

General Information:

Name: Brian C. Ayers
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Education:

- 2020 **University of Rochester School of Medicine and Dentistry – Rochester, NY**
Doctor of Medicine, Candidate for M.D. (Expected May 2020)
- USMLE Step 1: 244, Step 2: 270
 - Clinical Honors: Surgery, Medicine, OBGYN, Pediatrics
 - Pre-clinical Top 10%: Human Anatomy/Physiology/Histology, Immunology, Women's Health
- 2016 **University of Rochester Simon Business School – Rochester, NY**
Masters of Business Administration (MBA)
- Phillip Myers Award for highest GPA in graduating class
- 2014 **Middlebury College – Middlebury, VT**
Bachelor of Science (BS) - Biochemistry major, Computer Science minor
- Summa cum laude, GPA: 3.81

Honors and Awards:

- 2018
- Innovation Corps Grant, National Science Foundation
 - Looking to the Future Scholarship Recipient, Society of Thoracic Surgery
 - Student Research Fellowship Grant, Office of Medical Education
- 2017
- Eastern Vascular Surgery Society Annual Meeting Medical Student Scholarship
 - Society for Vascular Surgery General Surgery Resident/Med Student Scholarship
- 2016
- Phillip Myers Award, Simon Business School, highest GPA in graduating class
 - Beta Gamma Sigma, International Business Honor Society
 - Gary and Bill Sanders Poster Award, Computing in Cardiology, Vancouver, Canada
 - Summer Research Grant, URSMD Office of Medical Education
- 2015
- New York State Business Plan Competition 3rd Place, Social Entrepreneurship
 - McGary Merit Scholarship Recipient, Simon Business School
- 2014
- Baggataway Award (selected for leadership and sportsmanship), Middlebury Men's Lacrosse
 - NEILA Academic All-Region Selection (Lacrosse)
 - NESCAC All-Academic Selection (Lacrosse)
- 2010
- Charter Communications Scholar-Athlete of the Year for Central New England
 - Academic All-American (Lacrosse); All New-England (Football, Quarterback)

Research Experience:

- Aug 2018 –
June 2019 **Cardiothoracic Surgery Research Department – Rochester, NY**
Student Research Fellowship
- Clinical research – extracting big data from Epic for clinical research on ECMO and LVAD patients using machine learning and traditional statistical approaches
 - Educational research – working with an engineering team to develop a high-fidelity 3D printed hydrogel model of the thoracic cavity for surgical simulation

- Summer 2016 **Heart Research Follow-Up Program, URMC – Rochester, NY**
Digital Signal Processing Software Engineer
- Wrote digital signal processing software to implement algorithmic detection of atrial fibrillation using a novel EKG monitoring device.
 - Obtained funding from the URSMD Office of Medical Education
- Summer 2014 **Middlebury College Biology Department – Middlebury, VT**
Bioinformatics Research Technician
- Performed analysis of next-gen sequencing datasets to identify specific gene differentiation, alternative splicing, and novel transcripts to study the genetics of various diseases. ^[1] _[SEP]
- Summer 2013 **University of Massachusetts Medical School – Worcester, MA**
Researcher in Biochemistry and Molecular Pharmacology Department
- Conducted research on the cytotoxicity and functionalization of up-converting nanoparticles to be used for cancer imaging
 - Applied knowledge to senior thesis project “Conjugation of anti-CD47 antibody to gold nanoparticles via click chemistry for cancer therapy”
- Summer 2012 **University of Massachusetts Medical School – Worcester, MA**
Clinical Research Assistant in the Emergency Department
- Surveyed patients in the emergency room to gather data on tobacco use for clinical studies.
 - Provided resources and counseling on tobacco cessation programs.
- Summer 2011 **University of Massachusetts Medical School – Worcester, MA**
Cell Biology Summer Researcher
- Extracted and measured levels of various miRNA in arthritic hip and knee cartilage taken from total joint replacement patients to study osteoarthritis at the molecular level.

