

PENNSYLVANIA
 STUDENT SCHOLARSHIP APPLICATION FOR THE YEAR 2017-18

8

APPLICANT NAME			[REDACTED]
DATE			07/28/17
NAME OF RELATED ESWP MEMBER			[REDACTED]
MEMBER #			
RELATIONSHIP			
HOME ADDRESS		CAMPUS ADDRESS	
103 Cestone Court		250 Atwood Street, Apt. 1	
West Creek, NJ 08092		15213 Pittsburgh, PA	
HIGH SCHOOL		CITY, STATE	GRAD. DATE
Marine Academy of Technology and Environmental Science (MATES)		Manahawkin, NJ	June 2015
COLLEGE		CITY, STATE	EXPECTED GRAD. DATE
University of Pittsburgh		Pittsburgh, PA	April 2019
MAJOR			
Chemical Engineering			

ESWP Scholarship Essay

My Career in Polymers: A Sustainable Future Taking Shape

Essay Prompt: Describe in detail your strengths and interests. Describe how you will apply your skills to a career as an engineer.

What do drug-releasing films, Nike shoes, and foaming hand soaps have in common? They all contain polymers. For something so ubiquitous and crucial to modern life, polymers often go overlooked by the public. If they are brought up, polymers are often portrayed as the evil villain in the fight to build a more environmentally-friendly way of life. I disagree. Moving forward, we need to design more sustainable polymers to meet a wide variety of our demands. I hope to be part of this movement to create better polymers and to educate the public on their benefits. Specifically, I would like to work as a chemical engineer who researches and develops polymer-based drug delivery systems. I luckily have had the opportunity to already begin living my dream: the past three semesters, I conducted undergraduate research that investigated the ability of PVA-based microspheres to treat dry eye disease. Currently, I am a summer intern at a specialty chemical company, where I research an experimental thermoplastic polyurethane and its potential applications as a nanofiber drug delivery system. I am applying to the Engineers' Society of Western Pennsylvania Scholarship in hopes that this professional society will help support my undergraduate studies at the University of Pittsburgh.

Although I am only halfway through my undergraduate career at Pitt, I have already pursued many of my interests and developed my strengths. In addition to my aforementioned research experience, I lead Pitt's Engineers Without Borders technical team. As technical team lead, I oversee the completion of the technical aspects our current project, which is to provide a

source of clean drinking water to a Brazilian community through building and implementing biosand filters. Another demonstration of my 'soft skills'—especially my dedication, time management, and desire to succeed—is my success as a NCAA Division I student athlete. During my sophomore year, I was the only student at Pitt to qualify for two national championships: Cross Country and Outdoor Track and Field, the later at which I placed 13th in the Women's 10,000 meter race. Indeed, my passion and talent for athletics translates to my studies, and I plan on applying it to my professional life as well.

As I continue to hone my skills, I am working towards reaching my educational and professional goals. My most immediate goal is to obtain a bachelor's degree in chemical engineering with a concentration in polymer science. To achieve this goal, in the next two semesters, I plan on taking a polymer synthesis lab, a safety in industry chemistry class, and a drug delivery course taught by the chair of the chemical engineering department at Pitt. After graduation, I plan to work for a chemical manufacturing company, then return to school to obtain a master's in Engineering Management. With this combination of educational background and industry experience, I hope to have a career that utilizes my technical and managerial skills to lead a group of scientists in engineering drug delivery systems and contribute to building a sustainable future.

Objective: Obtain funding for my undergraduate education through the Engineers' Society of Western Pennsylvania student scholarship. Expected Graduation: April 2019

1. Extracurricular Activities

Pharma R&D Intern

Principal Investigator: Murty Vyakarnam

Life Sciences Department, Lubrizol Advanced Materials; Cleveland, Ohio

- Investigates biodegradable thermoplastic polyurethanes and their application as a controlled release drug delivery system
- Fabricates nanofiber nonwoven films loaded with a model NSAID and assesses surface morphology, hydrolytic degradation, water absorption, and drug release profile
- Presents progress in weekly lab meetings

