## Michigan Great Start Readiness Program Evaluation 20 Years of Collaboration

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# Outline

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- 1. Introduction and Background of Great Start to Readiness Program (GSRP)
- 2. GSRP Longitudinal Evaluation Results (2012)
- 3. New GSRP Longitudinal Evaluation—newer findings (2012-present)
- 4. Wrap-up/Discussions, Q&A





### Michigan Great Start Readiness Program (GSRP)

- Established: 1985
- The Premise: High-quality preschool can mitigate risk factors and support the school readiness and subsequent achievement for children with demographic factors that predispose them to poorer school and life outcomes.









# **GSRP Risk Factors**

- 1. Low income;
  - 90% of enrollment below 250% Federal Poverty Level;
  - 10% may attend GSRP w/ sliding scale tuition based on income (from 2013)
- 2. Diagnosed disability/developmental delay;
- 3. Severe or challenging behavior;
- 4. Primary home language other than English;
- 5. Parent(s) with low educational attainment;
- 6. Abuse/neglect of child or parent;
- 7. Environmental risk

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# **GSRP** Quality

\* As of 2015, GSRP meets 8 out of the 10 NIEER (National Institute for Early Education Research) quality benchmark standards.

#### In addition:

- \* Program Quality Assessment
- \* Child Observational Assessment
- \* Data-informed Programming









# "Theory of Change" vs. Does it Work?

- Requirements for programming and enrollment
- Requirements for follow-up
- Evaluation began in 1995









# **GSRP Longitudinal Study Timeline**

1995-96 study children attended GSRP
1996-97 target and control group identified in kindergarten
2008-09 "on-time" high school graduation
2009-10 graduation with one-time grade retention
2010-11 graduation with two retentions
2012 high school graduation results released
2013-2015 GSRP expansion









# Longitudinal Evaluation 1995-2012

FY2013-2014 FY2014-2015 \$65Million budget \$65Million budget

TOTAL: \$130 Million expansion

GSRP enrollment increased by 14,891 children annually.







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## **GSRP** Reach

From 1985 to 2016:

- \* Total funding for GSRP grew from \$1,000,000 to \$233,600,000 (plus \$10,000,000 transportation fund); Grand total is \$243,600,000 plus the \$300,000 for statewide evaluation.
- \* The number of slots available to serve children grew from 694 to 61,082;
- \* State funding per child grew from \$2,500 to \$3,625 (per part-day equivalent slot);
- \* Currently, GSRP serves a total of 37,500 children annually.







# GSRP Longitudinal Evaluation 2012 Research Question:

#### What is the impact of Michigan's Great Start Readiness Program on children's school readiness?







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# A study of 595 low-income children entering kindergarten in 1996

- In six Michigan school districts Detroit, Grand Rapids, Grayling, Kalamazoo, Muskegon, and Port Huron.
- 338 children attended GSRP.
- 257 children did not attend a preschool program but had family incomes under \$30,300, low enough to qualify for GSRP.









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# Similar Group Backgrounds

Characteristic	GSRP	No GSRP
Age at kindergarten entry	5.3	5.3
% female	51%	51%
Fathers in home	62%	61%
Persons in household	4.5	4.7
Mothers' years of schooling	12.1	12.0
Fathers' years of schooling	12.1	11.7
Average annual income	\$17,882	\$18,022







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## **High School Graduation on Time**



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## Graduation Timing by Grade Retention



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# Grade Retention by Grade 12 by GSRP Status



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## Multiple Grade Retention by Race and GSRP Status



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### Kindergarten Teacher Ratings of Retained and Non-Retained Students



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## New GSRP Evaluation







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# Study Sites





MICHIGA

# Major findings thus far

- GSRP participants gained significantly in their early literacy and math ulletskills between program entry and exit in comparison to national norms (Pre-Post).
- GSRP has significant impact on increasing children's early literacy and ٠ math skills (the Group Equivalency Enhanced RDD).
- Significant achievement gap exists between higher-risk and lower-risk ۲ children at GSRP entry (Pre).
- GSRP helps reduce the achievement gap between higher-risk children • and lower-risk children (Pre-Post).
- GSRP children continue to learn during the summer, and their growth is ٠ in comparison or higher than national norm in executive function but lower in letter/words and math skills.
- Preliminary findings suggest greater impact for children whose home ۲ language is not English (Pre-Post). **HIGHSCOPE**





# MAJOR FINDING 1

GSRP participants gained significantly in their early literacy and math skills between program entry and exit in comparison to national norms (Pre-Post).







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### GSRP Participants' Gains from Program Entry to Exit by Measure



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### GSRP Participants' Gains from Program Entry to Exit by Measure



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# MAJOR FINDING 2

GSRP has significant impact on increasing children's early literacy and math skills (GEE-RDD\*).

\*Group Equivalency Enhanced Regression Discontinuity Design—a supplementary data collection and analysis method to enhance the equivalency between treatment and control that we added to a traditional RDD.







