

CV Tips

(Followed By Examples)

- Ideally 1 page, maximum 2-page document
- Organize your sections or headlines as they relate to the position qualifications
- Use key words found in the job description to “target” your skills and bullet points as they relate to the position
- Results oriented, listing all the concrete outcomes you’ve achieved in your current positions
- Prioritize Information ordered by relevance to position
- Have your resume reviewed by a career counselor to check for typos and errors

Sections of a CV

Heading: Name, address, phone (not lab), email, website, visa status if PR

Profile or Summary or Highlights: Usually 2-3 sentences that summarize your history, background and unique qualifications, tailored to the position

Education: Using areas of expertise or emphasis is a good way to communicate your research topic area, or method expertise for non-specialized audiences. Only include topics that are relevant to the position

Various “Experience” Sections: Research, Teaching, Mentoring, Leadership and Supervision, Industry, Community Service, Writing, Business & Skills or Techniques – categorized list. Tailor the experience section to the job, with the most relevant experience first (e.g., research experience). Analyze each experience with regard to the skills, abilities, leadership positions and accomplishments gained. Quantify the statements, where possible, and use action verbs.

Awards: Describe if not obvious

Presentations and Publications: List at the end

References: Generally no references, or “References available upon request”

How to tailor your resume for specific, posted job descriptions

- Start with your generic resume
- Carefully read the job description
- Edit the Profile section of your generic resume to fit the list of screening criteria, as closely as possible
- Edit the following sections of your generic resume so that the claims in your Profile section are clearly supported
 - Research Experience
 - Skills/Techniques
 - Publications/Presentations
 - Extra sections that support soft skills mentioned in Profile

CV Bullet Points: Writing Accomplishment Statements

CV bullet points should demonstrate your achievements in a particular role, highlighting your success and skills as they relate to the job application. They should be organized by most impactful

accomplishments first and tailored to the specific job you are applying to. Don't list duties or the daily tasks of your position. Instead, demonstrate your value by highlighting the depth and breadth of your work and skills.

When writing the accomplishment statement ask these questions:

1. What skills do I need to demonstrate for the job I am applying to? (refer back to specific job description)
2. What did I accomplish in this role that demonstrates those skills?

Example: Breaking Down Your Experience

Think about the duties and responsibilities performed in your position. From there, determine what you have accomplished related to those specific tasks/projects. The demonstrated accomplishment is your final "product".

Duties:

- Graded homework, taught labs, met with students during office hours

Duties don't demonstrate your capabilities or skill level

Accomplishments:

- Taught weekly lab meetings for 25 undergraduate biology majors
- Advised 5 students on final paper and in class presentation

Quantify your work – consider frequency, and total impact

Demonstrated Accomplishment:

- Taught and assessed biology concept applications for 25 undergraduate students through interactive instruction in weekly labs, written assignments and in person advising

Lead with an active verb that highlights the skill or result you want to demonstrate. Use concrete examples.

Henry David

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Education:

California Institute of Technology

Sept. 2014 – May 2019 (expected)

- Chemistry PhD

Yale University

Sept. 2010 – May 2014

- B.S. in Biochemistry and Molecular Biology, GPA 3.8/4.0

Research Experience:

California Institute of Technology, PhD Candidate, Dougherty Lab

Jan. 2015 – Present

- Investigated the activation mechanism of a ligand-gated ion channel
- Probed protein-protein interactions of a nuclear hormone receptor
- Independently generated new ideas and planned experimental approaches
- Communicated and collaborated with other lab members and principal investigator
- Experience troubleshooting vital laboratory equipment with no technical support
- Skilled with PCR, bacterial and mammalian cell culture, gel electrophoresis, Western blotting, subcloning, heterologous protein expression, structure-function studies, electrophysiological recording, FPLC purification, MALDI MS

The Willow Research Institute, Research Intern, Krishna Lab

June 2013 – Aug. 2013

- Developed synthetic strategy for a nucleotide analog as a monomer subunit for a plausibly prebiotic artificial informational polymer
- Performed organic synthesis, purification, and spectroscopic characterization