June 2017-
Aug. 2017

Undergraduate Researcher

Principal Investigator: Steven Little, Chair of Chemical Engineering Department

Little Lab, Benedum Hall; Pittsburgh, Pennsylvania

- Conducted research as a Pitt EXCEL Summer Research Intern and Brackenridge Research Scholar
- Fabricates and assesses two batches of controlled-release microspheres encapsulating immunotherapeutic drugs
- Analyzes surface morphology, size distribution, and release profile of microspheres using SEM, High Performance Liquid Chromatography, UV-Vis Spectroscopy, volumetric impedance measurements, and ELISA release assays
- Writes and presents research findings to lab faculty and peers

Sept. 2016-
April 2017

Biosand Filter Project Lead, Technical Team Lead

Engineers Without Borders, University of Pittsburgh Chapter

- Leads development and execution of project involving installing and maintaining 50 biosand filters in a remote Brazilian village
- Conducts weekly informational meetings and build sessions with biosand filter team members
- Assisted in prototyping and testing 2 biosand filters

Sept. 2015-
present

Division I Student-Athlete

University of Pittsburgh Cross Country and Track and Field

- Manages 20+ hours per week of training, competition, and practice
- Individual qualifier for Division I NCAA 2016 Cross Country and 2017 Outdoor Track and Field National Championships
- Four-time First National Bank Athlete of the Week in 2015 and 2016 Cross Country Seasons
- Named member of 2015 and 2016 All-ACC Academic Cross Country Teams and Outdoor Track and Field Teams
- Earned 2016 USTFCCA All-Academic Honors for outstanding athletic and academic performance

Aug. 2015-
present

Pitt Serves Alternative Spring Break Program

- Volunteered at Community Human Services, a local food distribution center, and community garden
- Connected with Hill House Association and other local nonprofits to understand historical and social background of the Hill District community

May 2016

University of Pittsburgh 2016 Summer Engineering Innovation Bootcamp

Won 1st place for Best Overall Startup Pitch

Aug. 2016

Marine Field Station Intern

Rutgers University; Tuckerton, New Jersey

- Wrote and implemented code in MATLAB to analyze side scan sonar data collected by autonomous underwater vehicles
- Assisted in optimization of MATLAB learning algorithm that classified fish populations based on side scan sonar data

Nov. 2013-
June 2015

Undergraduate Teaching Assistant

- Lead weekly review sessions for 5-10 General Chemistry students

Sept. 2016-
June 2017

Institute of Chemical Engineers, University of Pittsburgh Chapter

- Freshman Representative for Fall and Spring 2015-2016 semesters
- Builds Chemical Engineering knowledge and professional network through attending club meetings

Aug. 2015-
present

University of Pittsburgh Emerging Leader

- Completed 13-hour leadership program to develop leadership style and communication skills through teamwork exercises

Sept. 2015

2. Awards and Honors

- Recipient of *Valspar* \$5,000 scholarship for demonstrating academic excellence in Chemical Engineering
- Recipient of University of Pittsburgh Full Tuition Scholarship for outstanding academic achievement
- Recipient of annual \$9,000 athletic scholarship for outstanding athletic performance

Student ID: 4028499



University of Pittsburgh

Institution: University of Pittsburgh
4200 Fifth Avenue
Pittsburgh, PA 15260
05/28/2017

Print Date:

Birthdate: 04/30/1997
Student Address: 103 Castone Court
West Creek, NJ 08092

Beginning of Undergraduate Record

Fall Term 2015-2016

Program: Swanson School of Engineering
Plan: Undeclared Major

Course	Description	Attempted	Earned	Grade	Points
CHEM 0410	GENERAL CHEMISTRY 1	3.00	3.00	A+	12.000
Course Attributes: Hourly Final					
ENGR 0081	FRESHMAN ENGINEERING SEMINAR 1	0.00	0.00	S	0.000
ENGR 0711	HONORS ENGR ANAL & COMPUTING	3.00	3.00	A	12.000
Course Topic: UNIVERSITY HONORS COLLEGE					
Course Attributes: Hourly Final					
MATH 0230	UNIVERSITY Honors Course	4.00	4.00	A-	15.000
Course Attributes: ANALYTIC GEOMETRY & CALCULUS 2					
Architectural Studies					
Departmental Final					
PEDC 0090	VARSITY SPORTS 1	1.00	1.00	A	4.000
PHYS 0174	BASC PHYS SCI & ENGR 1 (INTGD)	4.00	4.00	B+	13.000
Course Attributes: Departmental Final					
PSY 0010	INTRODUCTION TO PSYCHOLOGY	3.00	3.00	A	12.000
Term GPA: 3.778					
Term Totals: 18.00 18.00 68.000					
Cum GPA: 3.778					
Cum Totals: 18.00 26.00 68.000					

