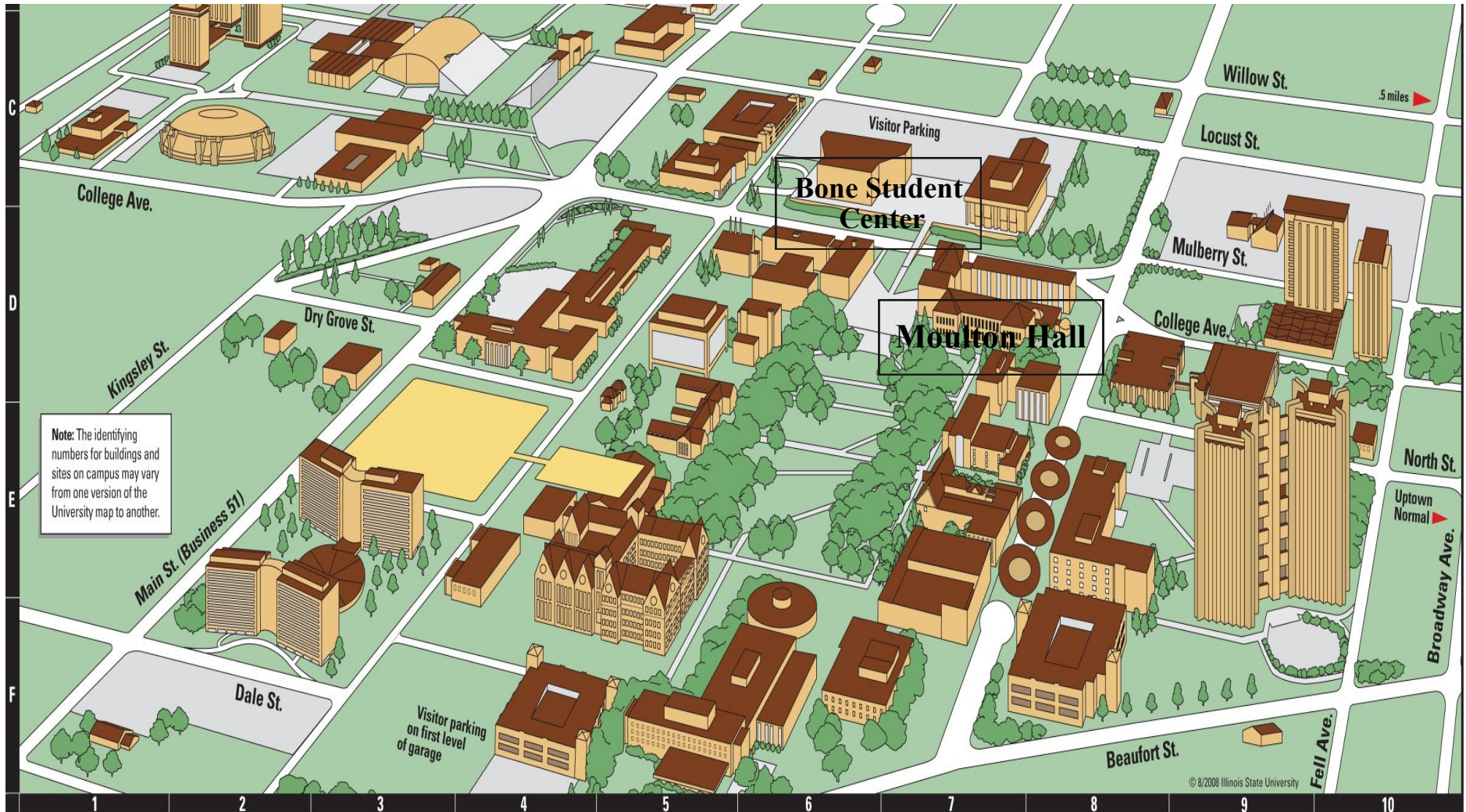




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2025 UNIVERSITY RESEARCH SYMPOSIUM
Saturday, April 12, 2025
DEPARTMENT OF PHYSICS ORAL PRESENTATIONS



(D7) Moulton Hall: Department of Physics Oral Presentations 8:00 a.m. - 11:30 a.m. Room 309

The oral presentations for the Department of Physics will take place on Saturday, April 12, 2025.

DEPARTMENT OF PHYSICS

Oral Presentations (Saturday, April 12, 2025)
Moulton Hall 309

Faculty mentors: Prof. M. Caplan, Prof. N. Christensen, Prof. A. Harris, Prof. R. Grobe, and Prof. Q. Su

8:00-8:15
Andy Santarelli

NEW 1D MODELS OF QAUSI-STARS

8:15-8:30
Claire Campbell

ENVELOPE WINDS AS A LIMITING FACTOR ON SUPERMASSIVE BLACK HOLE FORMATION IN QUASI-STARS

8:30-8:45
Lane Nichols

QUASI-STAR MESA MODELS - REFINING BOUNDARY CONDITIONS, IMPLEMENTING ENVELOPE ACCRETION

8:45-9:00
Eyan James

INHERITED LEARNING IN NEURAL NETWORKS AND ITS APPLICATION TO QFT VACUUM STATES

9:00-9:15
Carter West

USING NEURAL NETWORKS TO SOLVE ORDINARY AND PARTIAL DIFFERENTIAL EQUATIONS

9:15-9:30
Alexander Hardaway

ANALYSIS OF MINIMA IN THE COMPLEX PARAMETER SPACE LANDSCAPE OF NEURAL NETWORKS

Break (9:30-9:45)

DEPARTMENT OF PHYSICS

Oral Presentations
(Continued)

9:45-10:00
James Aygun

EFFECT OF THIRD-ORDER PHASE ON THE PHOTOELECTRON MOMENTUM SPECTRUM AND IONIZATION
TIME DELAY IN A HYDROGEN ATOM AND DIATOMIC MOLECULE

10:00-10:15
Samantha Sims

SCULPTED LASER PULSES ALTER THE ELECTRON DYNAMICS IN
ABOVE THRESHOLD IONIZATION

10:15-10:30
Gabriel Minney

DIAGRAM GENERATION FOR SPINOR AMPLITUDE SUBROUTINES

10:30-10:45
Dany Yaacoub

UNIVERSAL DIFFUSION IN COULOMB CRYSTALS

10:45-11:00
Levi Webb

ISOLATING DIFFUSION COEFFICIENTS OF LATTICE DEFECTS IN COULOMB CRYSTALS

11:00-11:15
Nevin Smith

MOLECULAR DYNAMICS SIMULATIONS OF THE VORTEX-LATTICE INTERACTION IN NEUTRON STAR CRUSTS

11:15-11:30
Helen Parker

USING MACHINE LEARNING TECHNIQUES TO PREDICT MOLECULAR COLLISION CROSS SECTIONS

End of 2025 University Research Symposium, Department of Physics Oral Presentations