## Four Years' Research Results from the NCRGE

```
NATIONAL
CENTER
FOR
R E S E A R C H
O N
G IF TE D
ED UCATION
```

Del Siegle, D. Betsy McCoach \& E. Jean Gubbins

Carolyn Callahan


UNIVERSITY ${ }^{\circ}$ VIRGINIA
www.ncrge.uconn.edu

Funded by the Institute of Education Sciences, U.S. Department of Education PR/Award \# R305C140018

Our current team....
Dr. Del Siegle. Director
Dr. E. Jean Gubbins, Associate Director
Dr. Carolyn Callahan, Qualitative Research Coordinator
Dr. D. Betsy McCoach, Quantitative Research Coordinator
Dr. Daniel Long, Research Scientist
Dr. Vonna Hemmler, Post Doctoral Fellow
Dr. Allison Kenney, Post Doctoral Fellow
Shannon Holder, Graduate Research Assistant
Susan Dulong Langley, Graduate Research Assistant

ncrge.uconn.edu

NATIONAL CENTER FOR RESEARCH


GIFTED EDUCATION

Correlation $\neq$ Causation

$$
\begin{gathered}
\text { problem } \\
\text { is } \\
\text { universal }
\end{gathered}
$$

## Data Collected by NCRGE in Phase 1



Take home message...

## Educators are concerned about underidentification of some groups of students.

## $80 \%$ of states indicate

 underrepresentation is an important or very important issue

## State Context - Within Group

| Percent of Sub-populations Identified as Gifted |  |  |  |
| :--- | :---: | :---: | :---: |
|  | State 1 | State 2 | State 3 |
| State (and overall \% gifted) | $8.2 \%$ | $6.2 \%$ | $6.6 \%$ |
| \% of FRPL-eligible Identified | $6.5 \%$ | $5.6 \%$ | $4.2 \%$ |
| \% of African American Identified | $8.0 \%$ | $6.5 \%$ | $9.1 \%$ |
| \% of Hispanic Identified | $5.5 \%$ | $7.4 \%$ | $6.3 \%$ |
| \% of EL Identified | $24.6 \%$ | $12.8 \%$ | $13.8 \%$ |
| \% of White Identified | $36.7 \%$ | $16.7 \%$ | $24.9 \%$ |
| \% of Asian Identified |  |  |  |

## Representation Index

# RI: Actual proportion of the group being identified in the school divided by the expected proportion of that subpopulation, given the proportion of gifted students and the subpopulation in the school. 


$1.00 \frac{\text { Over }}{\text { Under }}$
0.50
0.00


Take home message...

# Underserved populations are not being identified at the same rates even after controlling for student achievement. 

Probability of identification as gifted for reference students and students who are EL, Free and Reduced Lunch, and Underserved after controlling for Reading and Math scores and school SES and school percentage of gifted students


Take home message...
Student identification by subgroups is not distributed equally across schools within districts.


## as much variance within districts as between districts

- Percentage of Gifted Students
- Percentage of Free and Reduced Price Lunch Students
- Average Reading
- Average Math

Gifted services are not equally distributed across schools within districts and poverty appears to be a key factor.

| State | Number of Schools | Number of Schools <br> with No Gifted <br> Students in our <br> Cohort | Number of Schools <br> with No Free and <br> Reduced Lunch <br> Gifted Students |
| :--- | :--- | :--- | :--- |
| State 1 | $\mathbf{1 , 1 7 7}$ | $\mathbf{3 9}$ | $\mathbf{8 6}$ |
| State 2 | $\mathbf{5 7 3}$ | $\mathbf{1 4 1}$ | $\mathbf{2 6 1}$ |
| State 3 | $\mathbf{1 , 4 9 5}$ | $\mathbf{3 4 3}$ | $\mathbf{2 0 1}$ |

What is the relationship between the \% of free and reduced lunch students in a school and the \% of students identified as gifted?


Take home message...

