Seniors Present Thesis Work for Inaugural Course

Working with faculty advisors and under the mentorship of Dr. Phillips, our seniors each produced a research thesis and presented their work at a public defense. Kudos to Dr. Phillips for his hard work in designing and running this exciting new course!

LMU Physics Class of 2014: (Left to Right) Kevin Osorno, Jared Fier, Sean Meechan, Dante Sblendorio, Celia Burstein, and Max Isi.

Thesis Projects and Future Plans

Celia Burstein: “Conformal Gravity and the Alcubierre Warp Drive” (Advisor: Dr. Varieschi). Celia will commence Ph.D. studies in physics at the University of Chicago, where she plans to study condensed matter theory.

Jared Fier: “Turbulence in Two-Dimensional Fluids” (Advisor: Dr. Phillips). Jared has been accepted to Baylor University in Waco, Texas, to study theoretical physics.

Maximiliano Isi: “Self-Completeness and the Generalized Uncertainty Principle” (Advisor: Dr. Mureika). Max will pursue his Ph.D. at the California Institute of Technology, studying gravitational wave tests of alternate theories of gravity.

Sean Meechan: “Efficient Methods for Commercial Production of Carbon Nanotubes” (Advisor: Dr. Berube). Sean plans to work in industry for a few years, and is considering potential careers in nanotechnology or aerospace.

Kevin Osorno: “Evaluating Tutors’ Abilities to Detect Confusion in Computer Mediated Learning Environments” (Advisor: Dr. Phillips). Kevin will attend the University of California, Riverside, where he will pursue Ph.D. studies in positronium condensation or superconducting graphene sheets.

Dante Sblendorio: “Planar Array Field Assisted Positron Moderation” (Advisor: Dr. Phillips). Dante will continue his employment with Positron Dynamics, assisting with the development of novel in-space propulsion technology.

Celia Burstein Named LMU Scholar of the Year

We are proud to announce that Celia Burstein was chosen as the 2014 LMU Scholar of the Year! Celia tells us: “For me, the award is a testament to the strength of the Physics Department -- the professors here inspired me to value persistence and patience as I search to find my place in physics.” This is an incredible – and well-deserved – achievement! Congratulations, Celia!

Max Isi Delivers Board of Trustees Address

Showcasing the importance of the LMU Honors Program’s support for student research, Max Isi had the privilege of an invited audience with LMU’s Board of Trustees. He notes: “These opportunities are rarely given to undergraduates in any other institution, and I cannot stress enough how important they have been for me, both professionally and personally.”

Well done, Max, and best of luck at Caltech!
**Faculty Corner**

**Publications, Preprints, Proceedings**

(* = LMU student co-author)


**Posters, Colloquia, & Seminars**

J. Phillips and K. Osorno*, Poster: “Examination of Students’ Self-Monitoring in Problem Solving” *Fall Meeting of the SCAAPT*, Pasadena, CA (9 Nov 2013) and SCCUR, Whittier, CA (23 Nov 2013)


J. Phillips, Invited talk: “How to Know What We Know – Metacognition”, Faculty Center, Cal Poly Pomona (21 Jan 2014)

J. Mureika, Invited talk: “Black Hole Remnants: Why are these cold objects such a hot topic?”. Department of Physics and Astronomy, University of Waterloo, Canada (5 Mar 2014)


J. Mureika, Invited talk: “Exact Thermodynamics of GUP Black Holes,” Department of Mathematics and Statistics, University of New Brunswick, Canada (16 Apr 2014)

J. Mureika, Invited talk: “Primordial Black Holes and Spontaneous Dimensional Reduction,” Department of Mathematics and Statistics, UNB, Canada (17 Apr 2014)

**Funding News**

Drs. Berube and Sanny have been awarded a CSE Continuing Faculty Grant to study the distribution of ultra low frequency wave power in the magnetosphere during magnetic storms. A proposal based on the results of this investigation will be submitted to the NSF.

Dr. Mureika held a Seaver Research Fellowship during the Spring semester, through which he carried out research with colleagues in Canada (Perimeter Institute for Theoretical Physics, University of Waterloo and University of New Brunswick) and England (Queen Mary University of London and University of Sussex).

**Sixth LMU Undergraduate Research Symposium**

A number of our students participated in this year’s Research Symposium on March 29th, presenting work on a variety of topics. Congratulations to all!

**Physics Majors:**

Max Isi, Will Eberts, Robert Quin Thames, “Nuclear Fusor” (Advisor: Mr. Anatol Hoemke)

Martin Tangeli and Rhys Taus, “Theoretical Framework for Operating a Betatron” (Advisor: Dr. Berube)

Kevin Osorno, “Evaluating Tutors’ Abilities to Detect Confusion in Computer Mediated Learning Environments”, “Examination of Student’s Self-Monitoring in Problem Solving” (Advisor: Dr. Phillips)

Dante Sblendorio, “Identifying the Factors of Problem Complexity” (Advisor: Dr. Phillips)

Rhys Taus, “Evaluating the Field Emission Characteristics of Aluminum for DC High Voltage Photo-Electron Guns” (Advisor: M. Poelker)

**Physics Minors:**

Bianca Malsapina and Travis Whyte, Circular Dichroism for Monitoring the Conformational Changes of Amyloidogenic Islet Amyloid Polypeptide


Marc Papakyriakou, "The Effects of Hydrogen Charging on Charpy Impact of 4340 Steel"

Matt Fumo, Timothy Barrow, Matt Goodman, “Design and Implementation of a General Control System Platform for Educational Purposes”

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Event Horizons - Spring 2014   Editor: Jonas Mureika   Email: jmureika@lmu.edu   Web: http://cse.lmu.edu/departments/physics