

# Andrew E. Toader

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## OBJECTIVE

Pre-Medical Computer Engineering student passionate about helping others through medical research and clinical opportunities.  
Eager to learn, good at communicating, excellent at working in teams, and a natural leader.

## EDUCATION

### Swanson School of Engineering, University of Pittsburgh

*Bachelor of Science – Computer Engineering*

*Concentration in Signals Processing*

*Minor in Chemistry*

Swanson School of Engineering Deans List

August 2018 – present

**GPA: 3.7** (4.0 scale)

### Mt. Lebanon High School

*STEM Academy – Biological Science Track*

Graduated Cum Laude, Highest Honor Roll

August 2014 – June 2018

**GPA: 4.8** (5.0 scale)

## HONORS/AWARDS

**Honors Student** – *Swanson School of Engineering, University of Pittsburgh*

**Best Undergraduate Research** – *University of Pittsburgh Rehabilitation Institute*

**Cum Laude** – *Mt. Lebanon High School*

August 2018 – present

July 2019

May 2018

## EXPERIENCE

### Embedded Systems Engineering Intern, Medtronic

*Manager: Kevin Ponziani, M.Sc.*

- Worked in a team of ~100 engineers to develop a Cryoablation device
- Engineered, re-packaged, documented architecture, and tested a package of code to communicate between the controller board (controlled the catheter and systems on the device) and the main computer (recorded physician's control). Used TCP/UDP/IP to communicate between computers, and Unity testing software to test the package.
- Helped other interns learn how to use STMicroelectronics Development Board with IAR Embedded Workbench.
- Received Medtronic Leadership Certificate by taking classes from Medtronic on leading and managing people.

June 2020 – August 2020

### Student Researcher, McGowan Institute for Regenerative Medicine

*PI: Dr. Alberto L. Vazquez, PhD*

- Develop MATLAB programs to analyze Flavoprotein Autofluorescence Images (FAI), and brain-electrode signals of animal subjects.
- Work with mentors to interpret data and draw conclusions based off of analyzed data.
- Help new students in lab learn MATLAB and basics of analyzing data.

Nov. 2018 – present

### Student Researcher, Children's Hospital of Pittsburgh

*PI: Dr. Onome Oghifobibi, MD*

- Developed Python program to measure diameter of specific blood vessels in the cerebral cortex from Multi-Photon images.
- Used python modules such as NumPy, CV2, PyPlot/Matplotlib, Pickle, and os.
- Used mathematical/image processing techniques such as *Bresenham's Line Algorithm*, *Gaussian Smoothing*, and creating normalized intensity profiles across vessels.
- Assisted in capturing the Multi-Photon images and analyzing/organizing the data.

August 2018 – present

## RESEARCH PUBLICATIONS

- (*In preparation*) Iordanova B, **Toader AE**, Fukuda H, Alexander H, Manole MD, Vazquez AL. *In vivo* assessment of neural and metabolic activity after pediatric cardiac arrest

- *(In preparation)* Ogofobibi O, **Toader AE**, Alexander H, Manole MD. Epinephrine lowers cortical blood flow post cardiac arrest
- *(Waiting to be published)* Mavrinac JM, **Toader AE**, Budharm K, Suffoletto JL. An Innovative, Hands-on, Learner-focused Approach to Teaching Acute Care Topics and Procedures to Internal Medicine Residents in the Emergency Department.
- Weberding NT, Saladino RA, Minnigh MB, Oberly PJ, Tudorascu DL, Poloyac SM, Manole MD. Adenosine Administration with a Stopcock Technique Delivers Lower-Than-Intended Drug Doses. *Ann Emerg Med.* 2018 Feb;71(2):220-224.

