

Slide 1

The Predictive Validity of the Minnesota Sentencing Guideline's Criminal History Score

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Slide 2

Research Questions

- How well does the MN criminal history score predict recidivism (i.e., re-offending)?
 - Are there statistically significant and meaningful differences in the seven levels of the criminal history score?
 - Which formula components help to differentiate recidivists from non-recidivists (i.e., predictive validity)?
- How closely does the sentencing enhancement policy align with the relationship between the criminal history score and re-offending?

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Data

- MN sentencing data from 2003 (N=13,190)
 - Legal factors
 - Demographics
- Outcome: MN Sentencing data 2004-2015
 - Recidivism measure: reconviction for a felony within 3 years of release of prison of jail, or the start of probation.
- MN department of corrections data
 - Prison release date
 - Parole revocations

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Slide 4

Calculating the Criminal History Score in Minnesota

- Tested out individual components of the score.
 - Felonies
 - Misdemeanors
 - Juvenile adjudications
 - Custody status
 - Weighting


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Slide 5

Purpose of Criminal History Enhancements

- Minnesota: a. public safety and b. “just deserts”
- In dispositional decisions, conviction offense is the primary factor and criminal history a secondary factor.
- Do the criminal history enhancements fulfill the goal of public safety?



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We do not have a way of measuring moral culpability, but we can measure whether the score predicts re-offending.

Slide 6



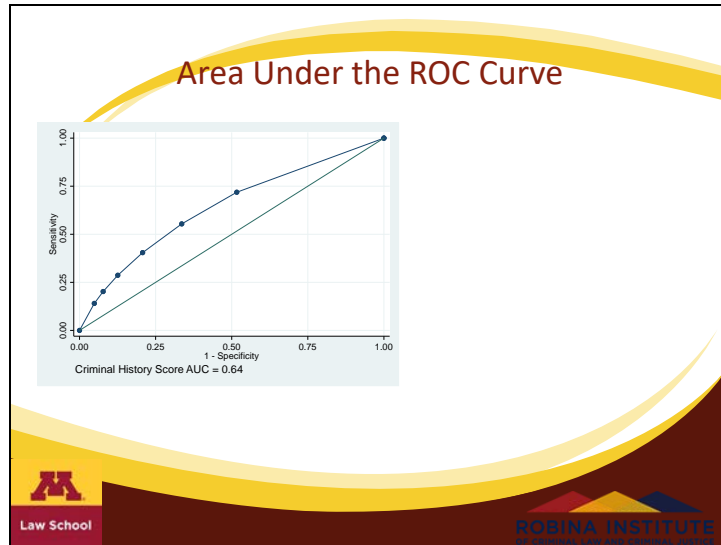


7-8 percentage point jump between scores 0 and 1 and 5 and 6

4-5 percentage point increase between all other scores.

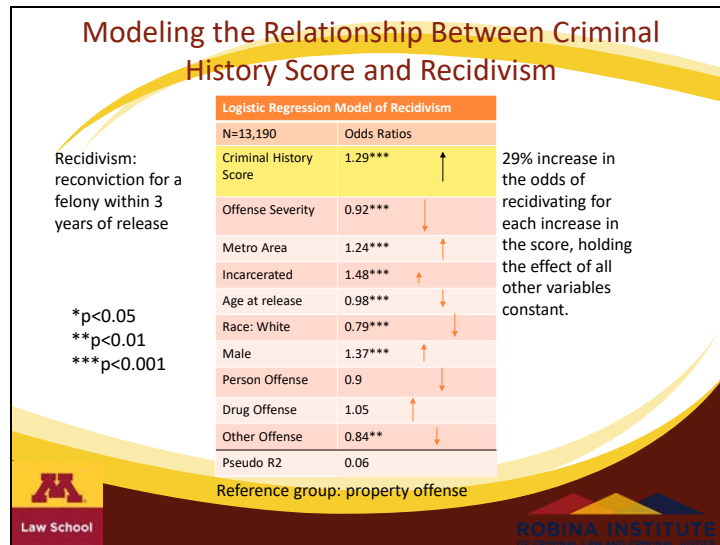
This means that the score does a worse job differentiating between recidivists and non-recidivists in the mid-range levels.