Academic Standing Effective 01/13/2016: Good Academic Standing

Spring Term 2015-2016

Program: Swanson School of Engineering
Plan: Undeclared Major

Course	Description	Attempted	Earned	Grade	Points
CHEM 0970	GENERAL CHEM FOR ENGINEERS 2	3.00	3.00	A	12.000
Course Attributes: Departmental Final					
ENGR 0082	FRESHMAN ENGINEERING SEMINAR 2	0.00	0.00	S	0.000
ENGR 0716	ART HANDS-ON SYS DSGN ENGR	3.00	3.00	A	12.000
Course Topic: UNIVERSITY HONORS COLLEGE					
Course Attributes: University Honors Course					
MATH 0240	ANALYTIC GEOMETRY & CALCULUS 3	4.00	4.00	A+	16.000
Course Attributes: Departmental Final					
PEDC 0091	VARSITY SPORTS 2	1.00	1.00	A	4.000
PHYS 0175	BASC PHYS SCI & ENGR 2 (INTGD)	4.00	4.00	A	16.000
SLAV 0660	SCH-FI: EAST AND WEST	3.00	3.00	A+	12.000
Course Attributes: Russian & East European Studies					
West European Studies					
Term GPA: 4.000					
Term Totals: 18.00 18.00 72.000					
Cum GPA: 3.889					
Cum Totals: 36.00 44.00 140.000					

Academic Standing Effective 05/20/2016: Good Academic Standing

Summer Term 2015-2016

Program: Swanson School of Engineering
Plan: Chemical Engineering Major

Course	Description	Attempted	Earned	Grade	Points
ENGR 0020	PROBLY & STAT FOR ENGINEERS 1	4.00	4.00	A+	16.000
Term GPA: 4.000					
Term Totals: 4.00 4.00 16.000					
Cum GPA: 3.900					
Cum Totals: 40.00 48.00 156.000					

Academic Standing Effective 09/07/2016: Good Academic Standing

Fall Term 2016-2017

Program: Swanson School of Engineering
Plan: Chemical Engineering Major

Course	Description	Attempted	Earned	Grade	Points
CHE 0100	FOUNDATIONS OF CHEMICAL ENGR	6.00	6.00	A	24.000
Course Attributes: Hourly Final					
CHE 0101	FOUNDATIONS OF CHE LABORATORY	1.00	1.00	A	4.000
CHE 1085	DEPARTMENTAL SEMINAR	0.00	0.00	S	0.000
CHE 1097	SPECIAL PROJECT	2.00	2.00	A	8.000
CHEM 0310	ORGANIC CHEMISTRY 1	3.00	3.00	A	12.000
CHEM 1720	UNDERGRAD TEACHING EXPERIENCE	2.00	2.00	A	8.000
Course Attributes: Capstone Course					
MATH 0290	DIFFERENTIAL EQUATIONS	3.00	3.00	A	12.000
Course Attributes: Departmental Final					
PEDC 0091	VARSITY SPORTS 2	1.00	1.00	A	4.000
Term GPA: 4.000					
Term Totals: 18.00 18.00 72.000					
Cum GPA: 3.931					
Cum Totals: 58.00 66.00 228.000					