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# Regression Discontinuity Design (RDD)



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## Preschool RDD

Gormley, Gayor, Phillips & Dawson (2005) Tulsa, OK

Weiland & Yoshikawa (2013) Boston Public Schools

Bartik (2013), Kalamazoo, MI

Apply Survey Research (2013), San Francisco, CA

Peisner-Feinburg, Schaaf, La Forett, Hildebrandt, & Sideris (2014), Georgia

Peisner-Feinburg & Schaaf (2011), North Carolina

Coburn (2009); Lipsey, Farran, Bilbrey, Hofer & Dong (2011), Tennessee

Wong, Cook, Barnett & Jung (2008), 5 states—Michigan, New Jersey, Oklahoma South Carolina, West Virginia







#### Group Equivalency Enhanced RDD Sample

GEE-RDD Sample					
	Treatment N=333		Comparison		
			N=317		
Female	167	53%	162	52%	
Male	166	47%	148	48%	
Risk Factors					
Extremely low-income	228	72%	222	72%	
Primary language other than					
English	50	16%	43	14%	
Low parental education	66	21%	81	26%	
Ethnicity/Race					
White	120	38%	96	31%	
Black/African American	65	21%	86	28%	
Asian	7	2%	10	3%	
Hispanic	47	15%	65	21%	
Other	93	24%	60	17%	







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Type of Participants	Ν		Estimated Treatment Effect at Cutoff		
Included in the Estimation	Treatment (K-entry)	Comparison (Pre-K entry)	PPVT	Math	Letter- Word
Traditional RDD (All participants tested)					
Adjusted for SES & demographic status	303	363	2.89	1.57**	4.20**
Group Equivalency RDD (Controlled for differential attrition)					
Participants with & without sufficient					
treatment					
Adjusted for SES & demographic status	333	317	4.50+	1.73**	4.55**
Participants with sufficient treatment only					
Adjusted for SES & demographic status	316	310	<b>4.86</b> <sup>+</sup>	1.79**	4.47**

<sup>+</sup> p<**.**10; **\*\*\***p<**.**01







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## MAJOR FINDINGS 3 & 4

Significant achievement gap exists between higher-risk and lower-risk children at GSRP entry (Pre).

GSRP helps reduce the achievement gap between higher-risk children and lower-risk children (Pre-Post).







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			Mean Standard Score at Program Entry			
	Risk	_		Letter		Math
Category	Status	n	PPVT	Word	Spelling	Problem
Extremely low family income	Yes	271	98.58	96.42	93.46	101.71
	No	92	109.03	102.11	97.39	106.36
Diagnosed disability/ developmental delay	Yes	114	102.90	97.57	94.48	103.37
	No	249	100.46	98.06	94.47	102.65
Severe or challenging behavior	Yes	7	105.86	103.29	93.00	108.57
	No	356	101.14	97.79	94.50	102.76
Primary home language other than English	Yes	59	96.00	96.54	95.19	102.32
	No	304	102.24	98.17	94.34	102.98
Parent(s) with low educational attainment	Yes	77	98.51	93.77	92.24	99.81
	No	286	101.96	98.98	95.08	103.73
Abuse/neglect of child or parent	Yes	19	106.32	101.37	95.65	104.05
	No	344	100.95	97.71	94.40	102.81
Environmental risk	Yes	303	101.00	97.84	94.08	102.80
	No	60	102.40	98.20	96.36	103.28
Minority (non white)	Yes	229	98.02	96.47	93.91	100.59
	No	124	106.72	100.26	95.41	106.71

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#### Lansing--Math: Mean Program Entry and Gain Scores by Risk



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#### Thumb--PPVT: Mean Program Entry and Gain Scores by Risk



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# MAJOR FINDING 5

GSRP children continue to learn during the summer, and their growth is in comparison to or higher than national norm in executive function but lower in letter/words and math skills.







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## Summer Gain and Loss (raw scores)



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# Summer Gain and Loss (standardized scores)



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# MAJOR FINDING 6

Preliminary findings suggest greater impact for children whose home language is not English (Pre-Post).







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## Dual Language Learners (Kent)



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# Implications

Achievement gap between higher and lower risk children are apparent by age 4 (GSRP entry).

- Results suggest that GSRP helps reduce the achievement gap between children with higher risks and those with lower risks in a program year. Results also suggest that GSRP has greater impact on non-English speaking children.
- Children who were identified as having higher risks gained more in their relative standings/ percentiles in comparison to national standards than children who had lower risks. This finding was replicated for early literacy but not for math.

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## Implications

- A significant summer loss is observed in math and letterwords when compared against national norms. Given the magnitude of math gains achieved from program entry to exit in standard point (2.14 for Lansing and 2.10 for Thumb), summer loss canceled 51-63% of math that children gained during the GSRP year. For letter-word, summer loss canceled 20-22% of the gains.
- PPVT and executive function continued to show gain over the summer months.







# **Current Efforts**

- Following achievements of lower-risk versus higher-risk GSRP children in Lansing, Thumb area, and Kent. The goal is to examine how the gap reduced during the GSRP year lasts throughout children's school years.
- Conducting systematic observations in classrooms that are medium to high program quality with low and high child gains. The goal is to identify effective classroom/teaching practices which can predict high child gains. Results will also inform future Program Quality Assessment (PQA) revisions.
- Further exploring GSRP effects on Spanish-English Dual Language Learners.







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## **Questions?**

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