

APL Graduate Summer Intern 2023

Hypersonic Aerothermodynamics Focus

Technical Point of Contact (TPOC): Daniel Araya (daniel.araya@jhuapl.edu)

Deadline to apply: February 28, 2023

Description:

Seeking a highly qualified graduate student with expertise in the areas of either 1) hypersonic boundary layer transition computations; or 2) hypersonic turbulence simulation. The selected student will work at APL for approximately 3 months during the summer of 2023 alongside an APL mentor. The student will perform boundary layer transition or turbulence simulations and analyses, compare predictions with experimental data, and work to assess and improve the performance of models/codes as necessary. The student's activities will have a research focus that will complement their graduate research.

For a boundary layer transition focus, applicants should have expertise and experience with CFD, meshing, and linear stability analysis, as well as knowledge of hypersonic boundary layer instability physics. For a hypersonic turbulence focus, applicants should have experience with turbulence modeling and execution of DNS, LES, WMLES, or other detailed simulation approach. Interested students are invited to apply or gather additional information by contacting the APL point of contact.

Eligibility:

- Must be a U.S. citizen capable of obtaining a security clearance.
- B.S. in Aerospace Engineering, Mechanical Engineering, Physics, Applied Mathematics, or other relevant technical discipline.
- Approval from academic research advisor
- Strong preference for PhD students with at least 1 year of research experience; highly qualified masters-level students are also encouraged to apply.

Required Skills:

- Research experience in the areas of boundary layer transition or hypersonic turbulence.
- Strong oral and written communication skills.
- Experience with high performance computing, linux, and Matlab or python scripting.
- Computer programming skills/experience with Fortran, C, or C++ desired.
- High initiative, motivation, flexibility, and ability to work in a fast-paced team environment.

Benefits:

- 3-month, full-time employee status with security clearance and competitive salary.

Application Instructions:

- Interested applicants should send a brief e-mail to the technical point of contact summarizing their graduate research background and confirming that they meet the eligibility requirements.