Research Support:

- 2018 – 2019 **Innovation Corps Grant, National Science Foundation; \$3,000**
- Grant awarded to aid in the development of an iOS based app to collect patient reported outcomes and activity data while outside of the hospital.
 - Goal is to aid in clinical research and eventually develop a robust remote patient monitoring platform incorporating machine learning to improve outcomes for patients with heart failure.
 - My role is the development of the concept and building of the app.
- 2018 – 2019 **Student Research Fellowship Grant, Office of Medical Education URMC; \$18,600**
- Grant awarded to conduct a research year with the cardiothoracic surgery department
 - Research focused on outcomes projects involving big data and predictive analytics, as well as the development of 3D-printed synthetic organs for surgical simulation
- 2016 **Student Research Grant, Office of Medical Education URMC; \$5,000**
- Grant awarded for 3 months of research with the Heart Follow-Up Research Department
 - My project was to write the code to automate the detection of atrial fibrillation using a single lead signal from a novel EKG-enabled scale.

Research:

Publications:

- K Wood, **B Ayers**, F Sagebin, H Vidula, S Thomas, B Barrus, P Knight, S Prasad, I Gosev. Complete Sternal-Sparing HeartMate 3 Implantation: a Case Series of Ten Consecutive Patients. *Accepted for publication in The Annals of Thoracic Surgery.*
- M Balceniuk, M Stoner, **B Ayers**, A Kokkosis, A Tassoipoulos. Post-Approval Safety and Efficacy of Transcarotid Arterial Revascularization. *J Vasc Surg.* 2018; 67(6): e187.

- M Balceniuk, F Cardelli, **B Ayers**, I Chu, A Doyle, M Stoner. Left Subclavian Artery Coverage Association with Neurologic Events in Trauma Patients Undergoing Thoracic Endovascular Repair. *J Vasc Surg*. 2018; 68(2): e17-18.
- G Fernandez, C Narins, J Bruckel, **B Ayers**, F Ling. Patient and Physician Perspectives on Public Reporting of Mortality Ratings for Percutaneous Coronary Intervention in New York State. *Circ Cardiovasc Qual Outcomes*. 2017 Sep; 10(9).
- **B Ayers**, C Beshaw, E Serrano-Finetti, O Casas, R Pallas-Areny, JP Couderc. Enabling Atrial Fibrillation Detection Using a Weight Scale. *Computing in Cardiology*. Sep 2016; 43:11-5.

Abstracts and Presentations:

- **B Ayers**, F. Sagebin, K. Wood, H. Vidula, J. Alexis, B. Barrus, S. Prasad, I. Gosev. Complete Sternal-Sparing Technique Improves Outcomes and Decreases RV Failure Compared to Re-Operative Sternotomy. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*
- **B Ayers**, K. Wood, E. Lee, J. Bruckel, F. Ling, V. Kutiyifa, S. McNitt, H. Vidula, J. Alexis, S. Prasad, I. Gosev. PROMISing New Tool Correlates Well with Kansas City Cardiomyopathy Questionnaire in Left Ventricular Assist Device Patients. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*
- **B Ayers**, F. Sagebin, K. Wood, B. Barrus, S. Prasad, I. Gosev. Extracorporeal Membrane Oxygenation is an Effective Bridge to Left Ventricular Assist Device Implantation. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*
- K. Wood, **B Ayers**, S. Philippo, D. Lindenmuth, R. Stahl, J. Wyrobek, H. Vidula, J. Alexis, B. Barrus, S. Prasad, I. Gosev. Regional Nerve Block Decreases Opioid Use after Complete Sternal Sparing Left Ventricular Assist Device Implantation. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*
- **B Ayers**, K. Wood, J. Falvey, H. Vidula, J. Alexis, B. Barrus, S. Prasad, I. Gosev. Safety and Efficacy of Recombinant Factor VII in HeartMate 3 Recipients. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*
- A Melvin, **B Ayers**, K Wood, I Gosev. Lactate is an Early Predictor of Mortality in Patients on Venoaerterial Extracorporeal Membrane Oxygenation. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*
- I. Gosev, K. Wood, **B Ayers**, H. Vidula, J. Alexis, N. Kumar, J. Delehanty, B. Barrus, P. Knight, L. Chen, S. Prasad. Less Invasive HeartMate 3 Implantation is Safe and Reproducible with Excellent Outcomes. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*
- **B Ayers**, K. Wood, S. Sheen, E. Morrison, H. Vidula, J. Alexis, S. Prasad, I. Gosev. Complete Sternal-Sparing LVAD Implantation Improves Mobility Compared to Full Sternotomy. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*
- K. Wood, **B Ayers**, H. Vidula, J. Alexis, B. Barrus, S. Prasad, I. Gosev. Complete Sternal-Sparing LVAD Implantation is a Safe and Effective Technique for Obese Patients. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*
- K. Wood, **B. Ayers**, H. Vidula, J. Alexis, B. Barrus, S. Prasad, I. Gosev. INTERMACS 3 and 4 Patients Have Excellent Outcomes after Complete Sternal-Sparing HeartMate 3 Implantation. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, Fl, Apr 2019.*

