

Erin I. McDonnell

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Date of Preparation: July 21, 2021

EDUCATION

Columbia University

Doctor of Philosophy in Biostatistics

Current research interests: Statistical learning, graphical models, functional data analysis

New York, NY

In progress

Harvard University

Master of Science in Biostatistics

Boston, MA

March 2014

Christopher Newport University

Bachelor of Science in Mathematics, Minor in Leadership Studies

Newport News, VA

December 2011

AWARDS AND RECOGNITION

TRANSFORM TL1 Precision Medicine Pre-doctoral Trainee

June 2020 – May 2021

Harvard School of Public Health Central Grant

December 2013

Magna cum Laude

December 2011

President's Leadership Program Scholar

August 2008 – December 2011

Alpha Chi National Honor Society

Inducted November 2010

Pi Mu Epsilon National Mathematics Honor Society

Inducted March 2010

PROFESSIONAL EXPERIENCE

Analysis Group

Boston, MA

Analyst, Health Economics and Outcomes Research practice

June 2016 – July 2017

- Designed several interactive web applications using R Shiny, allowing clients to modify analysis parameters.
- Applied causal inference techniques to estimate treatment effects on survival amidst informative censoring.
- Applied recurrent-event survival techniques to identify predictors of progression of a chronic disease.
- Analyzed health care costs and utilization from a large cloud-based insurance claims database.

Massachusetts General Hospital Biostatistics Center

Boston, MA

Biostatistician / Bioinformatics Specialist

January 2014 – June 2016

- Performed advanced analyses (e.g. competing risk survival analysis, inverse probability weighting) primarily in oncology and autism research.
- Reviewed study protocols as member of the Dana Farber / Harvard Cancer Center Scientific Review Committee.
- Provided data management support for over 10 studies, including 2 large multi-institutional pediatric registries.

Masters Level Intern Biostatistician

May 2013 – December 2013

- Thesis project under the guidance of David Schoenfeld, PhD: Fit structural nested models to estimate the causal effects of feeding tube placement on survival in ALS patients in the presence of confounding by indication.

TEACHING

Columbia University

New York, NY

Teaching Assistant, Statistical Practices and Research for Interdisciplinary Sciences (doctoral level)

Spring 2020

Teaching Assistant, Data Science II (graduate level)

Spring 2020

Tutor, R programming

Fall 2019

Lead Teaching Assistant, Data Science I (graduate level)

Fall 2018, Fall 2019

R PACKAGES

- Wrobel, J., Goldsmith, J., **McDonnell, E.** (2020). registr: Curve registration for exponential family functional data. R package version 1.0.0. <https://cran.r-project.org/web/packages/registr/index.html>.