## PRESENTATIONS

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<b>Pediatric Academic Societies (PAS) International Conference</b> – Poster Presentation	May 2020
- <i>Invited, but canceled Due to COVID-19 Pandemic</i>	
<b>Safar Center Symposium</b> – Podium Presentation	July 2019
<b>University of Pittsburgh Rehabilitation Institute Research Day</b> – Podium Presentation	July 2019
<b>Swanson School of Engineering First Year Research Conference</b> – Group Podium Presentation	April 2019

## VOLUNTEER ACTIVITIES

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<b>National Ski Patrol</b>	2015 – present
- Work in teams with other patrollers to deliver prehospital care to injured skiers and snowboarders	
- Continually assess safety of slopes to prevent injuries	
<i>Senior Medical Patroller</i> (March 2020 – present)	
- Passed the senior medical examination and course focusing on leadership, scene management, and medical skills	
- Increased leadership and accident scene management abilities	
- Improved medical judgement and deeper understanding of medical treatment of injuries	
- Succinctly communicate with EMTs and Paramedics to best keep the continuity of care for the patients	
<i>Alpine Patroller</i> (November 2015 – March 2020)	
- Developed first aid skills and medical emergency management skills through hands-on experience	
<b>Medical Mission in Aguacate, Guatemala in Fr. Andres Giron Clinic</b>	January 2018
- Leader of optometry clinic. Assessed vision with portable auto-refractor. Screened 220 patients and fitted 80 patients with glasses. Assisted with medical procedures in the clinic.	
<b>Blind Outdoor Leisure Development (BOLD), Blind Skier Guide</b>	2015 – present
- Lead blind skiers down the slope. Work in a team of 3 people to create a safe environment around the skier	
<b>Veteran's Administration (VA) Hospital Youth Volunteer</b>	2016 – 2017
- Assisted VA Hospital staff in preparing patient beds, monitoring the halls, and organizing transplant patient files. Talked to and comforted veteran patients.	

## ORGANIZATIONS

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<b>Institute of Electrical and Electronics Engineers (IEEE), University of Pittsburgh Chapter</b>	August 2019 – present
- IEEE is devoted to fostering technological innovation and excellence to benefit humanity	
- Creates an environment where students are given the resources and encouraged to grow professionally	
<i>Corporate Liaison</i> (August 2020 – present)	
- Leading the organization of an internship and career fair to provide employment opportunities to Electrical and Computer Engineers	
- Organized a soldering workshop to teach Electrical Engineers the fundamentals of using soldering techniques to create electrical connections	
- Communicate with career services and companies to create employment opportunities for Electrical and Computer Engineering students	
- Mentor new Electrical and Computer Engineers and provide them with the resources they need to attain their goals	

**Biomedical Engineering Society (BMES), University of Pittsburgh Chapter**

August 2018 – present

- BMES is devoted to building and supporting the bioengineering community
- Provide students with the resources and the professional network needed to succeed in classes as well as upon graduation

*Peer Mentor* (August 2020 – present)

- Mentor incoming freshman bioengineers, providing them with the resources they needed to succeed in classes
- Help mentees find research positions/internships and teach them about professional etiquette

**MEDLIFE, University of Pittsburgh**

August 2019 – present

- MEDLIFE is devoted to providing medicine, education, and development to low-income areas around the world
- Fundraise for yearly mission trips around the world to provide medical help, education, and infrastructure to areas around the world that cannot afford those services otherwise
- Organize medical supplies to take on yearly mission trips
- Write cards for underprivileged children in Pittsburgh area around Christmas and the holidays, to bring happiness to the children

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**CLINICAL OBSERVING EXPERIENCES**

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- 100 Hours Total

**Dr. Sean Button, MD**

July 2020 – present

*Pediatric Emergency Medicine*

- 66 Hours

**Dr. Mioara Manole, MD**

July 2020

*Pediatric Emergency Medicine*

- 8 Hours

**Dr. Stephen Conti, MD**

July 2017

*Orthopaedic Surgery*

- 17 Hours

**Dr. Periklis Papapetropoulos, MD**

August 2017

*Orthopaedic Surgery*

- 9 Hours

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**COMPUTER LANGUAGES AND SOFTWARE EXPERIENCE**

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C/C++ – VHDL – Python – JavaScript – MATLAB – Unix – HTML/CSS – Microsoft Office

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**CERTIFICATIONS**

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**Medtronic Leadership Certificate**

August 2020

**Biophysics of Ablation Energy Sources** (*Medtronic Academy*)

July 2020

**Electrophysiology Studies** (*Medtronic Academy*)

July 2020

**Senior Medical Outdoor Emergency Care**

March 2020

**Basic Life Support (BLS) For Healthcare Providers**

since 2015

**Outdoor Emergency Care (OEC)**

2015

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**LANGUAGES**

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English (*native*) – Romanian (*native*) – German (*conversational*)