

### Duke File (IDF) Number

---

IDF #:T-006683

### Meet the Inventors

---

[Glass, Carolyn](#)  
[Glass, Matthew](#)

### Department

---

Pathology (Dept. & CRU)

# A deep machine learning algorithm to aid the diagnosis of cardiac transplant rejection

---

## Value Proposition

Transplant rejection remains a significant clinical concern following solid organ transplants, including cardiac transplantation. Although endomyocardial biopsy to diagnose cardiac allograft rejection is the gold standard of histologic grading of biopsy samples for diagnosing allograft rejection, this standard has significant limitations in precision and accuracy that can affect patient care.

## Technology

This invention is a machine learning algorithm designed to detect cardiac transplant rejection from endomyocardial biopsy pathology slides.

## Other Applications

The algorithm may be of interest to pharmaceutical companies with clinical trials targeting immunology therapeutics.

## Advantages

- This invention could help to overcome limitations of cardiac transplant rejection diagnosis by pathologists by providing an objective and automated means of diagnosing transplant rejection and determining course of care
- As of now, there is little being done in the landscape of improving cardiac transplant rejection diagnosis, and especially no mention of a machine learning algorithm to do so
- This invention is aimed at improved diagnosis with better clinical outcomes, saving inpatient healthcare dollars for hospitals