Please note that the difference in the mean rate of recidivism between criminal history scores 4 and 5 is not statistically significant ($p > .05$).



AUCROC curves measure discrimination: the ability of the score to correctly classify recidivists and non-recidivists. Anything above a .5 AUC means you are predicting better than chance.

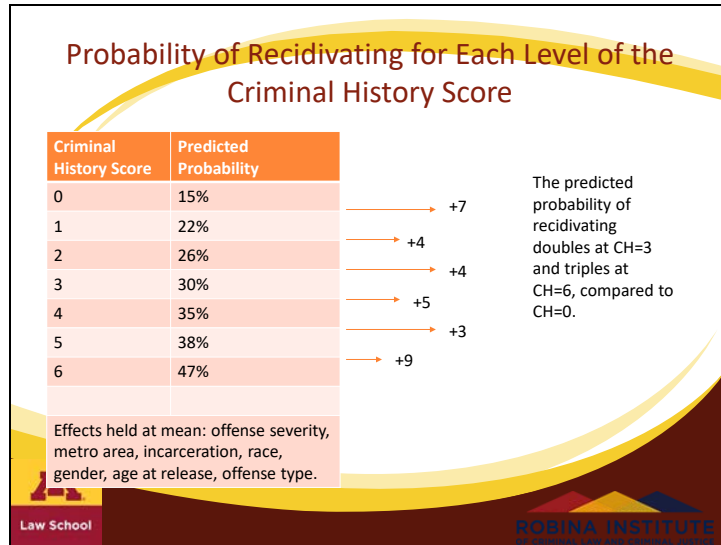
Note: The dots on the line represent cut-points in the criminal history score and the true positive (sensitivity)/true negative (specificity) rate associated with each. There are 8 cut-points at =>0, => 1, =>2, =>3, => 4, => 5, =>6, and >6. If we wanted to choose a single cut-point for whether an offender was likely to re-offend or not, we would try to have some equality between the proportion of both recidivists and non-recidivists identified correctly at every score. In this case, I would probably pick score 2. If we say that any offender with a score equal to or greater than 2 will recidivate, we would classify 55% percent of all those who re-offended correctly, and we would classify 66% of all those who don't recidivate correctly.



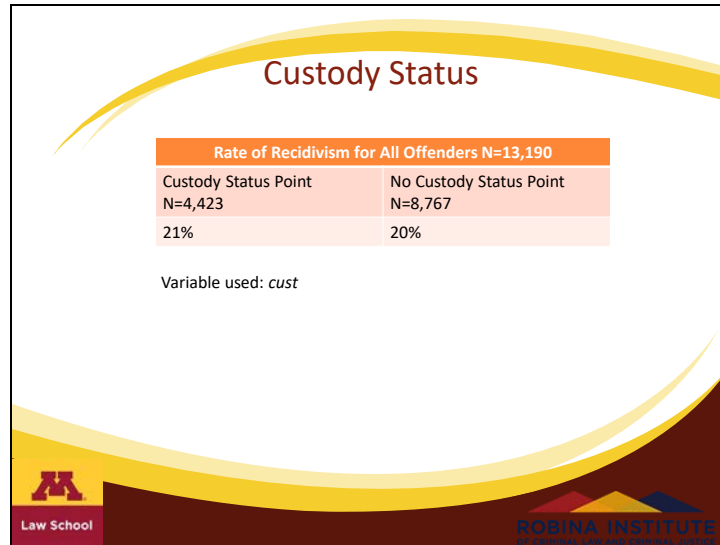
The goal of modeling reoffending, as opposed to just looking at the rate of recidivism within each score, is to isolate the magnitude of the effect of each legal or demographic factor.