Academic Standing Effective 01/09/2017: Good Academic Standing

Spring Term 2016-2017

Program: Swanson School of Engineering
Plan: Chemical Engineering Major

Course	Description	Attempted	Earned	Grade	Points
CHE 0200	CHEMICAL ENGR THERMODYNAMICS	6.00	6.00	A+	24.000
Course Attributes: Hourly Final					
CHE 0201	CHE THERMODYNAMICS LABORATORY	1.00	1.00	A	4.000
CHE 0214	INT TO CHEMICAL PRODC DESIGN	3.00	3.00	A	12.000
CHE 1085	DEPARTMENTAL SEMINAR	0.00	0.00	S	0.000
CHEM 0320	ORGANIC CHEMISTRY 2	3.00	3.00	A-	11.250
CHEM 1720	UNDERGRAD TEACHING EXPERIENCE	2.00	2.00	A	8.000
Course Attributes: Capstone Course					
HONORS 0082	SEMINAR IN CONDUCTING RESEARCH	1.00	1.00	S	0.000
Course Topic: UNIVERSITY HONORS COLLEGE					
Course Attributes: University Honors Course					
Term GPA: 3.950					
Term Totals: 16.00 16.00 59.250					
Cum GPA: 3.935					
Cum Totals: 74.00 82.00 287.250					

Student ID: 4028499



University of Pittsburgh

Academic Standing Effective 05/15/2017: Good Academic Standing

Fall Term 2017-2018

Program: Swanson School of Engineering
 Plan: Chemical Engineering Major

Course	Description	Attempted	Earned	Grade	Points
CHE 0300	TRANSPORT PHENOMENA	6.00	0.00		0.000
Course Attributes:					
CHE 0301	TRANSPORT PHENOMENA LABORATORY	1.00	0.00		0.000
CHE 0314	TAKING PRODUCTS TO MARKET	3.00	0.00		0.000
CHE 1085	DEPARTMENTAL SEMINAR	0.00	0.00		0.000
CHEM 0345	ORGANIC LABORATORY	2.00	0.00		0.000
CHEM 1010	SAFETY IN THE CHEMISTRY LAB	1.00	0.00		0.000
ENGCMP 0400	WRITTEN PROFESSIONAL COMMUNICTN	3.00	0.00		0.000
Req Designation: Writing Requirement Course					
Course Attributes: Hourly Final					

Term GPA: 0.000 Term Totals: 16.00 0.00 0.000
 Cum GPA: 3.935 Cum Totals: 74.00 82.00 287.250

Undergraduate Career Totals

Cum GPA: 3.935 Cum Totals: 74.00 82.00 287.250

Transfer Credits

Transfer Credit from Ocean County College
 Applied Toward Swanson School of Engineering Program

Fall Term 2015-2016

Course	Description	Attempted	Earned	Grade	Points
BIO5C 0050	FOUNDATIONS OF BIOLOGY LAB 1	1.00	1.00	T	0.000
BIO5C 0150	FOUNDATIONS OF BIOLOGY 1	3.00	3.00	T	0.000
MATH 0220	ANALYTIC GEOMETRY & CALCULUS 1	4.00	4.00	T	0.000

Course Trans GPA: 0.000 Transfer Totals: 8.00 8.00 0.000

End of Undergraduate Record

Welcome, [Name]. Here is your most recent score.

SAT

October 11, 2014

12th Grade

0
Critical Reading

690
Mathematics

720
Writing

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Other Scores

SAT Subject Test - Physics

June 7, 2014 11th Grade

710

Total Score

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SAT Subject Test - Mathematics Level 2

June 7, 2014 11th Grade

760

Total Score

[View Details](#)

Old SAT

March 8, 2014 11th Grade

720 Critical Reading

770 Mathematics

750 Writing

[View Details](#)

Old PSAT/NMSQT

Fall 2013 11th Grade

71 Critical Reading

70 Mathematics

65 Writing

[View Details](#)

SAT

October 5, 2013 11th Grade

0 Critical Reading

0 Mathematics

0 Writing

[View Details](#)

Old SAT

March 9, 2013 10th Grade

670 Critical Reading

650 Mathematics

600 Writing

[View Details](#)

SAT Subject Test - Chemistry

January 26, 2013 10th Grade

750

Total Score

[View Details](#)

Old PSAT/NMSQT

Fall 2012 10th Grade

64 Critical Reading

58 Mathematics

59 Writing

[View Details](#)

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