

# NORTHERN KENTUCKY UNIVERSITY

Type or Print Name

Purchasing Department Lucas Administrative Center 617 Nunn Drive Highland Heights, KY 41099 (859) 572-5265 FAX (859) 572-6995

## **MEMORANDUM OF AGREEMENT**

Memorandum of Agreement No. MO NKU		
Request For Proposal No.		
Department Kentucky Center for Mathematics		
Account Number 235060010		

This Memorandum of Agreement for Enhancing Mathe	ematical Developme	nt of Gifted Stude	ents servi	ces is made and
entered into this 1st day of July , 201	4, by and between	n Northern Kentu	cky Universit	y (NKU) and;
NAME: Jefferson County Public Schools c/o Cordelia H	fardin, CFO SS	N or EIN 61-600	)1316	
ADDRESS: 3332 Newburg Road	CITY: Louisville	a provide the first of any approximation of the second second second second second second second second second	STATE: KY	ZIP: 40218
Services: NKU has determined that University personn University personnel is not feasible. Therefore	el are not available re, the Contractor w	to perform the de ill perform the se	escribed servio rvices describ	ces or use of bed below:
Magnifying Math in the Middle program for Newburg Mid Mathematical Development of Gifted/Talented Students	ddle School, awarde (EMDGTS). Scope	ed as part of the I e of work and buc	RFP entitled E lget attached.	inhancing
<b>PAYMENT:</b> As fee for the services described, NKU as (including expenses if authorized below) authorized unless specifically identified in	grees to pay the Con upon receipt of sign n this agreement. P	ntractor a sum no led invoice(s). N ayment will be m	t to exceed \$ o other fees o ade as describ	10,000 r expenses are bed below:
METHOD OF PAYMENT AUTH	ORIZED FEES A	ND EXPENSES		
Hourly: \$ /hour Image Airfare   Per Diem: \$ /day O Airfare   Fee: \$ /service O Other Trans   Other: \$ See attached budget Image Image	45/mile O sportation O	Lodging Meals Phone	<ul><li>Postage</li><li>Printing</li><li>Miscella</li></ul>	neous
Payment To Be Made: O Upon Completion	• Other Quar	terly Invoices	an a	
Other Expenses, if any, that will be incurred by NKU	J on behalf of the c	ontractor - Desc	ribe:	
Contract Dates: Beginning - July 1	, 2014 ;	Ending - June 30	) .	, 20 15
Cancellation: By either party upon 30 days written not	ice.			
Northern Kentucky University: Prepared by:	Approved:			
Signature/Date	Director of P	urchasing or Authorized	Representative	
Contractor:				
Signature/Date Donna M. Horgens, Ed. D	Notice: Th up Ro Co	tis contract subj on disapproval eview Committe ommission.	ect to immed by the Gove the of the Leg	liate cancellation rnment Contract islative Research

## Kentucky Center for Mathematics Grant Application Jefferson County Public Schools

## Part I. Cover Page

Name: Nicole Adell, Principal (Project Director and PI) School: Newburg Middle School, Math Science and Technology (Newburg) Department or District: JCPS Achievement Area 4 Office Phone: 502-485-8306 Email address: <u>Nicole.adell@iefferson.kyschools.us</u>

Title of Project: Magnifying Math in the Middle

## Amount Requested: \$10,000

**Short Project Description:** To provide challenge and to increase interest and motivation, we plan to offer an additional class period of more advanced math instruction to mathematically promising students. We use the term "promising" rather than "gifted" as we will be using the district's traditional identification for Advanced Program placement but also identifying students from traditionally underrepresented populations who exhibit promise in mathematics. The math class will be part of a three-course sequence focusing on advanced instruction in math, science, and technology. The focus will be on providing a teacher at grade 6, 7, and 8 with professional development on developing a scope and sequence for an enrichment course for mathematically promising students and on challenging and meeting the needs of those students.

## **Additional Collaborators Information:**

Name: Dr. Jill L. Adelson (PI) School: University of Louisville Department or District: College of Education and Human Development Office Phone: 502-852-4877 Email address: jill.adelson@louisville.edu

**Electronic Signature:** 

## Part II. Project Description, Budget, Supporting Documentation

## 1. Outcomes and Criteria

Because we will offer the 12-week course to three different cohorts of students during the school year, we will be able to use a comparison group model to assess the impact of the course. When not participating in the math enrichment course, students will participate in a science or technology enrichment course, thus providing a comparison that is not simply "business as usual." We will also compare with the 2013-2014 students for a comparison of "business as usual." We established the following measurable outcomes for the project: NA