Interpretation:

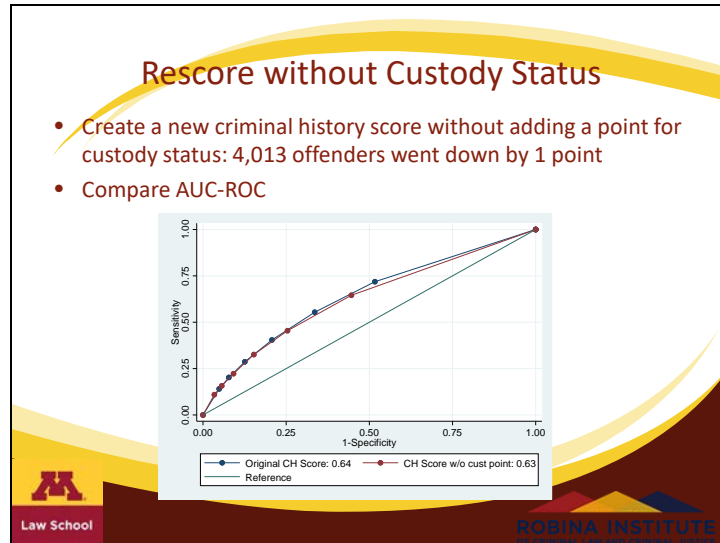
- Each level increase in the criminal history score is associated with a 29% increase in the odds of recidivating, holding the effect of all other variables constant.
- Each increase in the severity level is associated with an 8% decrease in the odds of recidivating, holding the effect of all other variables constant.
- Offenders in the Twin Cities metro area have 24% higher odds of recidivating, compared to offenders in the rest of the state.
- Offenders who were given a sentence of confinement (jail or prison), had 48% higher odds of recidivating compared to offenders who received probation without a jail term.
- Each year increase in the age of the offender, upon release from prison or jail or the start of probation, is associated with a 2% decrease in the odds of recidivating.
- Offenders who are racially white had 21% lower odds of recidivating compared to offenders who were not racially white.
- Person, drug, and other offenders should be compared to property offenders. However, only offenders who fall into the “other” offense category had a statistically significant (p>.05) difference in the odds of recidivating than property offenders. Offender who were convicted for an “other” type of offense had 16% lower odds of recidivating than property offenders.



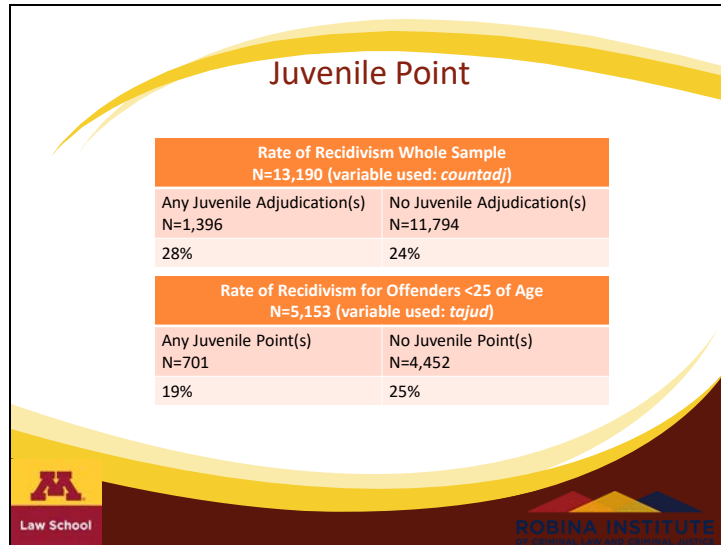
These predicted probabilities of recidivism are based on the logistic regression model on the previous slide. If we assume that 2003 produced a representative sample of Minnesota offenders, these are the probabilities of recidivism we can expect at each level of the criminal history score for all Minnesota offenders going through the system.



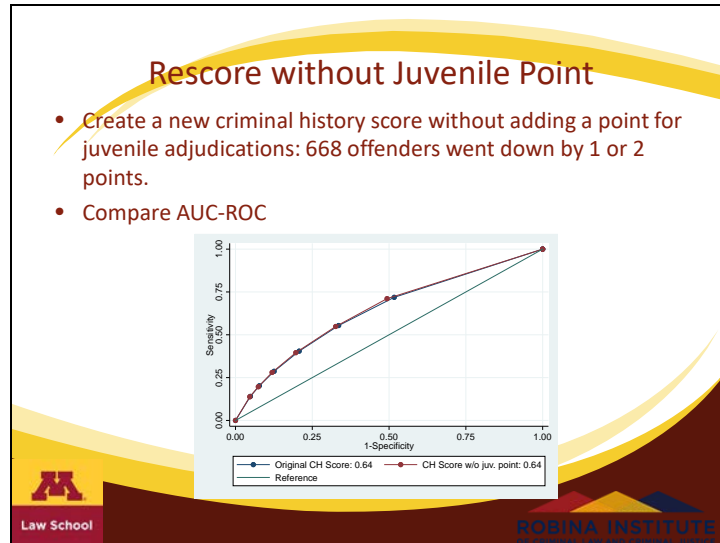
Offenders who receive a custody status point have a slightly higher (1 percentage point; 5% increase) likelihood of recidivating compared to offenders who do not have the point.



