

Kitran M. Colwell

Local Address: 644 Alvarado Ave, Apt 242, Davis, CA 95616
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Objective:

To secure employment as a professor, instructor, or lecturer in the physical sciences and/or mathematics for the 2016-2017 academic year.

Work Experience:

Diablo Valley College Pleasant Hill, CA
Adjunct Professor of Physics 20 hrs/wk, 6/16-current

- Physics 110 - Conceptual physics survey course

High Energy Frontier Theory Initiative (HEFTI) Davis, CA
Graduate Researcher - Dr. John Terning, Advisor 20 hrs/wk, 4/12-current

- Twistor formulation of quantum electrodynamics; dyon dualities and light-by-light scattering
- Curing the Higgs mass quadratic divergence with conformal symmetry at IR fixed points
- Further interests in Calabi-Yau manifold compactification and extra-dimensions physics

University of California - Davis Davis, CA
Associate Instructor of Physics 30 hrs/wk, 6/13-12/15

- Physics 1B: Electromagnetism and optics for non-physical science majors
- Physics 7B: Fluids, circuitry, forces and torque in a discussion/laboratory learning setting emphasis for biological science majors
- Physics 9B: Waves, acoustics, optics, fluids, and thermodynamics for physics and engineering majors
- Physics 9D: Relativity and quantum mechanics for physics and engineering majors

University of California - Davis Davis, CA
Teaching Assistant 20 hrs/wk, 9/11-6/16

- Prepared and led discussion sessions for undergraduate classes in mechanics, electromagnetism, and modern physics (atomic, optical, nuclear)
- Led problem-solving and laboratory sessions for undergraduate classes (mechanics, electromagnetism, modern physics)

AggieMentors Davis, CA
Graduate Mentor - Pia van Benthem, Director 15 hrs/wk, 9/12-6/14

- Mentored high school students in conducting environmentally themed research projects
- My student built a Geiger counter, measured local radiation levels, won the regional competition and placed 3rd in the national level

Bay Area Tutoring Center San Ramon, CA
Science/Math Tutor - Homayoon Koushafar, Owner 32 hrs/wk, 8/10-7/12

- Private and group tutor sessions in preparation for standardized tests (GRE, MCAT, AP, ACT, PSAT/NMSQT, SAT, SAT II, CAHSEE, STAR, etc.) and classwork
- Help students learn how to approach problem solving and master basic concepts in physics, mathematics, chemistry, biology at K-12 and collegiate levels

Center for Theoretical Biophysics La Jolla, CA
Graduate Researcher - Dr. Olga Dudko, Advisor 20 hrs/wk, 7/09-12/09

- Modeled diffusive barrier crossing in non-equilibrium reaction-rate theory
- Presented Kramers' theory on diffusive reaction dynamics

University of California - San Diego La Jolla, CA
Teaching Assistant 20 hrs/wk, 9/08-9/09 & 1/10-6/10

- Prepared and led discussion sessions for undergraduate classes in mechanics, electromagnetism, and modern physics (atomic, optical, nuclear)
- Taught at UCSD tutor center and led problem-solving sessions
- Ran laboratory sessions for undergraduate classes (electromagnetism, modern physics)

Center of Integrated Nanomechanical Systems
Undergraduate Researcher - Dr. Jeffrey Grossman, Advisor

Berkeley, CA
10-20 hrs/wk, 9/07-6/08

- Created morphology optimization programs for organic photovoltaics
- Ran nano-scale Monte Carlo simulations to determine peak efficiencies

Engineering Support Research Organization
Microlab Assistant - Dr. Marilyn Kushner, Supervisor

Berkeley, CA
10-20 hrs/wk, 10/06-12/07

- Maintained ISO Class 100 environment in microfabrication laboratory
- Stocked chemicals (including hazardous/toxic), lab materials

Technical Skills

- Network administration; computer and peripheral hardware and software installation/maintenance/troubleshooting
- Well-versed in Windows, Macintosh, and Linux environments, as well as command line/terminal programming
- Programming experience in Perl, HTML (CSS), PHP, JavaScript, LabView, L^AT_EX, Mathematica, MatLab, C++
- Familiar with library data entry and able to follow detailed procedures and perform repetitive motions
- Experience with website design, maintenance, and implementation and online and remote databases

Education:

University of California - Davis
Ph.D., Physics

Davis, CA
2011-2016

- Dissertation: *Dualities, Helicity Amplitudes, and Little Conformal Symmetry* under Dr. John Terning
- Cumulative GPA: 3.96
- Completed coursework in quantum field theory, high energy physics, general relativity, Lie groups/algebras, supersymmetry

University of California - San Diego
M.S., Physics

La Jolla, CA
2008-2010

- Cumulative GPA: 3.87
- Completed coursework in mathematical methods, quantum mechanics, classical mechanics, electromagnetism, equilibrium/nonequilibrium statistical mechanics, quantum field theory, solid state physics, geometrical physics, group theory

University of California - Berkeley
B.A., Physics and Mathematics

Berkeley, CA
2004-2008

- Cumulative GPA: 3.75 (High Distinction in General Scholarship - *Magna cum laude*)
- Physics GPA: 3.82
- Completed undergraduate course work in multivariable calculus, linear & abstract algebra, real & complex analysis, differential geometry, mathematical logic, quantum mechanics, electromagnetism, analytical mechanics, statistical mechanics, semiconductor circuitry, advanced laboratory methods, biochemistry, paleontology, fusion science, and molecular biophysics, as well as facilitating a DeCal class on Mesozoic marine reptiles
- Recipient of Laslett, Larimer, and Pomerantz Scholarships in Physics

Other Information

- Intermediate knowledge of German
- Experience in foreign travel to Manaus, Brazil; Prague, Czech Republic; French Polynesia
- Entomology hobbyist with wife, Dr. Rachael Spradley
- Belonged to UC Berkeley Fencing Team

References Furnished Upon Request