

# BRIAN PAUL

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## Education

<b>University of Delaware</b> , Newark DE	Expected 2024
PhD, Chemical & Biomolecular Engineering	
Co-advised by Abraham Lenhoff, Norman Wagner, and Eric Furst	
<b>University of California, Irvine</b>	June 2019
B.S., Chemical Engineering	
B.S., Materials Science & Engineering	
GPA 3.75 – Graduated <i>Cum Laude</i>	
<b>Irvine Valley College</b>	May 2015
A.A., Social & Behavioral Science	
A.A., Liberal Studies: Teacher Education	
IGETC Transfer Certification (General Education)	
GPA 3.95 – Graduated <i>Magna Cum Laude</i> , Earned Associate's Degrees during high school	

## Research Experience

<b>Graduate Researcher</b> , University of Delaware, CBE Department	Sept 2019 – Present
▪ Investigating structure and mechanical/flow properties of protein solids (colloidal gels)	
<b>Undergraduate Researcher</b> , UC Irvine, Colloid Science Laboratory (Mohraz Group)	Sept 2017 – June 2019
▪ Demonstrated potential for bijels from polymer fluids to simplify scaffold production	
▪ Investigated the miscibility gap of propylene glycol with various solvents	
▪ Demonstrated potential to manufacture bijels using propylene glycol/nitroethane	
▪ Designed Stober process to synthesize silica particles 80-500 nanometer in diameter	
<b>Executive Team Lead</b> , BioENGINE Senior Design Capstone Project	Sept 2018 – June 2019
▪ Designed expandable prosthetic stent for pulmonary valve stenosis	
▪ Modeled stent in SolidWorks; prototyped stent via 3D printing	
▪ Performed finite element analysis in Abaqus	
▪ Managed project timeline, communicated with mentors, lead formal presentations	
<b>Undergraduate Research Assistant</b> , UC Irvine, Ceramics Laboratory (Mecartney Group)	Sept 2016 – Mar 2017
▪ Polished ceramic samples in preparation of SEM and XRD analysis	
▪ Analyzed grain size of ceramic sample via ImageJ	
▪ Conducted research under the direction of Professor Martha Mecartney	

## Industry Experience

<b>Engineering Prototyping Lab Intern</b> , UCI Applied Innovation, Irvine, CA	June 2018 – June 2019
▪ Provided training sessions for engineers on various prototyping equipment	
▪ Performed general maintenance on machines and supervised users	
▪ Wrote training protocols for optical microscope and new 3D printer	
▪ Coordinated with lab manager and intern team to maintain the lab space	
<b>Chemical Process Software Test Intern</b> , Schneider-Electric, Lake Forest, CA	June 2017 – Sept 2017
▪ Beta tested SimCentral 1.8; worked with interdisciplinary team to improve software	
▪ Logged defects and developed an 8-step checklist to improve existing test cases	
▪ Performed scalability testing; assisted with V&V for 600 backlogged test cases	
▪ Managed headless test results in Visual Studio; identified defects prior to v2.0 release	

- Chemical Engineering R&D Intern**, Schneider-Electric, Lake Forest, CA June 2016 – Sept 2016
- Beta tested Pro/II 10.0, including GUI, Thermo Data Manager, and Excel compatibility
  - Regressed NIST phase boundary pressure data for 50+ organic compounds in Excel
  - Developed thermodynamic model for asphaltene deposition in deep sea oil pipes

### Awards, Grants, & Scholarships

- **Chancellor's Award of Distinction** Awarded June 2019
- **Chemical Engineering & Materials Science Undergraduate Student of the Year** Awarded Mar 2019
- AntLeader (Student Leader) of the Month Awarded Jan 2019
- **Summer Undergraduate Research Fellowship** Granted June 2018
- Orange County Engineering Council Outstanding Engineering Student Award Awarded Feb 2017
- Initiated Member of Tau Beta Pi (Engineering Honor Society) Initiated June 2017
- Initiated Member of Omega Chi Epsilon (Chemical Engineering Honor Society) Initiated June 2016

### Technical Skills

- Pro/II & SimCentral
- Matlab & Simulink
- SolidWorks & AutoCAD
- Abaqus (FEA)
- Python
- Microsoft Project

### Leadership Experience

- Recruiting/Communications Lead**, American Chemical Society Biotechnology Division Sept 2019 – Present
- Helping to establish Graduate Student Chapter in Mid-Atlantic Region
  - Reaching out to companies to organize networking events for local grad students
- Vice President of External Affairs**, American Institute of Chemical Engineers at UCI Apr 2018 – June 2019
- Organized networking & recruiting events with local companies for AIChE members
  - Expanded organization's network to include new companies, individuals, and schools
  - Assisted President in managing the organization as an Executive Board Member
  - Represented AIChE at UCI in all external communications
- Conference Sponsorship Chair**, American Institute of Chemical Engineers at UCI Oct 2017 – Apr 2018
- Recruited \$4000 in corporate sponsors for AIChE Western Regional Student Conference
  - Organized Career Fair of 9 local chemical engineering employers, with 250 attendees

### Outreach Experience

- Outreach Coordinator**, Colburn Club, Newark, DE Sept 2019 – Present
- Organizing weekly algebra tutoring for local middle school students
  - Providing community service opportunities for UD CBE graduate students
- Undergraduate Volunteer**, ASM Materials Camp, Irvine, CA June 2018
- Accompanied high school student attendees on UCI lab tours as a chaperone
  - Assisted organizers in keeping event on schedule and preparing materials for students
  - Presented research in Materials Expo Day and provided academic advice for students
  - Volunteered for approximately 3 hours each day for the 4-day Camp
- UROF Symposium Volunteer**, Undergraduate Research Opportunities Program, Irvine, CA May 2017
- Assisted with poster setup and event registration prior to Symposium Keynote Address
  - Directed and accompanied guests to various locations during Symposium
  - Served as Room Monitor during oral presentations
- Guest Musician**, Sunrise & Age Well Senior Living Centers, Lake Forest CA Sept 2011 – Dec 2017
- Provided community service performances for Senior Living Center residents
  - Participated in 3-4 performances per year, with 2-3 months preparation for each event