MEMO: DECEMBER 2022

Dear Mayor Udine

Each year the U.S. allocates nearly $80 billion dollars to incarcerate more than 2 million people in 1, 566 state prisons, 102 federal prisons, 1, 510 juvenile correctional facilities, 186 immigration detention centers, and 2, 850 local jails. [1] Broward county has 4,200 individuals currently behind bars that is costing taxpayers $135-$140 per day per incarcerated individual.[2] This roughly totals to $50,000 over the course of a year to keep one induvial behind bars. The cost of the criminal justice system reaches far beyond the economic and financial losses and bottom lines. Furthermore, higher rates of incarceration and long-term sentences are not reducing recidivism rates. In fact, in the state of Florida, 69% of people returned to prison for noncriminal "technical" violations, like missing a substance abuse meeting, or missing probation fees, while just 31% commit a new offense.[3] With recidivation accounting for as much as 10% [4] of annual prison cost, the need for an adoption of new methods of community and rehabilitation integration programming is crucial.

As of now, the county is currently using an algorithm-based software called COMPASS created by for profit company Northpointe that develops a risk assessment score and predicts the rate at which an individual will recidivate. However, the algorithm has proven to have disparate impact. A troubling report and analysis released by ProPublica revealed that the algorithm found that black defendants were far more likely than white defendants to be incorrectly judged to be at a higher risk of recidivism, while white defendants were more likely than black defendants to be incorrectly flagged as low risk.[5]

Biased and discriminatory algorithms like COMPASS paired with over policing of communities of color, have much broader social implications and burdens that are disproportionately felt by low-income families, women, and children. The collateral damage left by an unjust criminal system extend far beyond the walls of a prison cell. Probation and other mandatory rehabilitation programs can act as extended forms of imprisonment and confinement and fuels mass incarceration and recidivism rates, further burdening communities of color.

With your support Mayor Udine, Broward County can adopt our new algorithm that appropriately predicts risk of recidivism developed by my team at the Department of Prisons. Not only does our algorithm yield greater recidivism accuracy, but we have developed new design framework and method for job program enrollment that focuses on current in demand occupation training, outside employer relationships & apprenticeships, English language courses, and GED certification and educational programs that help folks attain fulfilling, well-paying jobs/careers.

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1 "Mass Incarceration: The Whole Pie 2022", Prison Policy Imitative, March 14, 2022
2 "Millions spent in South Florida to jail small-time offenders", Sun Sentinel, November 17, 2017
3 "Eight Keys to Mercy: How to shorten excessive prison sentences", Prison Policy Imitative, November 2018
4 "Annual prison costs a huge part of state and federal budgets", Interrogating Justice, February 2021
5 "How We Analyzed the COMPAS Recidivism Algorithm", ProPublica, May 23, 2016

Current prison workforce programming largely focusses on facility operation jobs like plumping, cooks and janitorial services, whose salaries would leave formerly incarcerated folks in poverty in the real world and increase their risk to reoffend. We recognize that the stigma of being formerly incarcerated, along with other social and legal barriers are compounded with a label of an "ex offender" which can ultimately increase rates of recidivism. However, with our new algorithm we can accurately estimate when an individual will recidivate and enroll them into our job training program.

Our algorithm design focus on minimizing the disparate impacts on African American in Broward County and have appropriately adjusted for race in our analysis. Figure 1 below displays recidivism rates at the 50% threshold. This threshold resulted in the false positives (Rate FP) incorrectly predicting African Americans to recidivate at a much higher percentages than other races.