## Very few districts reassess students.

## Only slightly more than half of the districts reassess nonidentified students at regular intervals.

|  | State 1 | State 2 | State 3 |
| :--- | :--- | :--- | :--- |
| Non-identified students are reassessed at <br> regular intervals | $60 \%$ | $54 \%$ | $16 \%$ |
| Non-identified students are reassessed upon <br> request | $47 \%$ | $54 \%$ | $84 \%$ |
| Identified students are reassessed at regular <br> intervals | $10 \%$ | $31 \%$ | $2 \%$ |
| Identified students are reassessed upon <br> request | $10 \%$ | $11 \%$ | $4 \%$ |

## Over <br> $50 \%$

 of schools first identify in Grade 3Take home message...

# Extensive use of cognitive tests to identify students. 

## State <br> State State

## Tools for Identification

Parents can nominate
Teachers can nominate Use cognitive tests

Use non-verbal tests Use creativity tests
$77 \%$ 89\% 88\%
91\% 95\% 96\%
95\% 94\% 90\%
45\% 68\% 41\%
$4 \% \quad 44 \% \quad 10 \%$

## State State State

## Decision process for

identification
Committee of teachers and
64\%
74\% 31\% administrators decide Use a matrix to decide Use cut scores to decide

51\%
23\%
35\%
57\% 54\% 86\%

Take home message...

# Third grade <br> achievement is directly related to identification gaps. 

Amount $3^{\text {rd }}$ Grade Academic Achievement Accounts for Under Identification Gaps

## State 1 State 2 State3

FRPL (compared to nonFRPL)

EL (compared to non-EL)
47\%
100\%
100\%

Black (compared to
White)
66\%
100\%
56\%
Hispanic (compared to White)

43\%
100\%
27\%

Take home message...
Practices such as universal screening and nonverbal tests do not appear to be panaceas.

## Structure of Identification

Universal screening
Modify identification for underrepresented groups Program to identify underrepresented groups

81\% 94\% 22\%
26\% 23\% 65\%

39\% 32\% 16\%

# 19.3\% use Universal Screening. With 

 Universal Screening, they most often use> | -Group Cognitive - 77.7\% |
| :--- |
| -Non-verbal - 37.5\% |
| -Achievement - 22.3\% |
| -Teacher Rating Scale - 11.7\% |

## Take home message...

Identification gap for high achieving FRPL vs. non-FRPL almost disappears when universal screening is combined with modifications in State 3.
$46 \%$ modify the identification for underserved populations with...
-33.9\% Native Language

- 50.3\% Non-Verbal Test
-62\% More Flexible Score
- 23.9\% Different Weighting of Criteria
- 49.4\% Different Criteria or Cutoff

Take home message...

## Majority of schools use pull-out classes for gifted instruction.

$\approx 3 / 4$ pullout
$\approx 1 / 2$ cluster group
$\approx 1 / 2$ homogenous group $\approx 1 / 3$ push-in

## Acceleration Practices...

-29\% do not accelerate

- $35 \%$ subject accelerate
- $26 \%$ whole grade accelerate

Take home message...
Greater focus on critical thinking and creative thinking than Reading/Language Arts and Mathematics acceleration.

## Focus of Program Services

Using the slider, indicate the degree to which the gifted programming at your school focuses on the following goals and/or activities ( $0=$ Not a focus, $\mathbf{1 0 0}=$ Complete focus).





