

BRIAN B. BAUMGARTNER

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SUMMARY: *A professional with experience in the engineering and experimental science fields through past employment in industry, university research, and leadership roles. This work included instrumentation research in the areas of astrophysics and oceanography, as well as leadership positions as a resident advisor, senior programming intern, outdoor leadership guide, college ambassador, and campus tour guide. Past positions have included engineering work with the U.S. Department of Defense, Australian Astronomical Observatory, and Granite Construction Company, amongst others.*

EDUCATION

B.S. Physics

Minor: **Environmental Systems**

University of California, San Diego (2009)

TECHNICAL SKILLS

MATLAB, SolidWorks, COSMOSWorks, Pro Engineer, Mechanica, Mathematica, LabVIEW, Basic C/C++, Python, Streams 5, Finite Element Analysis, Linux/UNIX, DAQ, Assembly, soldering, Circuits, ORIGIN, Oxford Lasers VisiSolo Software, Adobe Photoshop, Adobe Lightroom, Aperture, Final Cut Studio 2, WordPerfect, Windows, Mac OS X, Microsoft Office, iLife, iWork, Google Apps

LANGUAGE SKILLS

Spanish: Proficient in reading, writing, speaking, and comprehension

French: Elementary skills in reading, writing, speaking, and comprehension

ADDITIONAL SKILLS

Leadership

Analytical Problem Solving

Budget, Personnel, & Time Management

Able To Work In Team & Individual Settings

Public Speaking & Communication

Photography

Commercial Class B Driver Certification

Wilderness First Responder Certification

Open Water SCUBA Certification

AWARDS

Ernest C. Mort Leadership Excellence Award, Revelle College, UC San Diego (May 2009)

- Awarded to a student from each class level who has excelled above and beyond in leadership roles at Revelle College.

Jen Snell Award, Revelle Residence Life (May 2008)

- Awarded to a Revelle Residence Life staff member for Outstanding Lifetime Contribution to Revelle Residence Life.

Outstanding Returning Paraprofessional, Inter-College Resident's Association (May 2008)

- Nominated by fellow staff members and voted on by a council of peers.
- Awarded to a returning residential life staff member who excels above and beyond their role.

Regional Social Program of the Month, National Association of College and University Residence Halls (May 2007)

- An award given to a residential life program that powerfully achieves a particular goal in event programming.
- Won for the "Western" Region: California, Washington, Oregon, Arizona, Nevada, Montana, Hawaii, & Australia

TECHNICAL EXPERIENCE

Australian Astronomical Observatory, **Instrument Science Fellow**, Sydney, Australia (December 2010 – April 2011)

- Commissioned experimental apparatus for current and future testing of fiber optics relevant to astronomical instrumentation.
- Worked with optical equipment to explore focal ratio degradation performance for fiber optic cables of different core shapes and sizes.
- Developed software (in Python) for data analysis within project.
- Constructed and administered all levels of testing and preparation, including experimental setup, obtaining data, and data analysis.
- Presented academic talk on subject to report research findings and progress to CSIRO and AAO faculty and students.
- Worked independently through majority of project, with little to no supervision.
- Attendee: Australian Optics conference at the University of Sydney in December 2010.

United States Department of Defense, **Mechanical Engineer**, Monterey, CA (January 2010 – December 2010)

- Drafted and designed equipment, such as a custom winch, data collection devices, and instrument housings for Arctic experiments.
- Worked with SolidWorks mechanical drafting software extensively for design, development, and optimization of parts & equipment.
- Conducted calibration tests of equipment prior to deployment in the Arctic, including temperature, conductivity, pressure, and software testing and functionality checks.
- Created small programs, usually in MATLAB, for the purposes of instrument control, as well as data collection and analysis.
- Developed procedural notes for tests and construction, including written instructions of testing methods, troubleshooting, necessary coding, and analysis.
- Worked in Professor Tim Stanton of the Ocean Turbulence Laboratory at the Naval Postgraduate School on topics including ocean acoustics.
- Issued United States Government security clearance for base access and work.

Marine Physical Laboratory, **Assistant Engineer**, La Jolla, CA (March 2009 – August 2009)

- Researched wave-generated spray using the Scripps Hydraulics Laboratory's forty-meter wave channel.
- Worked with DAQ and other computer related hardware.
- Worked with imaging software to examine and analyze bubbles in a controlled, tank setting.
- Built and maintained experiment apparatus during project.
- Worked with LabVIEW, MATLAB, and Streams5.
- Worked alone on individual research projects and with colleagues on experiment preparation and implementation.