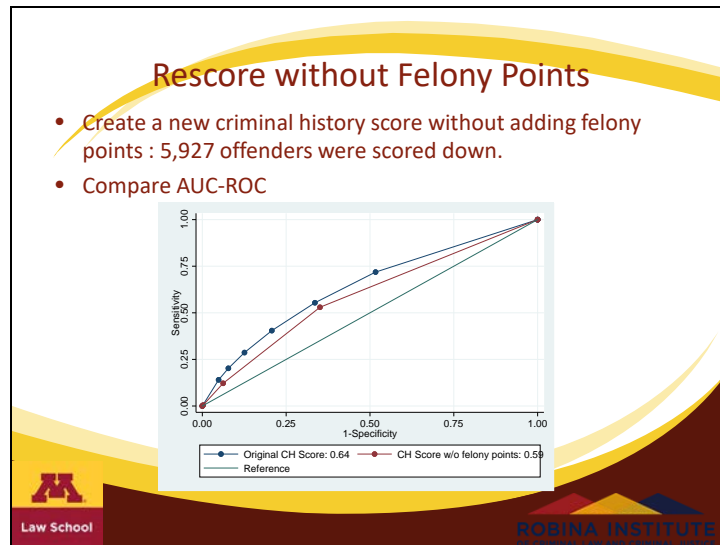
Removing the custody status point from the formula would reduce the presumptive sentence of 4,013 offenders and would result in a slight (1.5%), but statistically significant, decrease in the predictive validity of the criminal history score.



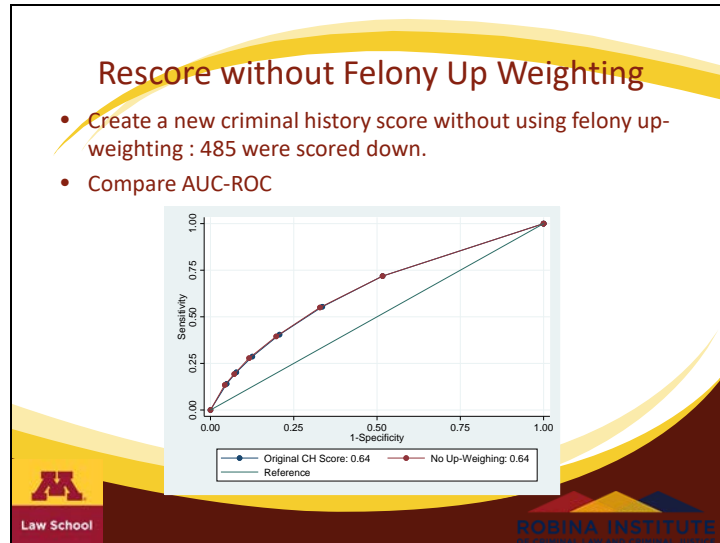
Offenders who have a juvenile adjudication were 17% more likely to recidivate than offenders who did not (4 percentage point difference). However, looking only at offenders who were under the age of 25 at the time of their offense (i.e., offenders who were eligible to receive a juvenile point), those who did receive a point were 32% less likely to recidivate than those who did not receive a juvenile point (6 percentage point difference).