- H Vidula, S McNitt, M Wang, B Polonsky, S Sherazi, I Gosev, **B Ayers**, K Wood, B Barrus, J Alexis, L Chen, V Kutiyifa, I Goldenberg. Time-Dependent Association of Renal Function with Long-Term Survival Following LVAD Implantation. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, FL, Apr 2019.*
- H Vidula, S McNitt, M Wang, B Polonsky, S Sherazi, **B Ayers**, K Wood, B Barrus, J Alexis, L Chen, V Kutiyifa, I Gosev, I Goldenberg. Long-Term Survival of Patients Requiring Early Temporary RVAD Support Following LVAD Implantation. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, FL, Apr 2019.*
- H Vidula, S McNitt, M Wang, B Polonsky, S Sherazi, **B Ayers**, K Wood, B Barrus, J Alexis, L Chen, V Kutiyifa, I Gosev, I Goldenberg. Predictors of Early Unplanned RVAD Use in Patients Undergoing LVAD Implantation. *Accepted, International Society for Heart and Lung Transplantation Annual Meeting, Orlando, FL, Apr 2019.*
- **B Ayers**, K Wood, A Melvin, S Prasad, I Gosev. MELD-XI is Predictive of Mortality in Extracorporeal Membrane Oxygenation (ECMO). *Accepted for poster presentation, The Society of Thoracic Surgery Annual Conference, San Diego, CA, January 2019.*
- K Wood, **B Ayers**, A Melvin, S Prasad, I Gosev. Not Anticoagulating Patients Supported with Venoarterial Extracorporeal Membrane Oxygenation Decreases Complications, Blood Transfusions and Heparin Induced Thrombocytopenia. *Accepted for oral presentation, The Society of Thoracic Surgery Annual Conference, San Diego, CA, January 2019.*
- **B Ayers**, K Wood, A Melvin, I Gosev. Higher ACT Predictive of Mortality for Patients on Extracorporeal Membrane Oxygenation (ECMO). *Poster, American College of Surgeons Clinical Conference, Boston, MA, Oct 2018.*
- M Balceniuk, I Chu, **B Ayers**, M Stoner. The Association of Aortic Injury Grade and Overall Injury Severity with Resource Utilization in Patients Undergoing Endovascular Aortic Injury Repair. *Oral Presentation, American College of Surgeons Clinical Conference, Boston, MA, Oct 2018.*
- **B Ayers**, K Wood, F Sagebin, N Kumar, P Knight, B Barrus, S Prasad, I Gosev. The Use of Hydroxycobalamin for Vasoplegic Syndrome in Left Ventricular Assist Device (LVAD) Patient. *Oral Presentation, The Society of Thoracic Surgeons Critical Care Conference, Washington, DC, Oct 2018.*
- M Balceniuk, M Stoner, **B Ayers**, A Kokkosis, A Tassoipoulos. Post-Approval Safety and Efficacy of Transcarotid Arterial Revascularization. *Poster, Eastern Vascular Society, Washington, DC, Sept 2018*
- M Balceniuk, M Stoner, **B Ayers**, A Kokkosis, A Tassoipoulos. Post-Approval Safety and Efficacy of Transcarotid Arterial Revascularization. *Poster, Society for Vascular Surgery, Boston, MA, June 2018.*
- F Sagebin, **B Ayers**, B Barrus, S Prasad, H Vidula, E Storozyznsky, S Thomas, L Chen, J Alexis, I Gosev. Predictors of Respiratory Failure in Patients Supported with Continuous Flow Ventricular Assist Devices And The Effect on Survival. *Poster, International Society for Heart and Lung Transplantation, Nice, France, Apr 2018.*
- F Sagebin, **B Ayers**, B Barrus, S Prasad, H Vidula, E Storozyznsky, S Thomas, L Chen, J Alexis, I Gosev. Effects of Right Ventricle Optimization on Post-Operative Outcomes: a Retrospective Comparison. *Poster, International Society for Heart and Lung Transplantation, Nice, France, Apr 2018.*
- **B Ayers**, S Cameron, S Toth, A Doyle, X Caliste, M Stoner. Innominate Artery Stenting with Flow-Reversal Neuroprotection: Case Report of Two Surgical Procedures. *Poster, Eastern Vascular Society, Savannah, GA, Oct 2017.*