Center for Astrophysics & Space Sciences, **Assistant Researcher**, La Jolla, CA (January 2009 – August 2009)

- Assisted Professor Thomas Murphy with research duties relevant to the APOLLO project.
- Constructed and characterized a radio transponder antenna to detect and interpret transmission signals from aircraft, leading to a publication on RF antennas and their use in avoiding illuminating aircraft with a laser beam (<http://arxiv.org/abs/0910.5685>).
- Worked with Python programming language and Unix operating system on transponder project.
- Researched and tested various components for use in the laser box; from humidification devices and monitoring to mechanical motors for use in remote movement of louvers.
- Diagnosed and troubleshot a malfunctioning water pump on the telescope laser.
- Developed a scheme for proper heating of a compressor in the laser schematic.
- Conducted data analysis, including signal processing, coding, and interpretation, for transponder project.

Scripps Institution of Oceanography, **Assistant Researcher**, La Jolla, CA (2008 – 2009)

- Gathered field observations and used these for compiling and analyzing data for run-up and flooding models at local beach/road junctures.
- Conducted background research using scientific papers and journal articles to correct and improve working run-up models.
- Collaborated with outside experts in computer programming, research, and understanding concepts.

Granite Construction Company, **Project Engineering Intern**, Watsonville, CA (June 2007 – September 2007)

- Worked in the capacity of a full-time Project Engineer as an Intern.
- Managed own project to build retaining wall for recycling center at local county landfill with minimal supervision.
- Managed daily, weekly, and total job costs along with confidential and proprietary budget and overall profit margin information.
- Handled all aspects of in-house and client project paperwork.
- Fulfilled other duties as necessary in order to ensure the job would be completed as scheduled without penalty.
- Managed and organized project personnel and equipment, ensuring that all employees obtained the support and resources required to work in a positive and productive environment.

LEADERSHIP EXPERIENCE

UC San Diego, **Revelle College Resident Advisor & Senior Programming Intern**, La Jolla, CA (2006 – 2008)

- Worked with minimal supervision to complete weekly event programming.
- Served on several committees, including Asst. Resident Dean Selection, & advised student-programming organizations.
- Entrusted to manage budget of up to \$6,000 ethically and responsibly.
- Advised residents in course selection, housing, life skills, and several other aspects of their university and personal lives.
- Planned and implemented small and large-scale events for Revelle Residence Halls & Apartments both in team and individual settings.
- Trained in problem solving, conflict resolution, event programming, campus resources, and student support.
- Trusted with highly sensitive and confidential information; above and beyond that of most other staff member.

UC San Diego, **Outback Adventures Outings Guide**, La Jolla, CA (2005 – 2009)

- Entrusted with the safe leadership of 6-14 participants into the wilderness for up to a week with 1-2 assistant guides.
- Entrusted with budgeting, planning, preparing, organizing, and instituting all necessary aspects of trips.
- Participated in Class B driver, wilderness medical response, and evacuation logistics training.
- Trained in decision-making, critical thinking, planning, logistics, wilderness skills, facilitation, and basic life support.
- Trusted with sensitive personal health and medical history information of participants.

UC San Diego, **[Senior] College Ambassador**, La Jolla, CA (2004 – 2009)

- Trained in public speaking and group management through conducting tours and managing large groups.
- Presentation experience through training, tours, and outreach efforts into the community.
- Recognized for ability to speak clearly with tact, poise, and clarity.
- Promoted to “Senior” College Ambassador (management) after 1 year.
- Selected to conduct tours to VIPs (i.e. governor, visiting chancellors, distinguished faculty, etc).
- Designed and executed training methods and topics for new hires for the last 3 years of employment.
- Oversaw training and insured that all “new-hires” completed it in a timely fashion.
- Facilitated weekly meetings with senior staff and monthly meetings with full staff.
- Participated in meetings with supervisors, including many of UC San Diego’s Vice Chancellors.

ADDITIONAL EXPERIENCE

The Good Times, Santa Cruz, **Photographer**, Santa Cruz, CA (April 2010 – December 2010)

- Worked with editors and subjects to arrange, often last minute, photography shoots for publication.
- Worked with different clients in various occupations and job levels for photo shoots.
- Worked in strict deadlines.
- Provided own camera equipment, as well as expertise and familiarity with this all lenses, camera bodies, lighting techniques, etc.

The Apple Store, UTC, **Mac Specialist**, University City, CA (October 2007 – May 2008)

- Customer service specialist, selling Apple computers, iPods, iPhones, services, and other Apple and third party products.
- Offered technical support for customers.
- Taught lecture-style and individual lessons on Apple products and services in store.
- Consistently in the top percentage of store sales.
- Worked with minimal supervision in a team setting.
- Entrusted with confidential company financial, sales, and product logistical information on a daily basis.

Fuzz Artists, **Artist Advocate/Intern**, San Diego/San Francisco, CA (2006 – 2008)

- Created profile pages on company website for bands, artists, labels, and other groups.
- Promoted site through digital medium (Facebook, Myspace, etc) at concerts, and other special events.
- Participated in weekly teleconferences and discussions.
- Actively worked to improve website through feedback and usage, as well as recruiting new artists to expand site content.
- Organized events to showcase label and website.
- Supported software engineers in various ways including site/user interaction.
- Minor amounts of photo editing done for media using Photoshop.