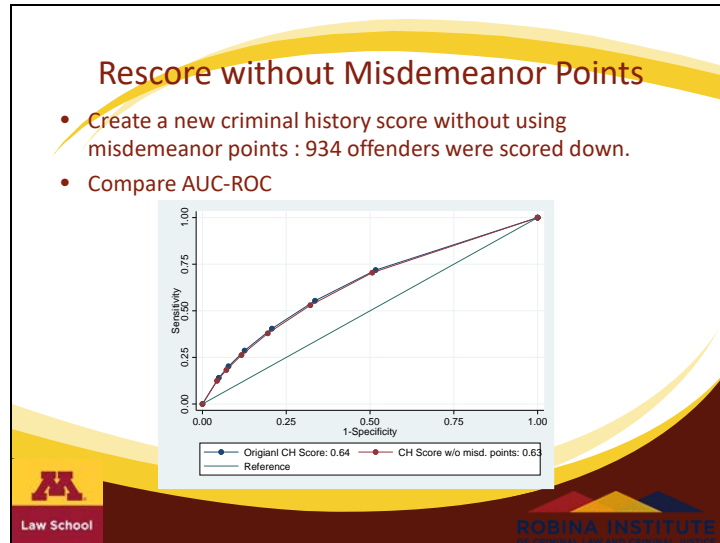
Taking the juvenile point out of the score would reduce the presumptive sentence of 668 of offenders and would make no statically significant difference in the predictive validity of the score.



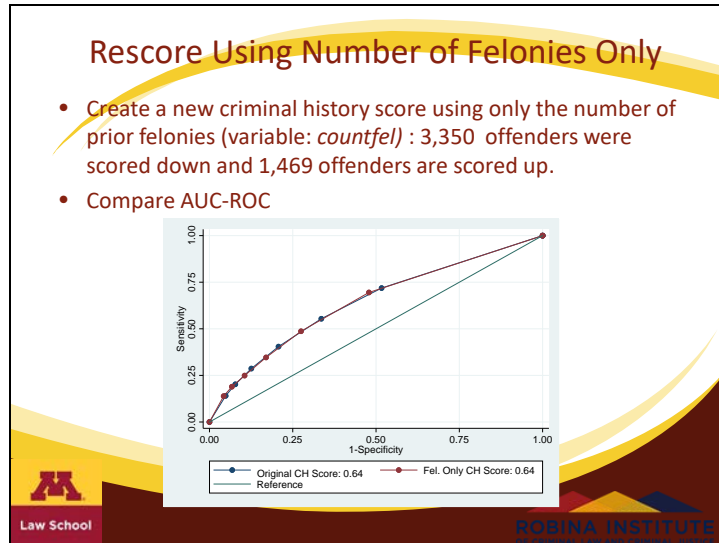
Taking out felony point from the formula would reduce the presumptive sentence of 5,927 offenders but it would significantly decreases the predictive validity of the criminal history score. Not advised.



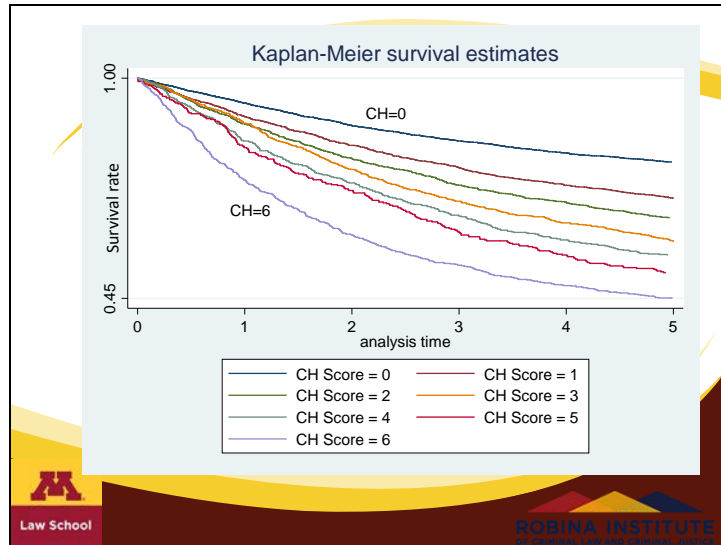
Getting rid of felony up-weighting (i.e., giving 1.5 or 2 points for some priors) would reduce the presumptive sentence of 485 offenders, and would make no statistically significant difference in the predictive validity of the score.



