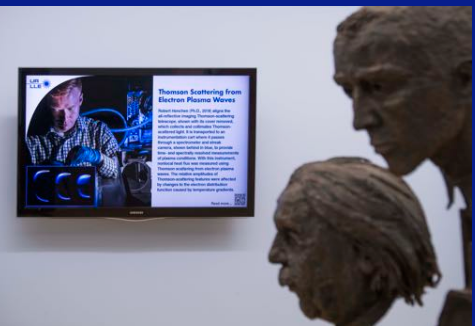
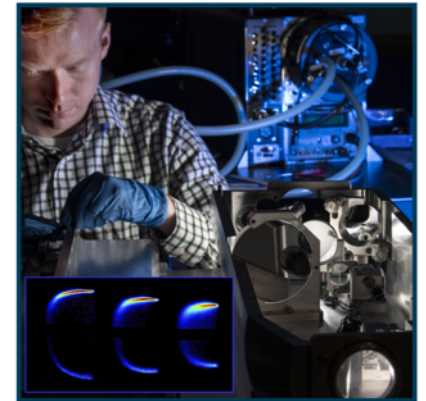


Dr. Robert Henchen received his Ph.D. in Plasma Physics from the University of Rochester's Department of Mechanical Engineering in 2018. He started his graduate school journey in 2011 after graduating magna cum laude from the State University of New York at Geneseo, with Bachelor of Arts degrees in mathematics and physics. He was awarded the Frank J. Horton Fellowship to study at the Laboratory for Laser Energetics under the direction of Prof. Dustin Froula.

Dr. Henchen's Ph.D. research resulted in the first direct measurements of heat flux in laser-produced plasmas and experimentally demonstrated the validity of classical thermal transport [R. J. Henchen et al., *Physical Review Letters* 121, 125001 (2018)]. His recognition that the Thomson-scattering spectral peaks, representing the natural collective electron-plasma wave motion in a plasma, could be used to determine the electron distribution function was integral in making these pioneering measurements. Starting in the 1970's, Vlasov-Fokker-Planck simulations were used to understand the limitations of classical thermal transport models implemented in hydrodynamic codes, but until Robert's results there were no measurements to quantitatively test simulations. Not only is Robert's research being used to test thermal transport modeling, but the novel concept has opened a powerful avenue for measuring arbitrary electron distribution functions and has enabled recent measurements that have isolated the interplay between laser-plasma interactions and hydrodynamics. During his graduate research, Robert's expertise in Thomson scattering contributed to six publications and his novel contributions to the field are already being extended to provide further impact to inertial confinement fusion.



Cover photo from the LLE Review displayed in LLE's main lobby



Peter Benvenuto, Michael Henchen, Robert Henchen, Joan Henchen, Marcy Benvenuto, Donald Henchen



Aaron Hansen, Armand Colaitis, David Turnbull, Marcy Benvenuto, Peter Benvenuto, Donald Henchen, Joan Henchen, Michael Henchen, Robert Henchen, Dustin Froula, Alex James, Sara Bucht, Mike Campbell, Steve Ivancic, Andy Davies, Philip Franke, Jessie Shaw, Joe Katz, John Palastro, Avram Milder, Dana Edgell

Thesis Defense

Dr. Robert Henchen

10 October 2018

Laboratory for
Laser Energetics

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by eugene kowaluk