Department of Justice

Office of Justice Programs

PUBLICATION ADVISORY

Statistical Model Shows Promise in Forecasting Future Offending

WASHINGTON – The Office of Justice Programs' National Institute of Justice (NIJ) has released a final report demonstrating that a statistical forecasting model may help probation departments predict which offenders are most likely to reoffend. Researchers from the Jerry Lee Center of Criminology at the University of Pennsylvania collaborated with the Philadelphia Adult Probation and Parole Department in the demonstration project.

The researchers created and tested statistical models based on random forest modeling techniques. The researchers built the models using data from nearly 120,000 cases that began between 2002 and 2007, where the amount and nature of any reoffending was already known. The model was designed to predict which offenders would reoffend and the severity of their likely offenses. Its accuracy was measured using a subset of cases not used in the model's construction. The researchers compared the forecasted outcomes with actual reoffenses that occurred within two, five and eight years.

The statistical forecast models were 60 percent accurate.   Based on the agency's goals, the models were expressly designed to overestimate, rather than underestimate, risk. Probation departments interested in using the research to assess a probationer's risk level should partner with statisticians who are knowledgeable about random forest statistical techniques and researchers familiar with the necessary data systems.

> **TITLE:**   Classifying Adult Probations by Forecasting Future Offending
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> **AUTHORS**:   Geoffrey C. Barnes, Ph.D. and Jordan M. Hyatt, J.D., M.S.
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> **WHERE**:   https://www.ncjrs.gov/pdffiles1/nij/grants/238082.pdf

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About the NIJ
The National Institute of Justice — the research, development and evaluation agency of the U.S. Department of Justice — is dedicated to improving knowledge and understanding of crime and justice issues through science. NIJ provides objective and independent knowledge and tools to reduce crime and promote justice, particularly at the state and local levels.

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The Office of Justice Programs (OJP), headed by Acting Assistant Attorney General Mary Lou Leary provides federal leadership in developing the nation's capacity to prevent and control crime, administer justice, and assist victims. OJP has six bureaus and offices: the Bureau of Justice Assistance; the Bureau of Justice Statistics; the National Institute of Justice; the Office of Juvenile Justice and Delinquency Prevention; the Office for Victims of Crime; and the Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking (SMART). More information about OJP and its components can be found at www.ojp.gov.   ###