

CURRICULUM VITAE

Alan Clark Calder

Mailing address:

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Nationality: U.S. Citizen

Education

Doctor of Philosophy in Physics, Vanderbilt University, August, 1997.

Dissertation: *Multidimensional Simulations of Core Collapse Supernovae Using Multigroup Neutrino Transport.*

Master of Science in Physics, Vanderbilt University, December, 1993.

Master of Science in Physics, Clemson University, August, 1991.

Thesis: *Visual Characterization of the Nodal Surfaces of Many-Fermion Systems.*

Bachelor of Science in Physics, University of the South, May 1989.

Honors Research Report: *Dielectric Properties of Puddings.*

Academic Positions

Professor, Department of Physics and Astronomy, Stony Brook University, Fall 2022 – present

Deputy Director, Institute for Advanced Computational Science, Stony Brook University, Spring 2015 –

Graduate Faculty Member, University of Alabama, 2015-2018.

Associate Professor, Department of Physics and Astronomy, Stony Brook University, Fall 2013 – Spring 2022

Assistant Professor, Department of Physics and Astronomy, Stony Brook University, Fall 2007 – Spring 2013.

Senior Research Scientist, Department of Physics and Astronomy, Stony Brook University, Spring 2007.

Research Scientist, Department of Astronomy and Astrophysics, University of Chicago, 2001 – 2006.

Instructor, Liberal Arts Department, School of the Art Institute of Chicago, 2004 – 2006.

Guest Faculty, Mathematics and Computer Science Division, Argonne National Laboratory, 2000 – 2004.

Research Associate, Department of Astronomy and Astrophysics, University of Chicago, 1999 – 2001.

Research Associate, National Center for Supercomputing Applications, University of Illinois, 1997 – 1999.

Research Assistant, Department of Physics and Astronomy, Vanderbilt University, 1994 – 1997.

Consultant, Oak Ridge National Lab., 1995 – 1996.

Teaching Assistant, Department of Physics and Astronomy, Vanderbilt University, 1991 – 1993.

Research Assistant, Department of Physics and Astronomy, Clemson University, Spring and Summer of 1991.

Teaching Assistant, Department of Physics and Astronomy, Clemson University, 1989 – 1990.

Research Interests

Main Field: Theoretical Astrophysics

Other Fields of Experience: Quantum Monte Carlo, Many-Body Physics, Experimental Biophysics

Research Interests: Relativistic Astrophysics, Supernovae, Radiation Transport, Multidimensional Hydrodynamics, High Performance Computing, Scientific Visualization, Computational Science Education, Verification, Validation, and Uncertainty Quantification.

Teaching Experience

Stony Brook University:

AST 100 *Astronomy Today*. Fall 2008, Fall 2009, Fall 2010 (with M. Zingale), Fall 2011 (with M. Zingale and J. Lattimer)

AST 105 *Introduction to the Solar System*. Spring 2012, Spring 2013

AST 200 *Intro to Astronomy Research*. Spring 2009, Spring 2014 (with J. Koda), Spring 2015

AST 203 *Astronomy*. Spring 2014, Spring 2015, Spring 2016, Fall 2018

AST 205 *Introduction to Planetary Sciences*. Fall 2008, Fall 2012, Fall 2015

AST 248 *Search for Life in the Universe*. Spring 2009, Spring 2010, Spring 2011, Fall 2013, Fall 2016, Fall 2020

PHY 277 *Computation for Physics and Astronomy*. Fall 2009, Fall 2010, Fall 2011

PHY 504 *Computational Methods*. Spring 2017, Spring 2018, Spring 2019, Spring 2020, Spring 2021

PHY 521 *Stars*. Fall 2017, Fall 2019

PHY 599 *Graduate Seminar II*. Fall 2007, Spring 2008, Fall 2008, Spring 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012, Fall 2013, Fall 2016

School of the Art Institute of Chicago:

Liberal Arts 3211 *The Search for Life in the Universe*. Spring 2005, Spring 2006

Liberal Arts 3320 *Planetary Science*. Spring 2004

Thesis Advisor and Postgraduate-Scholar Sponsor:

- Undergraduate Students: Nathanael Gutierrez, Lehman College (summer REU student) (B.S. 2022); Nathan Adler, Stony Brook University (B.S. 2022); Naomi Gluck, Stony Brook University (B.S. 2021); Christopher DeGrendele, Stony Brook University (B.S. 2020); Desmond Shangase, Stony Brook University (B.S. 2018); Carlyn Augustine, University of Alabama (summer intern) (B.S. 2018); Platon Karpov, Stony Brook University (B.S. 2016); Eric Blaney, Stony Brook University (B.S. 2013); Adam Siegel, Stony Brook University (B.S. 2011);
- Graduate Students: C. Feldman, Stony Brook University (Ph.D. expected 2023); C. Eder, Stony Brook University (M.A. 2021); S. J. Andrews, Stony Brook University (M.A. 2019); D. E. Willcox, Stony Brook University (Ph.D. 2018); M. M. Hoffman, Stony Brook University (M.A. 2016); B. E. Krueger, Stony Brook University (Ph.D. 2012); A. P. Jackson, Stony Brook University (Ph.D. 2011); J. Casanova, Universitat Politècnica de Catalunya (Ph.D. 2011, thesis advisor J. José); A. Alexakis, University of Chicago (Ph.D. 2004, thesis advisor R. Rosner); A. Plasek, School of the Art Institute (MFA, 2006)

