

Data-Driven Strategies for Predicting On-Time High School Graduation

Arlington, Cabarrus County, Vancouver, Wake County



Kerstin Frailey



Robin Gong



Siobhan Greatorex-Voith



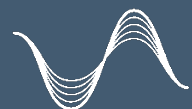
Reid Johnson



Anushka Anand



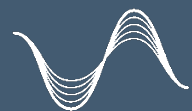
Alan Fritzler



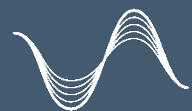
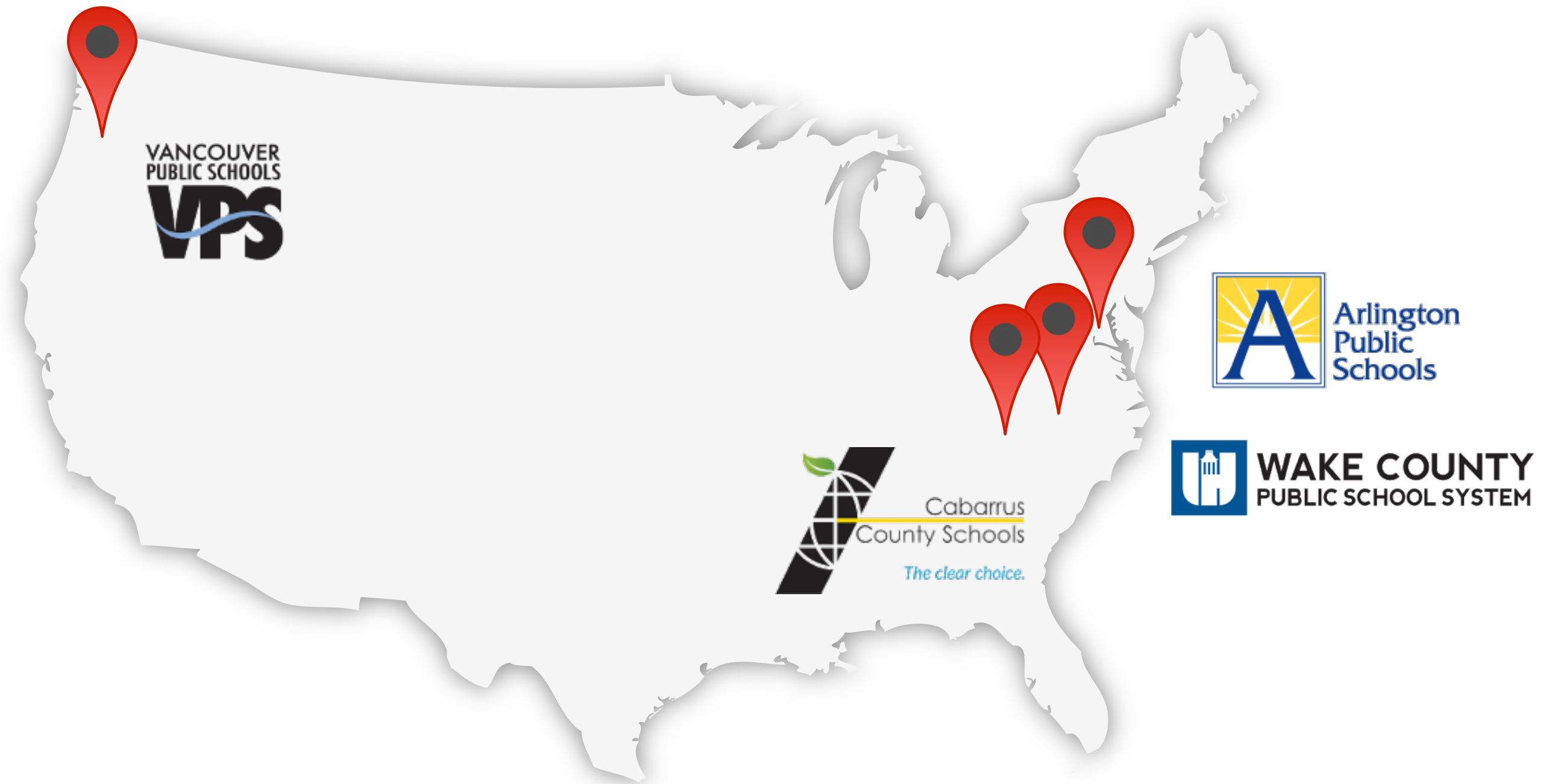
Over 700,000