Yale University, Undergraduate Research, Bevelle Lab

June 2012 – May 2013

- Characterized catalytic activity of a novel organometallic complex
- Utilized inorganic synthesis, glove box and Shlenck line techniques, GCMS, NMR
- Data was used in a grant application for research into sustainable light-metal catalysts

Teaching / Leadership:

California Institute of Technology, Research Mentor

Sept. 2016 – April 2018

- Guided three first-year graduate students in techniques of chemical biology
- Planned research strategies and oversaw project implementation

California Institute of Technology, Teaching Assistant

Sept. 2014 – Mar. 2017

- Assisted professors in course development and instruction
- Helped to restructure an advanced organic chemistry course to be less lecture centric
- Courses include Advanced Organic Chemistry, Introductory Biochemistry, General Chemistry

Yale University, Teaching Assistant (Organic Chemistry)

Sept. 2012 – Dec. 2012

- Created novel problem sets and coordinated recitation for chemistry students

Publications:

David, H.; Rye, D. A.; Hermione, S. C. R. *Biochemistry* **2018**, 57 (27), 9427–4043.

David, H.; Dougherty, D. A. *J. Biol. Chem.* **2018**, 265 (8), 2593–2914.

PAMELA CHENG

Pasadena, CA 91106 • Poleary@caltech.edu • 123-456-0781
<http://www.linkedin.com/in/pamoleary>

EDUCATION

California Institute of Technology Pasadena, CA
PhD, Department of Chemistry, GPA: 3.7/4.0 Expected June 2019
Relevant Coursework: Biochemistry of Macromolecules, Neurobiology, Bioorganic Chemistry of Proteins, Biology of Cancer, Macromolecular Machines, Enzymology, Responsible Conduct of Research, Programming for the Biological Sciences Bootcamp (Python)

Massachusetts Institute of Technology Cambridge, MA
B.S. Departments of Chemistry and Chemical Engineering, Minor Biology, GPA: 4.5/5.0 June 2013
Relevant Coursework: Biochemistry I, II and Lab, Organic Chemistry I, II, Advanced and Lab, Chemical and Biological Reaction Engineering, Thermodynamics and Kinetics, Genetics, Biology of Bacteria, Neuroscience and Society

RESEARCH EXPERIENCE

ACADEMIC

Caltech Department of Chemistry, Graduate Researcher Pasadena, CA
Advisor: Dr. Rudolph Marcus Nov. 2017-Present

- Characterizing biocatalyzed carbon-carbon bond formation mechanisms for industrial synthesis applications using metalloenzyme nitrogenase with representative substrate methyl isonitrile.
- Developed understanding of structural biology strategies at the West Coast Protein Crystallography Workshop.

Advisor: Dr. Cindy Chen Dec. 2013-Oct 2017

- Characterized structure-function relationship of plant-derived membrane protein chaperone cpSRP43 capable of preventing aggregation of amyloid-beta (A β 40) peptides found in Alzheimer's.
- Used cpSRP43 as a co-expression chaperone in *E. coli* to increase expression of membrane proteins, which are often very challenging to study because of their low expression.
- Trained two undergraduate researchers and two high school researchers to clone, express, purify, and characterize cpSRP43 mutants, resulting in co-authorship of these researchers on multiple publications.
- Membrane protein chaperone research secured a National Institutes of Health R01 grant of approximately \$1 million.
- Published work in *PNAS*; submitted a second manuscript to JBC; third manuscript is in preparation.

MIT Department of Organic Chemistry, Undergraduate Researcher Cambridge, MA
Advisor: Dr. Timothy Keets Sept. 2011-May 2013

- Developed palladium-catalyzed carbon-nitrogen cross-coupling methodologies for the synthesis of drug-like molecules using amidine salts with aryl halides as well as amides with ortho-substituted aryl iodides.
- Applied these methodologies to perform one-pot synthesis of pharmaceutically useful quinazoline derivatives.
- Published work in *Organic Letters* and presented a poster at the MIT Chemistry Research Symposium.