Figure 1:Confusion matrix rates by race

50% threshold

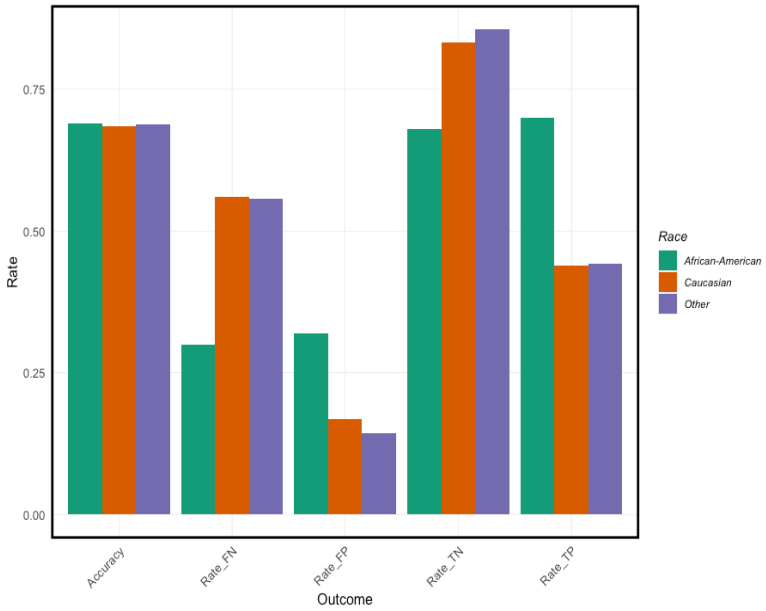
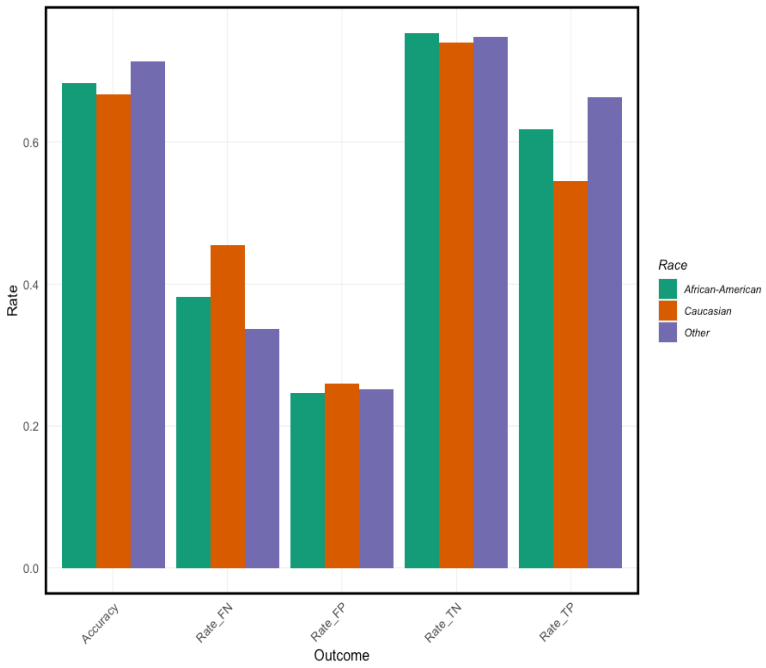


Figure 2: Confusion matrix rates by race

Thresholds: 55% African-American, 45% Caucasian, 43% Other



We have discovered the using a more equitable threshold approach and assigning appropriate thresholds for each race, produces more optimal rates of recidivism and better ensure resources are more accurately allocated. In figure 2 In figure 2 we assign the thresholds of 55%, 45%, and 43% to African-American, Caucasian, and Other respectively. The results of this model provided an almost equal outcome for those predicted to recidivate but did not (Rate_FP), and those who would not recidivate (Rate_TN). The margin between those who were predicated not to recidivate but did are much lower than the 50% margin in figure 1.

It was important that we used accuracy and generalizability as measurements of fairness and utility of our algorithm. Our first algorithm at a 50% threshold does yields high accuracy, race is not accounted for, and leaves out nuance than can help detect disparate impact. Our second output, in figure two does consider race with improved generalizability and accuracy and allows for our model to lean the recidivism experience of formerly incarcerated persons and test to see if generalizes to other populations where the likelihood to recidivate is unknown.

We believe that our improved algorithm will give you the confidence to support and invest in our job enrollment program. The large investment of $10 million in this program will produce even greater societal and broader financial benefits and allow Broward County to be a leader in a more interdisciplinary nuanced approach to reentry program design and improving post prison employment outcomes for all returning citizens.

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Thank you.

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