**Background**

Madison is a principal biostatistician in the Center for Biostatistics at The Ohio State Wexner Medical Center. With more than 175 articles under his belt, more than 15 of which are first authored publications and more than 50 are second authored publications as the lead statistician, he is a seasoned writer as well as statistician. His first author work has been published each of the top journals of surgery in the United States; where one publication evaluating the association between social determinants of health with adverse postoperative outcomes was the topic of an article featured in the U.S. News and World Report (original article can be found [here](https://pubmed.ncbi.nlm.nih.gov/33508426/) *[external link]* and the USN and WR article can be found [here](https://www.usnews.com/news/health-news/articles/2021-01-26/socially-vulnerable-cancer-patients-at-higher-risk-of-poor-outcomes-after-surgery) *[external link].* Much of his work incorporates machine learning with a focus on optimization.

Prior to joining Ohio State, Madison worked in Charleston, South Carolina where he was a faculty research instructor at the Medical University of South Carolina (MUSC). While at MUSC, Madison earned co-investigator status on their CTSA as well as on several other grants. While in Charleston, Madison also taught statistics at the College of Charleston.

**Education**

M.S., Biostatistics, Medical College of Georgia, 2014

**Research Interests**

* Supervised and unsupervised machine learning
* Applications of the ‘win ratio’
* Visualization of data
* Health services research

**Selected Publications**

1. **Hyer JM**, Paredes AZ, Tsilimigras D, Pawlik TM. [Is Hospital Occupancy Rate Associated with Postoperative Outcomes Among Patients Undergoing Hepatopancreatic Surgery?](https://pubmed.ncbi.nlm.nih.gov/33074907/). *Ann Surg*. 2020 Oct 16;. doi: 10.1097/SLA.0000000000004418. [Epub ahead of print] PubMed PMID: 33074907.
2. **Hyer JM**, Tsilimigras DI, Diaz A, Mirdad RS, Azap RA, Cloyd J, Dillhoff M, Ejaz A, Tsung A, Pawlik TM. [High Social Vulnerability and “Textbook Outcomes” after Cancer Surgery](https://pubmed.ncbi.nlm.nih.gov/33508426/). *J Am Coll Surg*. 2021 Apr;232(4):351-359. doi: 10.1016/j.jamcollsurg.2020.11.024. Epub 2021 Jan 25. PMID: 33508426
3. **Hyer JM**, Ejaz A, Tsilimigras DI, Paredes AZ, Mehta R, Pawlik TM. [Novel Machine Learning Approach to Identify Preoperative Risk Factors Associated With Super-Utilization of Medicare Expenditure Following Surgery](https://pubmed.ncbi.nlm.nih.gov/31411664/). *JAMA Surg*. 2019 Nov 1;154(11):1014-1021. doi: 10.1001/jamasurg.2019.2979. PubMed PMID: 31411664; PubMed Central PMCID: PMC6694398.