|  | Min | Max | Mean | SD |  |
| :--- | :---: | :---: | :---: | :---: | :---: |
| Critical Thinking Skills | -55.31 | 85.65 | 27.08 | 18.93 |  |
| Creativity/Creative Thinking | -63.73 | 88.27 | 19.44 | 20.42 |  |
| Reading/ELA: Grade Level Extension Activities | -66.19 | 92.31 | 15.13 | 23.28 |  |
| Math: Grade Level Extension Activities | -66.96 | 92.31 | 12.50 | 25.17 |  |
| Communication Skills | -55.31 | 75.19 | 11.93 | 20.17 |  |
| Technology Literacy | -78.27 | 75.62 | 10.97 | 21.94 |  |
| Metacognitive Skills | -79.00 | 76.35 | 9.14 | 20.15 |  |
| Research Skills | -68.27 | 75.00 | 7.96 | 21.16 |  |
| Academic Motivation | -59.77 | 71.23 | 7.13 | 20.31 |  |
| Academic Self-Confidence | -82.69 | 72.27 | 4.87 | 20.85 |  |
| Student Autonomy | -85.00 | 71.23 | 1.38 | 21.95 | Greater than |
| Enrichment in non-core content areas | -79.04 | 96.15 | 1.09 | 25.71 | average focus |
| Writing Skills | -77.31 | 95.92 | 0.80 | 23.32 |  |
| Self-directed projects | -80.73 | 75.96 | -0.30 | 22.91 |  |
| Leadership Skills | -74.50 | 76.92 | -0.32 | 21.26 |  |
| Social-Emotional Needs | -82.69 | 76.35 | -1.51 | 23.08 |  |
| Interdisciplinary study of big ideas | -86.73 | 80.54 | -4.01 | 23.52 |  |
| Math: Acceleration | -89.58 | 83.58 | -7.63 | 29.27 |  |
| Reading/ELA: Acceleration | -95.19 | 75.73 | -8.50 | 28.97 |  |
| Opportunities for Underserved Students | -84.81 | 79.65 | -8.60 | 24.11 |  |
| College and Career Readiness | -88.46 | 72.27 | -9.97 | 27.83 |  |
| Culturally Responsive Curriculum | -82.69 | 73.85 | -12.13 | 22.26 | Less than |
| Academic Contests | -90.92 | 83.92 | -13.35 | 26.08 | average focus |
| Cultivation of Cultural Identity | -90.00 | 69.12 | -19.51 | 21.71 |  |
| Service Learning | -88.46 | 61.50 | -20.50 | 22.67 |  |
| Opportunities Outside of School Day | -88.46 | 72.35 | -22.94 | 24.85 |  |

Take home message...

## Schools report teachers of the gifted have autonomy.

How much autonomy do your school's teachers of the gifted have in choosing the content to deliver?

Take home message...

# Gifted programs seldom <br> focus on core curriculum such as advanced math and reading. 

## Classification of Gifted Students

| Students Classified as Gifted in Reading/ELA |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | State 1 | State 2 | State 3 | Total |
| No | Frequency | 10 | 33 | 49 | 92 |
|  | Percentage | 9.7 | 22.8 | 100.0 | 31.0 |
| Yes | Frequency | 93 | 112 | 0 | 205 |
|  | Percentage | 90.3 | 77.2 | 0.0 | 69.0 |
| Total | Frequency | 103 | 145 | 49 | 297 |
|  | Percentage | 100 | 100 | 100 | 100 |


|  | Students Classified as Gifted in Math |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | State 1 | State 2 | State 3 | Total |  |  |  |  |
|  | Frequency | 15 | 36 | 49 | 100 |  |  |  |  |
| No |  | 14.56 | 24.83 | 100 | 33.67 |  |  |  |  |
|  | Percentage |  |  |  |  |  |  |  |  |
| Yes | Frequency | 88 | 109 | 0 | 197 |  |  |  |  |
|  | Percentage | 85.4 | 75.2 | 0.0 | 66.3 |  |  |  |  |
|  | Frequency | 103 | 145 | 49 | 297 |  |  |  |  |
|  | Percentage | 100 | 100 | 100 | 100 |  |  |  |  |

## Availability of District Curriculum

District-Wide Mathematics Curriculum Specifically for Gifted Students?

|  |  | State 1 | State 2 | State 3 | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Frequency | 94 | 133 | 50 | 277 |
|  | Percentage | 91.3 | 92.4 | 96.2 | 92.6 |
| Yes | Frequency | 9 | 11 | 2 | 22 |
|  | Percentage | 8.7 | 7.6 | 3.9 | 7.4 |
| Total | Frequency | 103 | 144 | 52 | 299 |
|  | Percentage | 100 | 100 | 100 | 100 |

District Wide Reading EEA Gurierlum Specifically for Cffted Students?

|  |  | State 1 | State 2 | State 3 | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Frequency | 90 | 127 | 50 | 267 |
|  | Percentage | 87.4 | 87.6 | 96.2 | 89 |
| Yes | Frequency | 13 | 18 | 2 | 33 |
|  | Percentage | 12.6 | 12.4 | 3.9 | 11 |
| Total | Frequency | 103 | 145 | 52 | 300 |
|  | Percentage | 100 | 100 | 100 | 100 |