PUBLICATIONS

- **McDonnell EI**, Zipunnikov V, Schrack JA, Goldsmith J, Wrobel J. Scale-invariant time registration of 24-hour accelerometric rest-activity profiles and its application to human chronotypes. *Manuscript in preparation*.
- Sanders K, Staubitz J, Juárez AP, Marler S, Browning W, **McDonnell E**, et al. Addressing challenging behavior during hospitalizations for children with autism: A pilot applied behavior analysis RCT. *Autism Research*. (Accepted April 2020).
- McDonald CM, Sajeev G, Yao Z, **McDonnell E**, Elfring G, Souza M, et al. Deflazacort versus prednisone treatment for Duchenne muscular dystrophy: a meta-analysis of disease progression rates in recent multicenter clinical trials. *Muscle & Nerve*. 2020; 61(1):26-35.
- Neumeyer AM, Cano Sokoloff N, **McDonnell EI**, Macklin, EA, McDougale CJ, Holmes TM, et al. Nutrition and bone density in boys with autism spectrum disorder. *Journal of the Academy of Nutrition and Dietetics*. 2018; 118(5):865-877.
- Nicholson K, Murphy A, **McDonnell E**, Shapiro J, Simpson E, Glass J, et al. Improving symptom management for people with amyotrophic lateral sclerosis. *Muscle & Nerve*. 2018; 57(1):20-24.
- Kuhlthau, KA, **McDonnell E**, Coury DL, Payakachat N, Macklin E. Associations of quality of life with health-related characteristics among children with autism. *Autism*. 2018; 22(7):804-813.
- Paganoni S, **McDonnell E**, Schoenfeld D, Yu H, Deng J, Atassi H, et al. Functional decline is associated with hopelessness in amyotrophic lateral sclerosis (ALS). *Journal of Neurology and Neurophysiology*. 2017; 8(2).
- Mruzek DW, McAleavey S, Loring WA, Butter E, Smith T, **McDonnell E**, et al. A pilot investigation of an iOS-based app for toilet training children with autism spectrum disorder. *Autism*. 2019; 23(2):359-370.
- **McDonnell E**, Schoenfeld D, Paganoni S, Atassi N. Causal inference methods to study gastric tube use in amyotrophic lateral sclerosis. *Neurology*. 2017; 89(14), 1483-1489.
- Hong TS, Wo JY, Borger DR, Yeap BY, **McDonnell EI**, Willers H, et al. Phase II study of proton-based stereotactic body radiation therapy for liver metastases: importance of tumor genotype. *Journal of the National Cancer Institute*. 2017; 109(9).
- Marler S, Ferguson, BJ, Lee EB, Peters B, Williams KC, **McDonnell E**, et al. Association of rigid-compulsive behavior with functional constipation in autism spectrum disorder. *Journal of Autism and Developmental Disorders*. 2017; 47(6), 1673-1681.
- Neumeyer AM, Cano Sokoloff N, **McDonnell E**, Macklin EA, McDougale CJ. Bone microarchitecture in adolescent boys with autism spectrum disorder. *Bone*. 2017; 97:139-146.
- Neumeyer AM, Cano Sokoloff N, **McDonnell EI**, Macklin EA, McDougale CJ, Misra M. Bone accrual of males with autism spectrum disorder. *Journal of Pediatrics*. 2017; 181:195-201.
- Ferguson BJ, Marler S, Altstein LL, Lee EB, Akers J, Sohl K, McLaughlin A, Hartnett K, Kille B, Mazurek M, Macklin EA, **McDonnell E**, et al. Psychophysiological associations with gastrointestinal symptomatology in autism spectrum disorder. *Autism Research*. 2017; 10(2):276-288.
- Ferguson BJ, Marler S, Altstein LL, Lee EB, Mazurek MO, McLaughlin A, Macklin EA, **McDonnell E**, et al. Associations between cytokines, endocrine stress response, and gastrointestinal symptoms in autism spectrum disorder. *Brain, Behavior and Immunity*. 2016; 58:57-62.
- Redjal N, Reinshagen C, Le A, Walcott BP, **McDonnell E**, Dietrich J, et al. Valproic acid, compared to other antiepileptic drugs, is associated with improved overall and progression-free survival in glioblastoma but worse outcome in grade II/III gliomas treated with temozolomide. *Journal of Neuro-Oncology*. 2016; 127(3):505-14.
- Hong TS, Wo JY, Yeap BY, Ben-Josef E, **McDonnell EI**, Blaszkowsky LS, et al. Multi-institutional phase II study of high-dose hypofractionated proton beam therapy in patients with localized, unresectable hepatocellular carcinoma and intrahepatic cholangiocarcinoma. *Journal of Clinical Oncology*. 2016; 34(5):460-8.

- Marler S, Ferguson BJ, Lee EB, Peters B, Williams KC, **McDonnell E**, et al. Brief report: Whole blood serotonin levels and gastrointestinal symptoms in autism spectrum disorder. *Journal of Autism and Developmental Disorders*. 2016; 46(3):1124-30.
- Fournier CN, Murphy A, Loci L, Mitsumoto H, Lomen-Hoerth C, Kisanuki Y, Simmons Z, Margakis NA, McVey AL, Al-Lahham T, Heiman-Patterson TD, Andrews J, **McDonnell E**, et al. Primary lateral sclerosis and early upper motor neuron disease: Characteristics of a cross-sectional population. *Journal of Clinical Neuromuscular Disease*. 2016; 17(3):99-105.
- Ferrone CR, Marchegiani G, Hong TS, Ryan DP, Deshpande V, **McDonnell EI**, et al. Radiological and surgical implications of neoadjuvant treatment with FOLFIRINOX for locally advanced and borderline resectable pancreatic cancer. *Annals of Surgery*. 2015; 261(1):12-7.

