Geoffrey George Gaswint *April 15, 1992*

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Experience

ARIANNA
Irvine, California

Graduate Student Researcher *Apr '17 – Dec '20*

- Led science expeditions in Antarctica
- Simulation and analysis of neutrino detectors
- Trained researchers in programming and physics
- Developed and tested hardware for neutrino detectors
- published papers (most impacting paper on limitations of radio neutrino detectors)

Theoretical Particle Physics Collaboration
Irvine, California

Graduate Student Researcher *Apr '17 – Sep '19*

- Simulated and analyzed physics seconds after the big bang
- Narrowed field of potential grand unified theories
- published papers

Teacher
Irvine, California

Graduate Student Instructor *Sep '16 – Dec '20 (excluding quarters in Antarctica)*

- Taught as an assistant or as the head instructor for numerous physics courses in nearly all disciplines
- Learned how to diversify knowledge to better communicate with students
- Managed online learning with Zoom during Covid-19 pandemic

Raytheon
Tucson, Arizona

Systems Engineer *Nov '15 – present*

- Performance simulation and analysis (air dominance)
- Further developed programming skills
- Matched simulation with real time data

CDMS
Berkeley, California

Simulation Design *Nov '13 – July '15*

- Implemented Monte Carlo simulator for phonon-electron scattering upon dark matter interaction
- Gained experience in C++ using armadillo and boost
- Learned how to match simulation with lab results

LUX
Berkeley, California

Affiliate *March '14 – Dec '14*

- Studied alpha decay via CCD imaging
- Became familiar with vacuum vessels
- Responsible for radioactive source control and helping out teammates
- Modified equipment such as source shield
- Wrote python program to analyze data

Wells Fargo
San Diego, California / Berkeley, California

Teller *June '11 – Oct '13*

- Took on many new responsibilities with cash handling
- Learned to adapt efficiently to new scripting methods, sales pitching, and operating systems
- Worked with managers on effective coaching
- Built new relationships with many customers

San Diego Mesa College Tutoring Center
San Diego, California

Tutor *Aug '11 – Dec '11*

- Tutored physics, math, and german
- Became familiar with various techniques in teaching
- Responsible for student's knowledge in his/her area of study

Tillys	Phoenix, Arizona/ San Diego, California
Sales Associate/Lead	*Nov '09 – June '11*

- Developed customer service and cash handling skills
- Learned inventory and basic cleaning skills
- Leadership experience in training, mentoring, and development (Promotion)
- Quick adaptation to new environments (i.e transferred)

Education

University of California, Irvine	Irvine, California
Doctorate and Masters in Physics	*2016 – Dec 2020*

Focused on software techniques for particle physics

University of California, Berkeley	Berkeley, California
Bachelor of Arts in Physics, Bachelor of Arts in Mathematics	*2012 – Dec 2014*

Focussed on dark matter physics and quantum mechanics.

Grossmont Community College	San Diego, California
Associate of Arts in German	*2011 – 2012*

San Diego Mesa College	San Diego, California
Accomplished lower division major requirements	*2010 – 2012*

Southwestern Community College	San Diego, California
Fulfilled breath requirements	*2011 – 2012*

Publications

Probing the angular and polarization reconstruction of the ARIANNA detector at the South Pole
arXiv: 2006.03027

White Paper: ARIANNA-200 high energy neutrino telescope
arXiv: 2004.09841

Neutrino vertex reconstruction with in-ice radio detectors using surface reflections and implications for the neutrino energy resolution
arXiv: 1909.02677

NuRadioReco: A reconstruction framework for radio neutrino detectors
arXiv: 1903.07023

Targeting ultra-high energy neutrinos with the ARIANNA experiment
arXiv: 1903.01609

Revisiting Electroweak Phase Transition with Varying Yukawa Coupling Constants
arXiv: 1810.02522

Observation of classically 'forbidden' electromagnetic wave propagation and implications for neutrino detection
arXiv: 1804.10430

DodgerMan3000 iOS and Android app
iOS link or Android link

MyBestFriend iOS and Android app
iOS link or Android link

TapThat! / TapThis! iOS and Android app
iOS link or Android link

Skills

Technical specialties: I am well-versed in Python/Java/C++ and skilled in many other languages such as React Native and JavaScript. I have experience with programs such as LaTex, MatLab, and Labview, and I am fully functional on Linux systems. I have immense math and physics skills.

Natural languages: English (*Fluent*), German (*Intermediate*)

Interests

Non-exhaustive: Programming (app development on iOS and Android), teaching, racquet ball, scuba diving, ukulele, and waltz dancing.

References

- Steven Barwick - Principal investigator at ARIANNA, UCI - (510) 486-7731

- Mu-Chun Chen - Principal investigator at Theoretical Particle Physics Collaboration, UCI - (510) 486-7731

- Nick Valverde - Systems Engineer at Raytheon - (520) 820-9391

- Kevin Lesko - Senior Physicist at LUX - (510) 486-7731

- Arran Phipps - Graduate Research Lead at CDMS - (650) 290-0769

- Ashley West - Service Manager 2 - (510) 909-7941

- Claude Mona - Physics Professor - (619) 388-5823

- Rachel Koen - General Manager - (903) 283-8569

- Misty Martinez - Assistant Manager - (602) 989-0538

- Joe Taube - Assistant Manager - (602) 525-2790