University Service

Assessment Coordinator for Data & Computational Science Adv. Cert. (IACS) Spring 2022 –

Assessment Coordinator for Science Training & Research to Inform Decisions Adv. Cert. (IACS) Spring 2022

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Research and Innovation Task Force (Strategic Budget Initiative) Fall 2020 – Spring 2021

IACS Prize Postdoc Search Committee Spring 2020 –

IACS Prize Graduate Student Search Committee Spring 2020 –

Physics and Astronomy Curriculum Emergency Task Force Spring 2020

Degree Program Assessment Cohort 2- Team Orange Spring 2020

IACS Administrator Search Committee Spring 2020

IACS Hiring Committee 2015 – 2018

IACS Curriculum Committee Fall 2013 – present

Special Olympics Club faculty advisor Fall 2018 – present

Research Computing Task Force Spring 2018

Proposal Development and Funding Opportunities Task Force Spring 2017

Departmental Grant Administrator Hiring Committee, Fall 2017 – Spring 2018
Astrophysics Postdoc Hiring Committee Fall 2017 – Spring 2018
SBU/CCA Hiring Committee Fall 2016 – Spring 2017
Accelerator Science Hiring Committee 2015 – 2016
Hiring Committee for Grants Administrator Position WC-R-8582-14-04-S Spring 2014
Departmental Colloquium Committee Fall 2012 – 2014
Astronomy Group Seminar Spring 2010, Spring 2011 – 2014
Departmental Web Committee 2007-2008, 2009 – 2016
Director, Astronomy Open Nights (Outreach) 2007 – Spring 2013
Photon Sciences Hiring Committee 2011 – 2013
Departmental Long Range Planning Committee Fall 2012
Nuclear Physics Hiring Committee 2010 – 2011
NYCCS Computer Science Faculty Search Committee 2010 – 2011
Astronomy Club faculty advisor 2008 – 2009
NYCCS Director Search Committee 2007 – 2010
CAPRA Committee 2007 – 2010
Departmental Qualifier Exam Committee 2008 – 2009
Metchev Postdoc Hiring Committee Spring 2009

Professional and Scholarly Activities

Carpentries Instructor 2019-
Reviewer for New Frontiers Initiative Graduate Fellowship Program 2021
Reviewer for the Netherlands e-Science Center and The Dutch Research Council 2020
Ad hoc (mail) reviewer for the NSF's Established Program to Stimulate Competitive Research (EPSCoR) Research Infrastructure Improvement 2020
Reviewer for U.S.-Israel Binational Science Foundation 2017, 2019
Reviewer for NSF Astronomical Sciences 2013, 2014, 2016, 2018
Reviewer for SC Technical Papers, 2014, 2015
Reviewer for NSF Blue Waters Graduate Fellowship Program 2014, 2017
Reviewer for NASA Astrophysics Theory and Fundamental Physics 2007, 2009
Editor for Computing in Science and Engineering Special Issue *Computational Astrophysics* Vol. 11, No. 2, March/April 2009
Reviewer for DOE-HEP 2009
Referee for *Astrophysical Journal*, *Astronomy & Astrophysics*, *Applied Physics Letters*, *Astronomy and Computing*, *Computing in Science and Engineering*, *Monthly Notices of the Royal Astronomical Society*, and *Journal of Computational Science Education*.

Honors, Awards, and Affiliations

2017 GPU Hackathon, AstroGPU team member, Brookhaven National Laboratory, June 5-9, 2017
Wendell G. Holladay Lecture, Vanderbilt University, November 8, 2015
Research Corporation for Science Advancement Scialog Fellow for *Scialog: Time Domain Astrophysics: Stars and Explosions*, 2015-2016
Stony Brook Department of Physics and Astronomy Outstanding Faculty Award, 2012
US DOE/NNSA Certificate of Service presented to the director and members of the University of Chicago Center for Astrophysical Thermonuclear Flashes, January 8, 2009
Judge, SC2005, SC2006 HPC Analytics Challenge
SC2000 Gordon Bell Prize, Special Category (shared)
Joseph Sheffield Memorial Society

Vanderbilt University:
Judge, Adventures in Supercomputing exposition, 1995

Vanderbilt Student Volunteers for Science, Group Leader 1994 – 1995
Vanderbilt Student Volunteers for Science, 1993 – 1994

Clemson University:
Sigma Pi Sigma
Society of Physics Students

University of the South:
Departmental Honors in Physics
Order of the Gownsmen
Sigma Pi Sigma
Society of Physics Students
Delta Kappa Epsilon National Fraternity – Tau Delta Chapter President, Fall 1988

Personal:
Eagle Scout, Awarded Fall 1985
Chicago Marathon (personal best, 03:34:52) 2006
Aikido, Shodan Awarded Apr. 30, 2022

Memberships in Professional Societies

American Astronomical Society
American Physical Society
Society for Industrial and Applied Mathematics