

**Alexander Fortin Lesser**  
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## EDUCATION

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- 2018–Ongoing      Case Western Reserve University School of Medicine
- Doctor of Medicine (expected)
  - Doctor of Philosophy (expected)
- 2012–2016      Cornell University
- Bachelor of Science
- Major in Human Biology, Health, and Society with High Distinction
  - Minor in Science and Technology Studies

## RESEARCH EXPERIENCE

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- 2016–2018      National Institutes of Health, Medical Genomics and Metabolic Genetics  
PI: Charles P. Venditti, MD, PhD  
Project: “Investigation of Animal Models and Novel Therapies for Inherited Metabolic Disorders”
- Characterized a new mouse model of *cblA* methylmalonic acidemia, an inborn error of metabolism, by studying the disease course, pathophysiology, cobalamin responsiveness, and propionate oxidation.
  - Assessed the effectiveness of antibiotic interventions and gene therapy in the *cblA* methylmalonic acidemia mouse model.
  - Performed *in vitro* and *in vivo* studies in wild-type FVBN mice to assess efficacy of adeno-associated viral gene therapy for the lysosomal storage disorder Mucopolipidosis Type IV.
- 2015–2016      Cornell University, Division of Nutritional Sciences  
PI: Patrick Stover, PhD  
Project: “Examining Manipulations of the Folate-Mediated One-Carbon Metabolism Pathway”
- Investigated formate homeostasis as a function of folate availability and uridine treatment in HeLa cells.
  - Examined effects of methionine in culture on uracil misincorporation into DNA in HeLa, HepG2, and SH-SY5Y cells.
  - Explored MTHFD1 (methylenetetrahydrofolate dehydrogenase 1) localization in relation to folate availability
- Summer 2014      St. Joseph’s Hospital Health Center, Cardiology  
PI: Ronald Caputo, MD  
Project: “Assessing the Safety and Feasibility of Robotic Assisted Stent Placement”
- Assisted in preliminary data analysis and paper writing concerning the feasibility of robotic percutaneous coronary intervention through the radial approach and for treating artery stenosis.
  - Formed database from patient electronic health records pertaining to the use of the robotic system.

## BIBLIOGRAPHY

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### Oral Presentations

**Lesser AF**, Hennessy-Straus SG, Field MS, and Stover PJ. “Uridine Supplementation Affects Formate Homeostasis in HeLa Cells” Summer Institute for Life Sciences V Undergraduate Symposium; Ithaca, NY (2015). Co-presenter.

### Poster Presentations

**Lesser AF**, Shchelochkov OA, Smith S, Epping M, Manoli I, Segre J, and Venditti CP. “No Sham: Antibiotic Therapy Ameliorates Disease in a Mouse Model of *cbIA* Methylmalonic Acidemia” National Institutes of Health Postbac Poster Day; Bethesda, MD (2018). Presenter.

**Lesser AF**, Shchelochkov OA, Smith S, Epping M, Zervas P, Manoli I, Segre J, and Venditti CP. “A viable knockout murine model of *Mmaa (cbIA)* deficiency provides a platform for microbiome manipulations” American Society of Human Genetics; Orlando, FL (2017). Presenter.

**Lesser AF**, Smith S, Epping M, Zervas P, Manoli I, and Venditti CP. “A mouse model of *Mmaa (cbIA)* deficiency replicates the infantile phenotype of isolated methylmalonic acidemia (MMA)” American Society for Gene and Cell Therapy; Washington DC (2017). Presenter.

Hennessy-Straus SG, **Lesser AF**, Field MS, and Stover PJ. “Impairments in Folate-Mediated One-Carbon Metabolism: Uracil Misincorporation and MTHFD1 Localization” Cornell Undergraduate Research Board Forum; Ithaca NY (2016). Co-presenter.

### Published Abstracts

Caputo R, **Lesser A**, Fischl M, Simons A. Safety and Feasibility of Robotic PCI Utilizing Radial Arterial Access. *J Am Coll Cardiol*. 2015;65(10\_S): A203. doi:10.1016/S0735-1097(15)60203-0. Abstract.

Caputo R, **Lesser A**, Simons A. CRT-313 Feasibility of Robotic Percutaneous Renal Artery Revascularization. *J Am Coll Cardiol Interv*. 2015;8(2\_S): S35-S36. doi:10.1016/j.jcin.2014.12.137. Abstract.

## HONORS AND AWARDS

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2016–2018	NIH Post-baccalaureate IRTA (Intramural Research Training Award) Fellow
2016	Graduation with High Distinction
2012–2016	Dean’s List (all semesters)
2014–2016	Kappa Omicron Nu (College of Human Ecology Honor Society)
2013–2016	Golden Key International Honor Society
2013–2016	National Society of Collegiate Scholars

## TEACHING EXPERIENCE

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2019	Teaching Assistant, Histopathology Case Western Reserve University Medical School Course Director: Nicholas Ziats, MD <ul style="list-style-type: none"><li>• Taught introductory histopathology concepts to a discussion section of 8 first year medical students.</li></ul>
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- 2016 Teaching Assistant, Nutrient Metabolism  
Cornell University  
Course Director: Ling Qi, PhD
- Assisted in course planning, organization, exam writing, proctoring, and grading.
  - Lectured on folate metabolism and my research at the Stover Lab to the entire course's approximately 115 students.
- 2015 Teaching Assistant, Nutrition, Health, and Society  
Case Western Reserve University School of Medicine  
Course Director: David Levitsky, PhD
- Planned and led a weekly discussion section of 15 students with the goals of teaching critical analysis skills, reviewing key concepts from lectures, and assisting with preparation of major class assignments.

## ACTIVITIES

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- 2019–Present MTSP Mental Health and Wellness Committee  
2018–Present MSTP Council