This research from the National Center for Research on Gifted Education (NCRGE - http://ncrge.uconn.ed was funded by the Institute of Education Sciences, U.S. Department of Education PR/Award \# R305C140018

## This pattern extended to the schools

| Gifted education curriculum for Math that is separate from the regular curricula offered |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | State 1 | State 2 | State 3 | Total |  |
|  |  | 604 | 308 | 595 | 1,507 |  |
| No | Frequency | 69.1 | 78.8 | 82.2 | 75.8 |  |
|  | Percentage |  |  |  |  |  |
| Yes | Frequency | 270 | 83 | 129 | 482 |  |
|  | Percentage | 30.9 | 21.2 | 17.8 | 24.2 |  |
| Total | Frequency | 874 | 391 | 724 | 1,989 |  |
|  | Percentage | 100 | 100 | 100 | 100 |  |

Gifted education curriculum for Reading/ELA that is separate from the regular curricula offered

|  |  | State 1 | State 2 | State 3 | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Frequency | 564 | 271 | 580 | 1,415 |
|  | Percentage | 64.2 | 69.0 | 80.0 | 70.9 |
| Yes | Frequency | 315 | 122 | 145 | 582 |
| Total | Percentage | 35.8 | 31.0 | 20.0 | 29.1 |
|  | Frequency | 879 | 393 | 725 | 1,997 |
|  | Percentage | 100 | 100 | 100 | 100 |

## ELA Curriculum in Schools

|  | Description of ELA curriculum for gifted students |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | State 1 <br> $N=309$ | State 2 <br> $N=119$ | State 3 |
|  | Frequency | 115 | 40 | 60 |
| Faster Pace | Percentage | 37.2 | 33.6 | 41.1 |
| More In-Depth | Frequency | 236 | 90 | 102 |
| Percentage | 76.4 | 75.6 | 69.9 |  |
| Greater Breadth | Frequency | 175 | 53 | 79 |
| Above Grade Level | Percentage | 56.6 | 44.5 | 54.1 |
| Content | Pequency | 184 | 82 | 79 |
| Procentage | 59.6 | 68.9 | 54.1 |  |
| Press Skills | Frequency | 252 | 95 | 116 |
|  | Percentage | 81.6 | 79.8 | 79.5 |

This research from the National Center for Research on Gifted Education (NCRGE - http://ncrge.uconn.ed was funded by the Institute of Education Sciences, U.S. Department of Education PR/Award \# R305C140018

EiFTED

## Math Curriculum in Schools

| Description of Math curriculum for gifted students |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  |  | $\begin{aligned} & \text { State } 1 \\ & N=269 \end{aligned}$ | $\begin{gathered} \text { State } 2 \\ N=82 \end{gathered}$ | $\begin{aligned} & \text { State } 3 \\ & N=132 \end{aligned}$ |
| Faster Pace | Frequency | 122 | 42 | 69 |
|  | Percentage | 45.4 | 51.2 | 52.3 |
| More In-Depth | Frequency | 207 | 53 | 103 |
|  | Percentage | 77.0 | 64.6 | 78.0 |
| Greater Breadth | Frequency | 156 | 40 | 72 |
|  | Percentage | 58.0 | 48.8 | 54.6 |
| Above Grade Level Content | Frequency | 176 | 57 | 82 |
|  | Percentage | 65.4 | 69.5 | 62.1 |
| Process Skills | Frequency | 204 | 54 | 109 |
|  | Percentage | 75.8 | 65.9 | 82.6 |