- S Toth, D Mix, S Cameron, **B Ayers**, R Glocker, J Ellis, A Doyle, K Raman, M Stoner. Embolization of Retrievable Inferior Vena Cava Filter Fragment to the Right Ventricle: A Case Report. *Poster, Eastern Vascular, Savannah, GA, Oct 2017.*
- **B Ayers**, S Toth, D Mix, N Kumar, K Rasheed, X Caliste, M Stoner. Clinical Management of Recurrent Leiomyosarcoma of the Inferior Vena Cava Requiring Aortobifemoral Bypass. *Poster, Society for Vascular Surgery, San Diego, CA, June 2017.*
- **B Ayers**, C Beshaw, E Serrano-Finetti, O Casas, R Pallas-Areny, JP Couderc. Enabling Atrial Fibrillation Detection Using a Weight Scale. *Poster, Computing in Cardiology, Vancouver, Canada, September 2016.*
- P Fanning, **B Ayers**, M Walcott, G Stein, D Ayers, J Lian. The Varus Knee Reveals Differential Expression Patterns of miRNAs in Spared vs. Non-spared Compartments. *Poster, Orthopedic Research Society Annual Meeting, San Francisco, CA, February 2012*

Manuscripts submitted for review:

- **B Ayers**, G Weinberg, M Caserta, A Kauffman, D Wakeman. An Unusual Complication of Appendicitis: Pyogenic Liver Abscess. *Manuscript submitted to Surgical Infections for review.*
- **B Ayers**, K Wood, F Sagebin, N Kumar, P Knight, B Barrus, S Prasad, I Gosev. The Use of Hydroxycobalamin for Vasoplegic Syndrome in Left Ventricular Assist Device (LVAD) Patient. *Manuscript submitted to JTCVS for review.*
- I Gosev, **B Ayers**, K Wood, B Barrus, S Prasad. HeartMate 3 Patients Off Anticoagulation Due to Severe Bleeding Events Did Not Have an Increased Rate of Thromboembolic Events. *Manuscript submitted to the Journal of Heart and Lung Transplantation for review.*
- **B Ayers**, R Stahl, K Wood, W Bernstein, I Gosev, S Philipppo, B Lebow, B Barrus, D Lindenmuth. Regional Nerve Block Decreases Opioid Use After Complete Sternal-Sparing Left Ventricular Assist Device Implantation. *Manuscript submitted to Journal of Cardiac Surgery for review.*

Abstracts submitted for review:

- **B Ayers**, K Wood, N Kumar, S Prasad, I Gosev. Artificial Intelligence Predicts Mortality within 48 Hours of Extracorporeal Membrane Oxygenation Support. *Abstract submitted to AATS for review.*
- M Balceniuk, **B Ayers**, M Stoner. The Effect of Anticoagulation Therapy on the Incidence and Outcomes of Endoleaks in EVAR Patients *Abstract submitted for review.*
- M Balceniuk, P Zhao, **B Ayers**, M Stoner. Outcomes of Distal Lower Extremity Bypass Based on Dialysis Status. *Abstract submitted for review.*
- M Balceniuk, P Zhao, I Chu, **B Ayers**, T Negron, M Stoner. Opioid Consumption Following Carotid Vascular Surgery. *Abstract submitted for review.*

Teaching Experience:

- 10/2017 – 9/2019 **Course Coordinator and Teaching Assistant**, University of Rochester Medical School
- Student leader for the course “Effective Communication in the Clerkship”
 - Elective for 2nd year medical students to practice having difficult conversations with standardized patients on diverse topics such as end of life decision making and delivering cancer diagnosis

- 8/2016 – 8/2018 **Digital Medical Education Developer**, University of Rochester Medical School
- Built an interactive web app to practice identifying histology slides during 1st year of medical school
 - Distributed the website to all classmates and we subsequently achieved the highest class average for histology in the school's history
 - Transferred code to the university IT department so that future classes can continue to use the resource

Professional and University Leadership Positions:

- 08/2018 – Present **National Representative**, Committee on Health Information Technology, American Medical Association
- Elected member of the AMA committee on healthcare information technology
 - We provide research and recommendations for technology related healthcare policy for the AMA
- 08/2016 – Present **Technology Coordinator**, URWell Free Health Clinic, University of Rochester Medical School
- In charge of all technology related to the student run free healthcare clinic, including managing the website to relay information to our patient population.
 - Built a private Wikipedia-style website to allow for the central storage of clinic information
- 10/2016 – 05/2017 **Technology Representative**, Student Senate, University of Rochester Medical School
- Elected representative on behalf of the medical students to represent their interests to the school administration in regards to the use of technology in the medical school curriculum.
- 10/2016 – 05/2017 **Student Leader**, Interventional Radiology, University of Rochester Medical School
- Helped run the interventional radiology student interest group, including hands-on practical sessions demonstrating technique for various IR procedures.
- 08/2016 – 05/2017 **Student Liaison**, Surgery Interest Group, University of Rochester Medical School
- Helped coordinate events for the medical school surgery interest group throughout the year, specifically acting as the liaison to the vascular surgery department.

Work Experience:

- 01/2014 – Present **Freelance Web Developer – Rochester, NY**
Self-employed
- Build websites as freelance web developer. Clients include startup healthcare companies spun-out of the University of Rochester Technology transfer office.
- 10/2014 – 06/2016 **Simon Venture Capital Fund – Rochester, NY**
Due Diligence Analyst
- Performed due diligence analysis on healthcare companies seeking investment from the Simon School Venture Capital Fund.
 - Presented analysis and investment recommendation directly to the Board of Directors of the fund, including current board members of the university.
- 01/2011 – 10/2015 **Goodees Clothing – Southborough, MA**
Founder, acquired 2015
- Founded a custom clothing and lifestyle brand during college that is positioned as a socially conscious, USA-made clothing company.
 - Expanded to over 10 schools across the country. Acquired in 2015 before starting medical school.

Volunteer and Community Service:

- 2014 – Present Patrick Wiese Foundation, Syracuse, NY, Board Member
- 2014 Lacrosse the Nations, Managua, Nicaragua, Volunteer
- 2013 Common Hope, Antigua, Guatemala, Volunteer
- 2012 Open Door Clinic, Middlebury, VT, Volunteer
- 2010 Orphanage Outreach Teach Corps, Dominican Republic, Volunteer

Memberships:

2018 – Present American College of Surgeons
2018 – Present Society of Thoracic Surgery
2016 – Present Beta Gamma Sigma, International Business Honor Society
2015 – Present Surgery Interest Group
2015 – Present American Medical Association
2015 – Present Medical Society of the State of New York

Interests:

Waterskiing, Snow skiing, Hiking, Running, Ceramics