Students in the U.S. Do Not Complete High School Each Year*

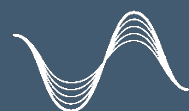
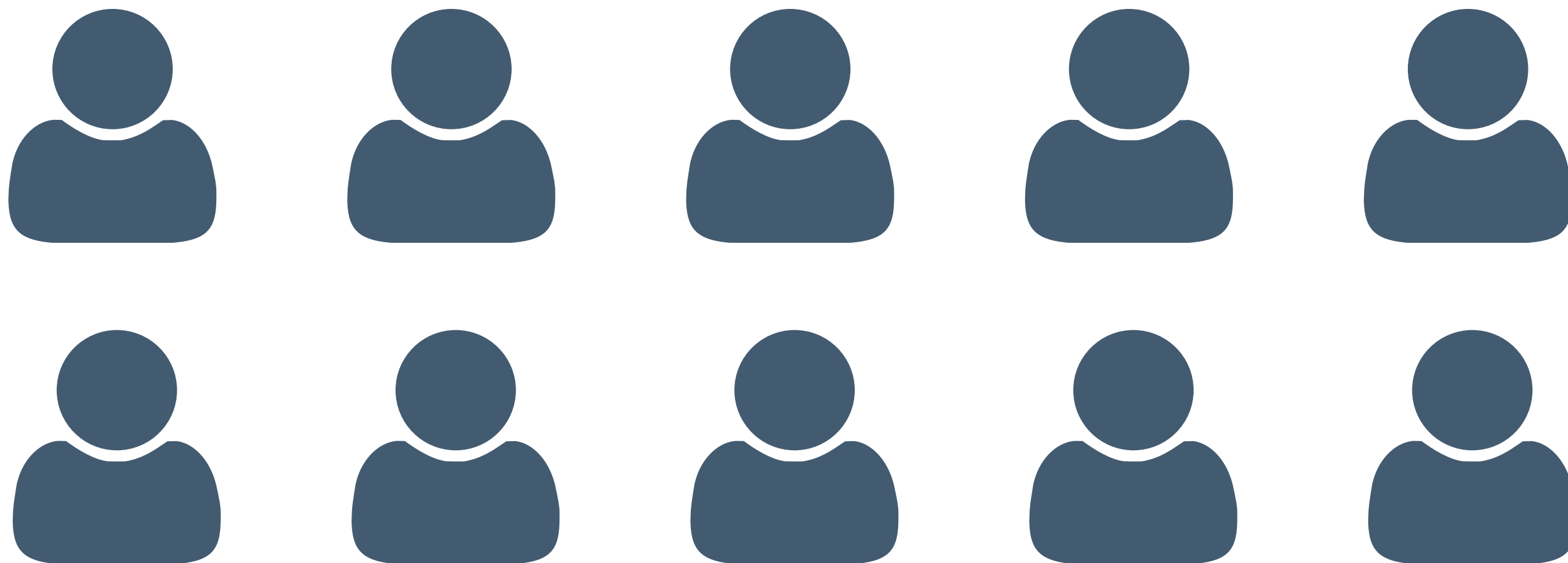
*G. Kena, L. Musu-Gillette, J. Robinson, et al. The Condition of Education 2015. (NCES 2015-144). U.S. Department of Education, National Center for Education Statistics, Washington, D.C., 2015.