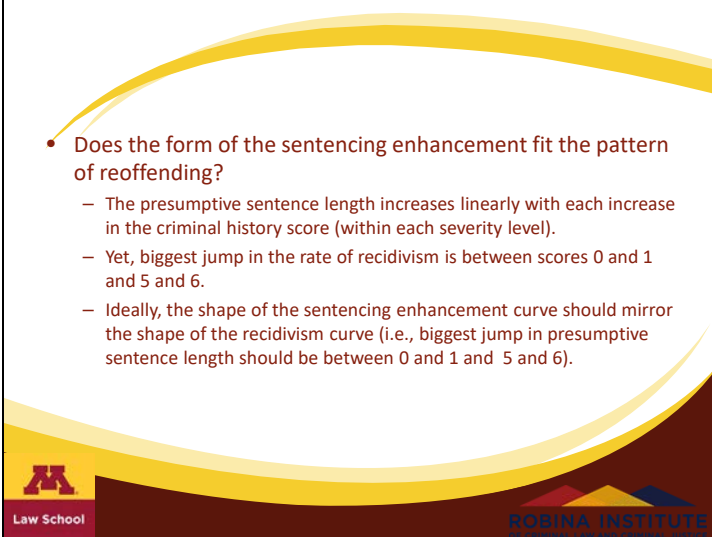
Getting rid of misdemeanor points would decrease the presumptive sentence for 934 offenders and would result in a slight (5%) but statistically significant difference in the predictive validity of the score.



As an alternative to the current score, if you were to simply assign one point for each prior felony (not counting misdemeanors, juvenile adjudications, custody status, or assign weights) you would decrease the presumptive sentence of 3,350 offenders, increase the presumptive sentence of 1,469 offenders and would maintain the predictive validity of the current criminal history score.



This graph tracks the time to recidivism for offenders over a five year period following the start of probation or release from jail or prison. As time increases, the survival rate (i.e., the number of offenders who remain felony free) decreases as well. However, the rate of survival decreases faster for offenders who have higher criminal history scores. The fastest decrease in the rate of survival occurs for offenders with a criminal history score of 6 and the slowest for offenders with a criminal history score of 1.



- Does the form of the sentencing enhancement fit the pattern of reoffending?
 - The presumptive sentence length increases linearly with each increase in the criminal history score (within each severity level).
 - Yet, biggest jump in the rate of recidivism is between scores 0 and 1 and 5 and 6.
 - Ideally, the shape of the sentencing enhancement curve should mirror the shape of the recidivism curve (i.e., biggest jump in presumptive sentence length should be between 0 and 1 and 5 and 6).

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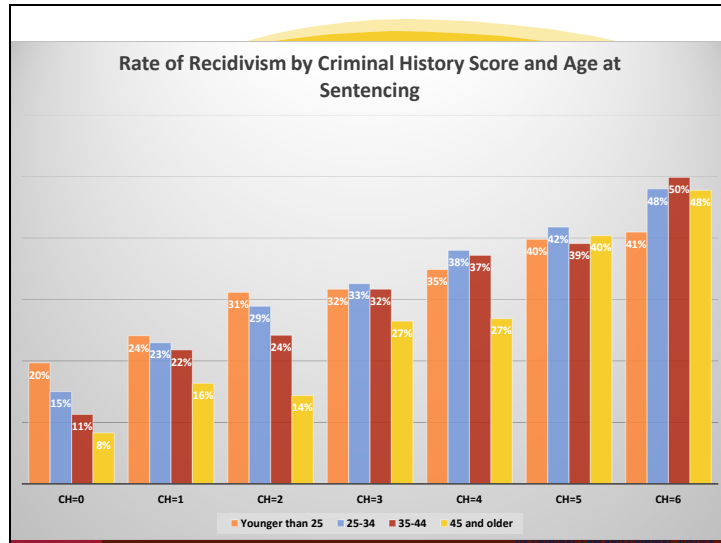
Disaggregating Criminal History Score = 0

- Some offenders who have a criminal history score of 0 have unscored prior offenses (e.g., two adult misdemeanors, one juvenile felony, and/or one half-point adult felony)
- Difference in recidivism rate within CH=0 offenders
- Support for first-time offender discount

Rate of Recidivism for Offenders with and without an Offense N=5,735 (CH=0)	
No Prior Offense (N=4,000)	Any Prior Offense (N=1,732)
12%	24%





Taking all the offenders who have a criminal history score of zero, those who have a prior offense were twice as likely to recidivate as those who do not.





Mostly monotonic relationship between criminal history score and recidivism per age category: as the score goes up the rate of recidivism goes up as well. However, age matters to differentiate recidivists and non-recidivists a lot more at CH scores=0/1/2 than at CH scores=4/5/6.