MIT Department of Biological Chemical Engineering, Undergraduate Researcher Cambridge, MA
Advisor: Dr. Jack Fiend Feb. - May 2013

- Increased biofuel yield from sorghum flour hydrolysis by 300% through optimization of heating apparatus, mixing impeller type, temperature, and reaction time.
- Presented poster at the Society for Industrial Microbiology and Biotechnology Conference in Washington DC.

INDUSTRIAL

Amgen Idec

Intern, Protein Formulation

Cambridge, MA

Jun. - Aug. 2013

- Studied whether secondary structure analysis via FTIR could be utilized for monitoring Factor IX Fc (hemophilia drug candidate) protein damage under various stress conditions to ensure drug stability during shipping.
- Presented research poster at Biogen Idec Intern Poster Session and via PowerPoint presentation to lab group.

Merck & Co.

Rahway, NJ Intern, Process Chemistry

Jun. - Aug. 2012

- Developed one-pot Negishi cross-coupling methodology for C-C bond formation between crude thiazole zinc chloride mixture and various aryl bromides using RuPhos precatalyst with yield of 55-99%.
- Synthesized trisubstituted olefins via cross-coupling with yields of 55-74%.
- Presented research poster at Merck Intern Symposium.

Pfizer Pharmaceuticals

Intern, Research API and Research Analytics

Groton, CT

Jun. - Aug. 2011

- Performed two-step reductive amination reactions toward the synthesis of an ophthalmology target in order to study the effect of substrate electron density on reaction time using online FTIR and Raman spectroscopy to monitor reaction kinetics.
- Confirmed product formation via UPLC-MS and NMR and established standard operating procedures for using online spectroscopy tools for real time reaction monitoring.
- Presented research poster at Pfizer Intern Symposium; poster was also presented at Pfizer Global RA Symposium and GPC Forum; presented PowerPoint presentation to lab group.

TEACHING EXPERIENCE

Caltech Department of Chemistry

Pasadena, CA

Biochemistry (2014, 2016, 2017), Biophysical Chemistry (2014, 2015, 2016), General Chemistry (2014), Chemistry Lab (2013)

- Organized weekly recitations and weekly office hours, prepared problem set and exam questions, graded assignments.
- Received an outstanding teaching assistant (TA) award for biochemistry instruction.

TECHNICAL SKILLS

Experimental: Biology: Bacterial Cloning, PCR, Miniprep, Gel electrophoresis (agarose, SDS-PAGE), Bacterial Cell Culture (E. Coli and Azotobacter vinelandii), Protein Purification (soluble proteins, membrane proteins, anaerobic proteins), FPLC (AKTA and Bio-Rad), Dialysis, Lyophilization, Western Blot, EPR, NEM Alkylation, Fluorescence Anisotropy, Kinetic Light Scattering Assay, CD, Optical Microscopy.

Chemistry: FTIR (KBr pellet, BioCell, ReactIR), UV-Vis Spectroscopy, NMR (Varian, Bruker), GC, HPLC, LC-MS, TLC, Flash Column Chromatography, Biotage, Glovebox.

Computational: Microsoft Office, ChemBioDraw, Matlab, PyMOL, KaleidaGraph, Inkscape, HDX Workbench.

PUBLICATIONS

- **P. O'Leary**, S. Piszkiwicz, E. Miaou, S. Hess, and S-o. Shan. (2017) Two Distinct Sites of Client Protein Interactions in A Membrane Protein Chaperone. (submitted to JBC)
- F-C. Liang, G. Kroon, **P. O'Leary**, C. Chi, P. E. Wright, and S-o. Shan. (2016) Conformational dynamics of a membrane protein chaperone enable spatially regulated substrate capture and release. *PNAS*, 113, 12.

- M. A. McGowan, **P. O’Leary**, S. L. Buchwald. (2012) Palladium-Catalyzed N-Monoarylation of Amidines and a One-Pot Synthesis of Quinazoline Derivatives. *Organic Letters*, 14.