SELECT CONFERENCE POSTERS AND PRESENTATIONS

- **McDonnell E**, Wrobel J, Goldsmith J, Zipunnikov V. Curve registration to identify circadian rhythm chronotypes in accelerometer data [Abstract]. Presented at the *Joint Statistical Meetings*, Denver, CO, 2019.
- Signorovitch J, Schilling T, Sajeev G, Yao Z, **McDonnell E**, Elfring G, et al. Deflazacort or Prednisone treatment for Duchenne muscular dystrophy: A meta-analysis of disease progression rates in recent multicenter clinical trials [Abstract]. Presented at the *American Academy of Neurology 71st Annual Meeting*, Philadelphia, PA 2019.
- Dyer MA, **McDonnell EI**, Yeap BY, Depauw N, Wolfgang JA, Wo JY, et al. Change in platelet count and normal liver dosimetry in patients receiving proton radiation therapy for unresectable hepatocellular carcinoma or intrahepatic cholangiocarcinoma [Abstract]. Presented at the *American Society for Radiation Oncology (ASTRO) Annual Meeting*, Boston, MA, 2016.
- Hong T, Wo J, **McDonnell E**, Yeap B, Drapek L, Wolfgang J, et al. A single arm phase 2 study of individualized proton-based stereotactic body radiation therapy (P-SBRT) of liver metastases [Abstract]. Presented at the *American Society for Radiation Oncology (ASTRO) Annual Meeting*; San Antonio, TX 2015.
- Wo J, Zhu A, **McDonnell E**, Yeap B, Borger D, Iafrate A, et al. Clinical and molecular predictors of local failure after SBRT for liver metastases: A secondary analysis of a prospective phase II trial [Abstract]. Presented at the *American Society for Radiation Oncology (ASTRO) Annual Meeting*; San Antonio, TX 2015.
- Hong T, Wo J, Yeap B, Ben-Josef E, **McDonnell E**, Drapek L, et al. Multi-institutional phase II study of high dose, hypofractionated proton beam therapy (HF-PBT) for unresectable primary liver cancers: Long term outcomes in patients (pts) with intrahepatic cholangiocarcinoma (ICC) [Abstract]. Presented at the *American Society of Clinical Oncology (ASCO) Annual Meeting*; Chicago, IL 2015.
- Kuhlthau K, **McDonnell E**, Payakachat N, Coury D, Delahaye J, Macklin E, editors. Correlates of cross-sectional and longitudinal health-related quality of life among children with autism spectrum disorders [Abstract]. Presented at the *International Meeting for Autism Research (IMFAR)*; 2015; Salt Lake City, UT.
- **McDonnell E**. Analyzing supportive care in ALS [Oral presentation]. Presented at *Statistical Issues in the Analysis of Neurological Studies: A Harvard Catalyst Biostatistics Symposium*; Boston, MA 2014.
- Murphy A, **McDonnell E**, Wolff J, Shapiro J, Simpson E, Glass J, et al. Improving symptom management for people with amyotrophic lateral sclerosis (ALS) [Abstract]. Presented at the *Northeast Amyotrophic Lateral Sclerosis Consortium (NEALS) Annual Meeting*; Clearwater Beach, FL 2013.
- Paganoni S, **McDonnell E**, Schoenfeld D, Yu H, Deng J, Atassi H, et al. Longitudinal study of mood in ALS [Abstract]. Presented at the *Northeast Amyotrophic Lateral Sclerosis Consortium Annual Meeting*; Clearwater Beach, FL 2013.

LEADERSHIP AND VOLUNTEER WORK

Doctoral Council Representative, Graduate Student Association of CUMC
Co-organizer, Graduate Student Research Seminar for Columbia Biostatistics

October 2019 – Present
 August 2018 – Present

PROFICIENCIES

Statistical software: R (Markdown, Shiny, Package Development), SAS, GitHub, LaTeX.
Electronic data capture (EDC) systems: StudyTRAX, REDCap, Inform.