Damyn **Chipman**

PhD Student · Computational Scientist

DamynChipman@u.boisestate.edu | GitHub: DamynChipman | LinkedIn: Damyn Chipman

Education

Boise State University

Expected Graduation: 2023

PhD in Computing — *Boise, ID*

- Emphasis: Computational Sciences and Engineering
- Current Research: Fast and Scalable Direct Elliptic Solvers on Adaptive Meshes

Brigham Young University

April 2019

Bachelor of Science in Applied Physics — *Provo, UT*

- Emphasis: Computational Physics and Engineering
- Senior Thesis: Aerodynamics Modeling Using a Mesh-Free Approach

Work and Research Experience

Lawrence Livermore National Laboratory (LLNL)

May 2021 - August 2021

High Energy Density Physics Graduate Intern — *Livermore, CA*

- Aligned LLNL's nuclear data codes FUDGE and GIDI+ for improved productivity and accuracy
- Contributed several new features and hundreds of verified and tested lines of code
- Presented results during end of summer SLAM presentations to lab directorate

Mission Support and Test Services (MSTS), LLC

June 2019 - August 2020

Associate in Science — *Las Vegas, NV and Livermore, CA*

- Supported multiple projects with a computational emphasis to develop tools for mission critical diagnostic equipment
- Implemented an axis correction algorithm using machine learning techniques
- Developed an image processing software package for neutron image data analysis
- Presented work at Lawrence Livermore National Laboratory and for the Senior Leadership Team and Directorate of MSTS

Boise State University Mathematics Department

August 2019 - December 2019

Graduate Assistant — *Boise, ID*

- Assist in teaching upper-level undergraduate course in scientific computing

Flight, Optimization and Wind (FLOW) Lab

April 2018 - May 2019

Research Assistant — *Provo, UT*

- Designed and developed a Vortex Sheet Boundary package (VSB.jl) for Vortex Particle Method Integration
- Modeling of Propeller-Wing Interaction using Radial Basis Functions for Mesh-less and Panel Free Analysis with Vortex Particle Method

Advanced Power Cycles Lab

June 2016 - April 2018

Research Assistant — *Provo, UT*

- Developed a 1, 2, and 3-Stage Optimized Rankine Power Cycle model for Nuclear Power Application
- Assisted in formulation, testing, and verification of Water-Ammonia Thermodynamic Property Package code

Brigham Young University Physics Department

August 2016 - April 2018

Teaching Assistant — *Provo, UT*

- Assisted professors in teaching and grading for introductory to advanced physics classes, including computational physics lab sequence
- Implemented new teaching program for 150+ students
- Oversaw sections of 20-30 students as Recitation Section Leader

Publications and Conferences

2021 **D. Chipman**, et al. FUDGE and GIDI+: Aligning LLNL's Nuclear Data Codes and API. LLNL SLAM Presentation. Livermore, CA.

2021 **D. Chipman**, D. Calhoun. Progress Towards a Fast, Scalable, and Direct Elliptic PDE Solver for Adaptive Meshes. SIAM CSE 2021 Conference Presentation.

2020 Durand, Alice, **et al.** High-Fidelity Dynamic Neutron Imaging and Radiography for Subcritical Experiments and Other Applications. No. DOE/NV/03624-0829. Nevada National Security Site/Mission Support and Test Services LLC; Las Vegas, NV (United States), 2020.

2020 **D. Chipman**, et al. Characterizing On-Axis X-Ray Spectra with Off-Axis Detectors. Mission Directorate Presentation. Las Vegas, NV.

2019 **D. Chipman**, et al. Image Processing and Reconstruction of Neutron and X-Ray Images. Senior Leadership Team Presentation. Las Vegas, NV.

2019 **D. Chipman**, et al. Aerodynamics Modeling Using a Mesh-Free Approach. Utah Conference for Undergraduate Research Presentation. Ogden, UT.

2019 **D. Chipman**, et al. Aerodynamics Modeling Using a Mesh-Free Approach. BYU Student Research Conference Presentation. Provo, UT.

2018 **D. Chipman**. Energy... It's Everywhere! Forms of Energy - Sound, Light, Heat, and Electricity. STEMTaught Elementary School Journal.

Honors and Awards

2020 MSTS Hot Shot Award for Exceptional Work

2019 Boise State University Graduate Assistant Fellowship

2019 Brigham Young University Graduate Assistant Fellowship

2013 Eagle Scout Award from Boy Scouts of America

Skills and Goals

Programming C/C++, Python, MATLAB, Fortran, Julia, Mathematica, Git, LaTex

Numerical Finite Difference/Element/Volume Methods, Machine Learning, Image Processing, Data Processing, Numerical Optimization

Software MPI, OpenMP, CUDA, LAPACK, FUDGE, GIDI+, NJOY, MOOSE, p4est, ForestClaw, ParaView

Languages English, Spanish

Effective Be an effective and hard working example of the establishment that I represent

Efficient Efficiently solve any problem presented to me through effective problem solving skills

Optimistic Always maintain an optimistic attitude when working; individually and in teams

Dedicated Challenge myself by developing additional talents and seeking more knowledge

Volunteer Work

Boise State University Graduate College

January 2021 - Present

Peer Mentor — *Boise, Idaho*

- Participate in direct mentoring of new graduate students
- Assist and collaborate with other peer mentors

The Church of Jesus Christ of Latter-day Saints

January 2020 - Present

Youth Leader — *Boise, Idaho*

- Assist in overseeing youth activities and teaching
- Plan and organize events for youth

The Church of Jesus Christ of Latter-day Saints

August 2013 - August 2015

Volunteer Missionary — *Mexico City, Mexico*

- Served as religious representative in the Mexico City Northwest Mission, providing large and small scale community service
- Oversaw 20-30 other volunteers through training in communication, problem solving, and volunteer strategy

Las Vegas Bureau of Land Management

February 2011 - May 2011

Eagle Scout — *Las Vegas, NV*

- Organized over 300 volunteers for large scale cleaning project at Mount Charleston in Las Vegas
- Trained local site leaders in safety precautions and project procedures

Clubs and Societies

SIAM	Society of Industrial and Applied Mathematics (Boise State Chapter)
BSUA	Boise State University Alpine Club
ANS	American Nuclear Society (Brigham Young University Chapter)