Looking Beyond a Single School

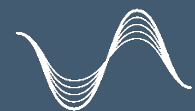
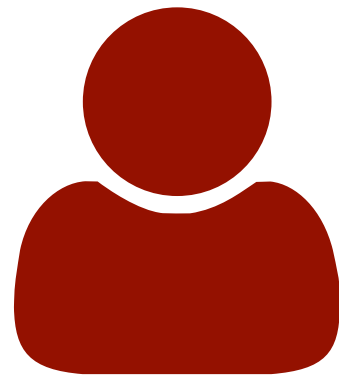


Students at Risk



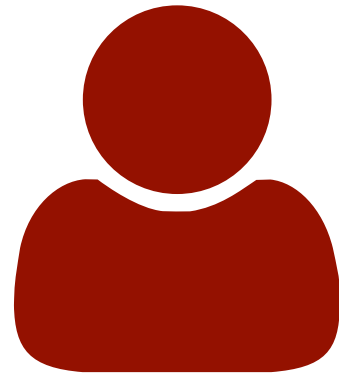
Students at Risk

Non-completer

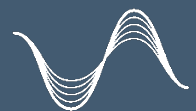


Students at Risk

Non-completer

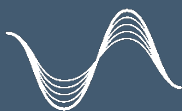


Graduated Late



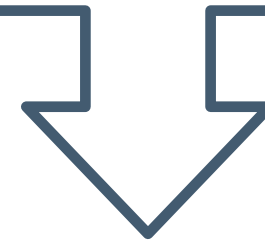
Grade-Level Data

Grade Level						
6	7	8	9	10	11	12
Absences	Absences	Absences	Absences	Absences	Absences	Absences
Grades	Grades	Grades	Grades	Grades	Grades	Grades
Tardies	Tardies	Tardies	Tardies	Tardies	Tardies	Tardies
Test Scores	Test Scores	Test Scores	Test Scores	Test Scores	Test Scores	Test Scores
...
Date of Birth, Gender, Race/Ethnicity, ...						



Grade-Level Features

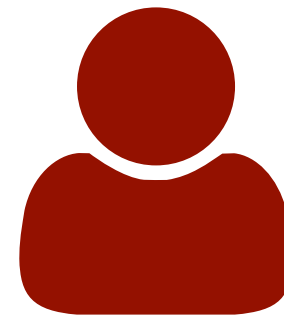
Grade Level						
6	7	8	9	10	11	12
Features	Features	Features	Features	Features	Features	Features



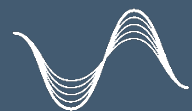
Predict



On Time



Not On Time



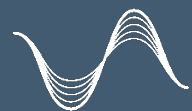
Model Evaluation

Risk Scoring

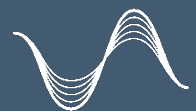
Name	Score	Actual
Jayne Cobb	.97	Yes
River Tam	.92	Yes
Olivia Dunham	.90	Yes
Maeby Funke	.87	No
Inara Serra	.82	Yes
Malcolm Reynolds	.79	No
Kaylee Frye	.79	No
Maggie Lizer	.62	Yes
Nina Sharp	.40	No
Peter Bishop	.21	No

Good: Off-track students have the highest predicted risk.

Bad: On-track student predicted higher risk than off-track student.



Modeling Results

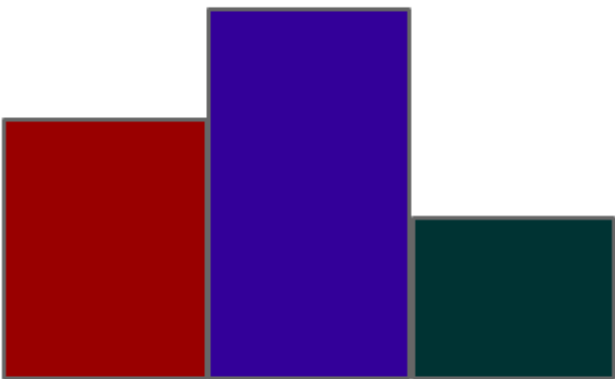


School-Level Insights

Lovely Place School District Friendly Neighborhood High School

November 14th, 2015

Students at risk for not graduating on time at Friendly Neighborhood High School have currently been identified as falling into three categories: enrollment risk, language risk, and discipline risk. Each student's individual risk factors have been identified and can be retrieved by clicking on their names. Students at highest risk are highlighted.