Conclusions

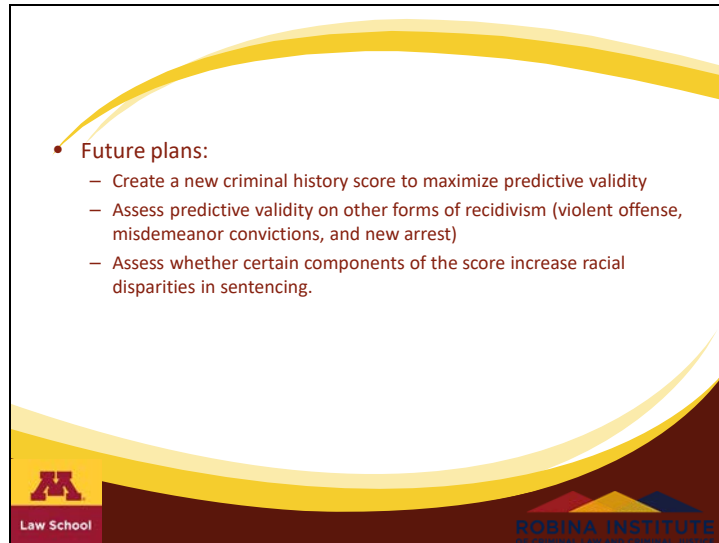
- The Minnesota Criminal History score predicts recidivism moderately well (AUC: 0.64)
 - But it has components that do not add to its predictive validity (e.g., up weighting, juvenile points).
 - And it's relationship to the presumptive sentence does not match the recidivism pattern between scores.



- Potential for better predictive validity with formula tweaks.
 - Reduce the number of criminal history levels (e.g. from 7 to 4) to make differences in recidivism meaningful between criminal history levels.
 - Reconsider felony weighting
 - Codify age into the formula
- Re-examine the sentencing enhancements in relation to the criminal history formula.
 - Reduce the large jumps in the presumptive sentence at the top of the grid to take into account the lower recidivism rate of serious offenders.
 - Give a first-time offender discount to "true zeros" in CH=0
 - Increase the jump in presumptive sentence length between CH score 0 and 1 and CH scores 5 and 6, but decrease the increase for all other levels.



Slide 25

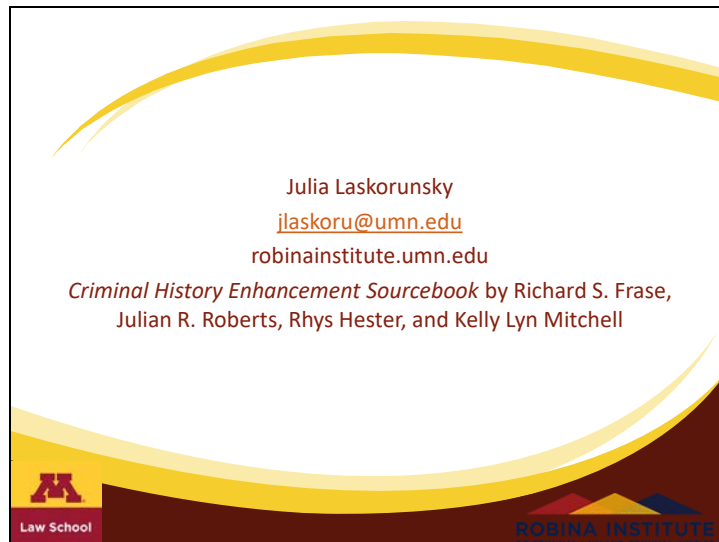
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- Future plans:
 - Create a new criminal history score to maximize predictive validity
 - Assess predictive validity on other forms of recidivism (violent offense, misdemeanor convictions, and new arrest)
 - Assess whether certain components of the score increase racial disparities in sentencing.

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Slide 26

A presentation slide with a white background and a decorative yellow and brown curved border at the top and bottom. The text is centered and includes contact information for Julia Laskorunsky and the title of a sourcebook. Logos for the Law School and Robina Institute are in the bottom corners.

Julia Laskorunsky
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Criminal History Enhancement Sourcebook by Richard S. Frase,
Julian R. Roberts, Rhys Hester, and Kelly Lyn Mitchell

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