies of Time-based Equilibrium in Fluorine-doped Tin Oxide Thin Films
E.4 (2:15)	William Letsou	The University of Chicago	Diffusion of Second Harmonic Hot Spots in Silver Island Films
Break 2:30 – 2:45pm			
E.5 (2:45)	Aaron Wright	Lawrence University	The Music of Plasma
E.6 (3:00)	James Darrell	Lawrence University	Sensing ghostly plasma: Diagnosing toroidally confined pure electron plasma using waves
E.7 (3:15)	Michael Baumer	The University of Chicago	Studies of Z Boson Production at the LHC with the ATLAS Detector
E.8 (3:30)	Brian Ree	Macalester College	Electrically bistable, non-volatile memory device fabricated with high performance polyimide bearing carbazole moieties