Risk at FNHS by Risk Group

Enrollment Risk

This group of students appear to be at high risk because they have enrollment difficulties. They are identified by a combination of enrollment duration, number of schools enrolled in, and frequency of change in enrollment.

River Tam
Jayne Cobb
Malcom Reynolds
Kaylee Frye
Inara Serra
Hoban Washburne

Language Risk

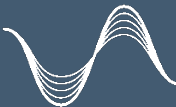
This group of students appear to be at high risk because they have language obstacles. They are identified by a combination of ESL duration, ESL enrollment date, and first enrollment in Amicable District.

Olivia Dunham
Peter Bishop
Nina Sharp
Astrid Farnsworth
Walter Bishop
Charlie Francis
River Tam
Inara Serra

Discipline Risk

This group of students appear to be at high risk due to their discipline events. They are identified by a combination of discipline frequency, discipline type, tardiness, and unexcused absences.

George Oscar Bluth
Maeby Funke
Maggie Lizer
Rebel Alley



Student-Level Insights

Lovely Place School District

Friendly Neighborhood High School

Malcolm Reynolds

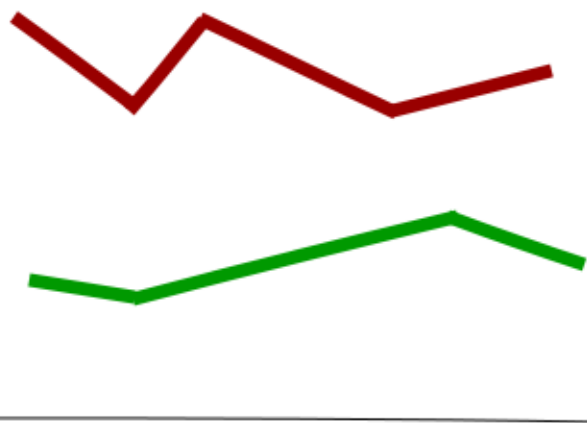
Malcolm Reynolds has been identified as at risk for not graduating on time. The risk factors that have contributed to the risk score include student information and performance schools. These factors have been discovered through assessing student graduation outcomes across Lovely Place School District.

November 14th, 2015

Risk Factors for Not Graduating on Time

	Current Risk	Previous Risk	Historical Risk
Absenses	.98	.98	.98
Discipline	.89	.92	.89
Tardies	.98	.98	.98
ESL	.10	.15	.32
Enrollment	.33	.56	.75

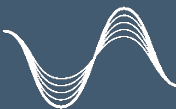
Student's Risk vs FNHS Risk Trend



Risk Score

.73

	Current	Previous	Historical
Risk Score	.73	.88	.82
Risk Percentile	91	94	89



District-Level Insights

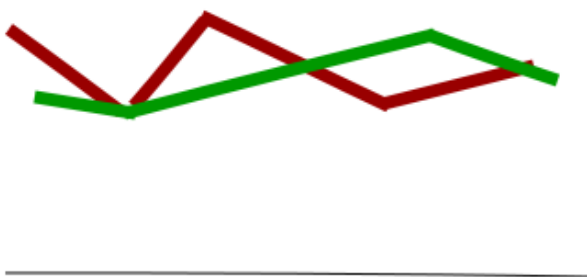
Lovely Place School District

Friendly Neighborhood High School

The risk factors that have contributed to the risk score include student information and performance within and across schools. These factors have been discovered through assessing student graduation outcomes across Lovely Place School District.

November 14th, 2015

FNHS vs Overall Graduation Percentage Trend



Ranking within Lovely Place School District

1	Super Good HS
5	Major Competitor HS
6	Friendly Neighborhood HS
7	Some Other HS

Greatest Risk Factors for Not Graduating on Time

Friendly Neighborhood HS	Some Other HS	Major Competitor HS	Lovely Place SD
Tardies	Absences	ESL	Discipline
Discipline	Tardies	Enrollment	Tardies
Absences	Enrollment	Discipline	Absences

Major Risk Groups for Not Graduating on Time

Friendly Neighborhood HS	Some Other HS	Major Competitor HS	Lovely Place SD
Language	Language	Enrollment	Discipline
Discipline	Discipline	Language	Enrollment