SELECTED PRESENTATIONS

- **P. O’Leary**, F-C. Liang, T. Nguyen, E. Miao, S. Piskiewicz, and S-o. Shan. (2017) Dynamics of Membrane Protein- Chaperone Interaction. Poster Presentation at the Protein Society Annual Symposium, Montreal, Canada.
- **P. O’Leary**. (2015) Inter-domain Dynamics of an ATP-Independent Chaperone. Center for the Chemistry of Cellular Signaling Seminar Series. California Institute of Technology.
- **P. O’Leary**, I. Chen, N. Consul, L. Song, K. Lee, J. Kucharski, and J.-F. P. Hamel. (2012) Development of methodology for the hydrolysis pretreatment of sorghum during the biofuel production process. Society for Industrial Microbiology Conference.
- **P. O’Leary**, S. Ali, B. Fors, S. L. Buchwald. (2011) Palladium-Catalyzed Cross-Coupling of Ortho-Substituted Aryl Iodides with Amides. MIT 150 Chemistry Symposium and Undergraduate Research Symposium.

AWARDS/HONORS

Protein Science Travel Award	May 2018
Caltech Microbiology Travel Grant Award	Apr. 2018
Philanthropic Education Organization (P.E.O.) Scholar	Mar. 2016
NIH/NRSA Training Grant Fellow	July 2014 - July 2016
Mike and Stella Banich Chemistry and Chemical Engineering Fellowship	Jun. 2015
Honorable Mention, National Science Foundation Graduate Research Fellowship Program	Mar. 2014

ACTIVITIES

Caltech Y Washington DC Science Policy Trip	Dec. 2017
<i>Treasurer</i> , Caltech Women in Chemistry	Jun. 2016-Present
<i>Secretary</i> , Caltech Catalina Community Associates	Feb. 2014-Present
Caltech Chemistry Club Outreach	May-Dec. 2014
<i>President</i> , National Society of Collegiate Scholars, MIT	Sept. 2011-May 2013

Hugo Chaumont

ademarco@caltech.edu (626)-457-7892

EDUCATION

California Institute of Technology, Pasadena, CA

PhD Candidate – Materials Science

GPA 4.0

Expected 2020

Cornell University, College of Engineering, Ithaca, NY

Bachelor of Science – Chemical Engineering, Summa Cum Laude

2015

RESEARCH EXPERIENCE

Minnich Lab, Caltech, Pasadena, CA

Research Assistant

2016-Present

- Measured thermal conductivity of various polymer thin films, including semi-crystalline and semiconducting films
- Designed, built, and developed advanced 4-laser optical experiment for measuring nanoscale thermal properties
- Simulated disordered heat transport in fully crystalline polymers using molecular dynamics

Journ Lab, Cornell, Ithaca, NY

Research Assistant

2013-2015

- Developed electrically conductive PbSe nanocrystal arrays using Laser Annealing, for application to photovoltaics
- Fabricated and characterized nanocrystal films using SEM, XRD, UV-VIS, and 4-probe electrical measurements

Irving Lab, Cornell, Ithaca, NY

Research Assistant

Summer 2012

- Measured electrical properties of silicate microstructures under varying degrees of Laser Spike Annealing

LABORATORY AND COMPUTER SKILLS

Software Development for Data Acquisition & Analysis • Instrument-PC Communication • Object Oriented Design
MATLAB • Mathematica • Python • Javascript/HTML/CSS • LaTeX • Microsoft Word/Excel/Powerpoint
Laser Optics • Thin Film Deposition • XRD • SEM • UV-VIS Spectroscopy • Metal Evaporation

LEADERSHIP EXPERIENCE

Applied Physics & Material Science Department, Caltech

Co-founder and President

2017-Present

- Created a department-level student group that now runs a mentorship program, department socials, a weekly student speaker series, new student workshops, and a graduate curriculum review; all with faculty support and funding

Caltech Y Outdoors Committee, Caltech

Chair

2018-Present

- Managed a committee that leads outdoor programs including day and week-long trips for the Caltech community

Graduate Student Council, Caltech

Academics Chair

2016-Present

2016-2017

- Managed a \$5000 budget and a committee to organize a year of academic programming for graduate students

PUBLICATIONS

Demarco, A & Minnich, A. J. Crystalline polymers with exceptionally low thermal conductivity studied using molecular dynamics. *Applied Physics Letters* **107**, 201908 (2015).