## Time in Gen Ed Classrooms

| Hours a typical 5th grade gifted (identified as globally gifted or gifted in math) student spend in a regular education math classroom |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | State 1 | State 2 | State 3 | Total |
| 1 hour | Frequency | 74 | 35 | 141 | 250 |
|  | Percentage | 8.9 | 9.2 | 20.1 | 13.1 |
| 2 hours | Frequency | 36 | 17 | 28 | 81 |
|  | Percentage | 4.4 | 4.5 | 4.0 | 4.2 |
| 3 hours | Frequency | 60 | 23 | 32 | 115 |
|  | Percentage | 7.3 | 6.0 | 4.6 | 6.0 |
| 4 hours | Frequency | 51 | 23 | 41 | 115 |
|  | Percentage | 6.2 | 6.0 | 5.8 | 6.0 |
| 5 more hours | Frequency | 588 | 263 | 422 | 1,273 |
|  | Percentage | 71.0 | 69.0 | 60.0 | 66.6 |
| Don'tKnow | Frequency | 19 | 20 | 39 | 78 |
|  | Percentage | 2.3 | 5.3 | 5.6 | 4.1 |
| Total | Frequency | 828 | 381 | 703 | 1,912 |
|  | Percentage | 100 | 100 | 100 | 100 |

Hours a typical 5th grade gifted (identified as globally gifted or gifted in ELA) student spend in a regular education ELA classroom

|  |  | State 1 | State 2 | State 3 | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 0 hours | Frequency | 76 | 19 | 118 | 213 |
|  | Percentage | 8.89 | 4.99 | 16.57 | 10.93 |
| 1 hour | Frequency | 21 | 15 | 10 | 46 |
|  | Percentage | 2.46 | 3.94 | 1.4 | 2.36 |
| 2 hours | Frequency | 36 | 15 | 34 | 85 |
|  | Percentage | 4.21 | 3.94 | 4.78 | 4.36 |
| 3 hours | Frequency | 14 | 10 | 7 | 31 |
|  | Percentage | 1.64 | 2.62 | 0.98 | 1.59 |
| 4 hours | Frequency | 66 | 26 | 24 | 116 |
|  | Percentage | 7.72 | 6.82 | 3.37 | 5.95 |
| 5 more hours | Frequency | 622 | 277 | 482 | 1,381 |
|  | Percentage | 7275 | 727 | 677 | 70.89 |
| Don'tKnow | Frequency | 20 | 19 | 37 | 76 |
|  | Percentage | 2.34 | 4.99 | 5.2 | 3.9 |
| Total | Frequency | 855 | 381 | 712 | 1,948 |
|  | Percentage | 100 | 100 | 100 | 100 |

## Teacher Autonomy

| Teachers' Autonomy in Choosing the Content Taught to Gifted Students |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | State 1 | State 2 | State 3 | Total |
| None | Frequency | 2 | 2 | 2 | 6 |
|  | Percentage | 1.9 | 1.4 | 3.9 | 2.0 |
| Very Little | Frequency | 4 | 12 | 6 | 22 |
|  | Percentage | 3.9 | 8.3 | 11.5 | 7.3 |
| Some | Frequency | 25 | 51 | 17 | 93 |
|  | Percentage | 24.3 | 35.2 | 32.7 | 31.0 |
| A lot | Frequency | 56 | 63 | 20 | 139 |
|  | Percentage | 54.4 | 43.5 | 38.5 | 46.3 |
| Complete | Frequency | 16 | 17 | 7 | 40 |
|  | Percentage | 15.5 | 11.7 | 13.5 | 13.3 |
| Total | Frequency | 103 | 145 | 52 | 300 |
|  | Percentage | 100 | 100 | 100 | 100 |

This research from the National Center for Research on Gifted Education (NCRGE - http://ncrge.uconn.edt was funded by the Institute of Education Sciences, U.S. Department of Education PR/Award \# R305C140018

## Pull Out Programs

Do gifted students attend pull-out classes for gifted instruction?

|  |  | State 1 | State 2 | State 3 | Total |
| :---: | :---: | :---: | :---: | :---: | :---: |
| No | Frequency | 163 | 127 | 230 | 520 |
|  | Percentage | 18.8 | 32.7 | 31.9 | 26.3 |
|  | Frequency | 703 | 261 | 490 | 1,454 |
| Total | Percentage | 81.18 | 67.27 | 68.06 | 73.66 |
|  | Frequency | 866 | 388 | 720 | 1,974 |
|  | Percentage | 100 | 100 | 100 | 100 |

NEAG SCHOOL OF EDUCATION

## Subject Match

| Subject match between pull-out program and class from which students are |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| pulled? |  |  |  |  |  |  |

This research from the National Center for Research on Gifted Education (NCRGE - http://ncrge.uconn.edt was funded by the Institute of Education Sciences, U.S. Department of Education PR/Award \# R305C140018

Take home message...
Gifted students start ahead in reading and mathematics achievement but don't grow any faster than other groups.