Treml, B. E., Demarco, AB., et al. Processing–Structure–Property XYZ Thin Films. *ACS Nano* **9**, 4096–4102 (2015).

Moore, D. T., Gaskey, B., Demarco, A & Hanrath, T. A detailed balance analysis of conversion efficiencies limits for nanocrystal solar cells—. *Journal of Expert Physics* **115**, 054313 (2014).

CONFERENCE PRESENTATIONS

Demarco, AB.; Minnich, A. J. “In Polymer Films using Transient Grating spectroscopy”. ASME 2016 IMECE, Nov. 14, 2016

Demarco, AB.; Minnich, A. J. “Thermal Induction of Brushes using Molecular Dynamics”. ASME 2014 IMECE, Nov. 17, 2014

Gaskey, B.; Demarco, AB.; Moore, D.T.; Hanrath, T. “Detailed Activity Among Solar Cells.” MRS 2012 Fall Meeting & Exhibit. Nov. 28, 2012.

Poster Presentations – MRS 2015, San Francisco, CA; MRS 2017, Phoenix, AZ

TEACHING EXPERIENCE

Classical Thermodynamics, Department of Mechanical Engineering, California Institute of Technology Fall 2018
Teaching Assistant

- Held office hours, make solution sets, and grade (22 students)

Introduction to Chemical Engineering, Department of Chemical Engineering, Cornell University Fall 2014
Teaching Assistant

- Taught recitation (45 students), held office hours, and graded homework/exams

Introduction to MATLAB, Department of Computer Science, Cornell University 2012-2015
Teaching Assistant

- Taught 2 recitations (30 students), held office hours, and graded homework/exams

AWARDS

California Institute of Technology Leadership Award 2018

Honorable Mention for the Graduate Research Fellowship Program at the National Science Foundation 2016

Excellence in STEM Teaching by Undergraduates (Cornell University) 2015

Campus Activities

Graduate Student Council, Caltech 2016 - Present

Concert Band, California Institute of Technology 2015 – 2016, 2018

Present Vice President of Paddling Club, California Institute of Technology 2017 -2018

Diana Demarco

ademarco@caltech.edu (626)-457-7892

EDUCATION

California Institute of Technology, Pasadena, CA

PhD Candidate – Materials Science

GPA 4.0

Expected 2019

Cornell University, College of Engineering, Ithaca, NY

Bachelor of Science – Material Science., Summa Cum Laude

2014

RESEARCH EXPERIENCE

Faber Lab, Caltech, Pasadena, CA

Research Assistant

2015-Present

- Measured fracture patterns of brittle materials and mechanisms by which these materials can be strengthened
- Developed energy-related applications including thermal and environmental barrier coatings for power generation components and porous solids for filters and flow.

Journ Lab, Cornell, Ithaca, NY

Research Assistant

2012-2014

- Developed electrically conductive PbSe nanocrystal arrays using Laser Annealing, for application to photovoltaics
- Fabricated and characterized nanocrystal films using SEM, XRD, UV-VIS, and 4-probe electrical measurements

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Summer 2011

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AWARDS

- California Institute of Technology Leadership Award 2017
Honorable Mention for the Graduate Research Fellowship Program at the National Science Foundation
Excellence in STEM Teaching by Undergraduates (Cornell University) 2016

Campus Activities

- Graduate Student Council, Caltech 2015 - Present
Concert Band, California Institute of Technology 2015 – 2016, 2018 - Present
Vice President of Badminton Club, California Institute of Technology 2016 - 2017