Take home message...

## EL reclassification is linked to gifted identification.

## Students are in EL for

 less time in schools with more gifted students.

## EL students who exit EL earlier have a greater probability of being identified as gifted



Take home message...

# Talent scouts are effective in finding gifted English learners; don't wait for EL students to surface. 



## Teachers Value <br> Verbal Skills,

Social Skills,
Achievement, and
Work Ethic

24\% of Items on Rating Scales Reflect Bias


## Data Collection

- Quantitative Methods
- 3 years of school-reported state data
- 3 states with mandates for identification and programming for gifted students


## - Qualitative Methods

- 16 schools from 9 districts
- interviews and focus groups (225 informants)
- 84 transcripts
- 2,207 excerpts
- 6,278 total code applications
- 208 total axial codes
- four selective codes (i.e., core categories)



## Create Alternative

## Pathways to <br> Identification



Communication

## View Professional

## Development as a Lever for

Change


## Four Phases for Improving Identification of English Learners for Gifted and Talented Programs <br>  

National Center for Research on Gifted Education
(http://ncrge.uconn.edu)

Pre-Identification

- Targeted Subgroups
- Broadened Definition of Giftedness
- Informal Data Sources to Identify Giftedness
- Parent Awareness
 Resources
- Material Resources


[^0]
## Identification

- Universal Screening
- Broadened Definition With Alternative Identification Pathways
- Cultural Awareness/ Sensitivity Through Professional Development
- Frequent Screening
- Culturally Appropriate Assessments
- Web of Communication
- Talent Scouts

Acceptance of Placement

- Parent Awareness
- Accessibility of Location/Scheduling
- Trustworthiness of the Communicator
- Cultural Awareness/ Sensitivity to Being Labeled as Gifted
- Support Services to Ensure Student Success

\section*{Web of Communication Processes for Improving Identification of} English Learners for Gifted and Talented Programs | National center for Research on sitted |
| :---: |
| Education (htrp://ncre.e.uconn.edu) |



## Model for

## Improving

Identification
of EL Students
National Center for Research on Gifted
Education (http://ncrge.uconn.edu)

- Identification Preparation Opportunities
- Universal

Screening

- Alternative

Identification Pathways

- More

Frequent Screening

- Culturally Appropriate Assessments

Develop Practice of Being Talent Scouts


## Modifications

 in Program ServicesEvolution of a Web of
Communication
Among
Administration,
Faculty, Staff,
Specialists, \&
Parents/Guardians

- Inclusion of Culturally

Responsive
Curriculum

- Adding Support Services to Ensure
Student Success

$$
\begin{aligned}
& \text { NATIONAL } \\
& \text { CENTER } \\
& \text { FOR } \\
& \text { RESEARCH } \\
& \text { ON } \\
& \text { GIFTED } \\
& \text { EDUCATION }
\end{aligned}
$$



> Best practices involve a fair and equitable nomination process. This requires a paradigm shift where the focus changes from identifying and remediating weaknesses to identifying strengths and giftedness through multiple lenses (Esquierdo \& Arreguin-Anderson, 2012).

The National Center for Research on Gifted Education (NCRGE - http://ncrge.uconn.edu) is funded by the Institute of Education Sciences, U.S. Department of Education PR/Award \# R305C140018

## Be a Talent

## Scout,

not a Deficit Detector

## Exploratory Study on the Identification of English Learners in Gifted and Talented Programs:



## Take home message...

## ...stay tuned



Talent Development is a Two Step Process-

1. We must provide opportunities for talent to surface
2. Then we must provide programs that develop students' talents


$$
?
$$


[^0]:    NATIONAL
    CENTER
    FOR
    RESEARCH
    ON
    GIFTED
    EDUCATION
    http://marge.uconnedu