- 1) Comparisons on TIMSS and NAEP-released items administered to each cohort 4 times throughout the school year (see Assessment Timeline in Section 4)
- 2) Comparisons on attitudes towards mathematics, administered to each cohort 4 times throughout the year (see Assessment Timeline in Section 4)
- 3) Comparisons of the 2014 KPREP scores and the 2015 KPREP scores for Newburg M.S. Advanced Program students at each grade level
- 4) Comparisons of 2014 KPREP level and 2015 KPREP level for participating students, particularly focusing on whether students who were Proficient moved to Advanced
- 5) Teacher attitudes towards problem-based learning and teaching mathematically talented students via open-ended questions

Additionally, this project represents the beginning of a collaboration between Newburg Middle School (Newburg), Jefferson County Public Schools (JCPS), and Dr. Adelson at the University of Louisville. Using this as a pilot, our intent is to scale up the project to extend to other classes and schools, and seek other grant funding through the Kentucky Department of Education, Institute of Education Sciences (IES), and/or National Science Foundation (NSF).

## 2. Detailed Project Description

Newburg is one of three middle school Math, Science, and Technology programs in JCPS. By offering an additional math class at each grade level, grades 6-8, and working with a math education consultant, Dr. Linda Sheffield, to provide professional development (PD), we can offer more advanced math instruction to our mathematically promising students. We use the term "promising" rather than "gifted" to be consistent with the National Council of Teachers of Mathematics (NCTM) Task Force on the Mathematically Promising, which defined promising students as "those who have the potential to become leaders and problem solvers of the future" (Sheffield, 1999, p. 310).

The 2013-14 KPREP results indicate Newburg is a Focus School labeled as "Needs Improvement." Newburg MST has just over 1,000 students in grades 6-8. Almost 70% of students qualify for free/reduced lunch, about 66% identify as non-White (with 51% identifying as African American, and 87 students identify as "homeless." This project supports the commitment that all mathematically promising students, including those from groups typically underrepresented in the math fields, are successful.

Classroom experience and research demonstrate that children who are talented in mathematics will learn material much more quickly and with fewer repetitions than the regular curriculum allows (Sowell, 1993). Additionally, when students are grouped by ability for specific instruction in mathematics, achievement is significantly increased (Rogers, 1992). Our goal for this project is to offer a high quality math experience for our mathematically promising students.

Currently the first of six class periods each day at Newburg is devoted exclusively to literacy enrichment and interventions. To provide opportunities for the mathematically promising students through an additional math class, this project would support one teacher at each grade level receiving PD to teach an additional math class (rather than the additional literacy class) to enrich students' math understanding and problem-solving skills. Three different cohorts of 29-31 students at each grade level could complete the 12-week course. All students identified by the district for Advanced Program (AP) would participate in the 12-week course. Newburg anticipates about 50 6<sup>th</sup> graders, 50 7<sup>th</sup> graders, and 80 8<sup>th</sup> graders being identified in this manner. To fill the remaining seats in the classes, Principal Adell, counselors, and teachers, in consultation with Dr. Adelson, will select mathematically promising students from traditionally underrepresented populations. In particular, she will look for students who may have high scores or grades in mathematics (domain-specific talent) but not high overall CoGAT scores (the primary measure used for AP placement).

The focus of our funding will be on providing high-quality, on-going PD focused on teaching math to promising students. The PD will include training prior to the school year that will focus on (a) curriculum development for an enrichment course and (b) strategies for engaging and challenging promising students, as well as follow-up training using technology such as Skype or GoToMeeting, during each 12-week course. The teachers (one from each grade level) will work with Dr. Sheffield to develop the scope and sequence of the courses, thus supporting teacher buy-in and knowledge of the course content and direction.

The courses will focus primarily on math competition-type problems, which will extend students' math knowledge beyond what they learn in their primary math class and improve their math problem-solving and communications kills. Research has shown that American Olympiad competitions result in a high percentage of advanced degrees and a great deal of publications, with 76% of Olympians and 70% of their parents claiming they would not have accomplished as much without the programs (Campbell & Walberg, 2011). The materials we will utilize will focus on Math Counts materials (<u>http://mathcounts.org</u>), which includes a new book of problems, a video challenge, and a Solve-a-thon, but also will be supplemented by Math Olympiads for Middle Schools materials (<u>http://www.moems.org</u>), which includes materials that go beyond competitions to support teachers and students doing advanced math in a fun way, and other resources such as Math Pentathlon (<u>http://www.mathpentath.org</u>), the American Math Competition (<u>http://www.maa.org/mathcompetitions</u>), Scale City (<u>www.scalecity.org</u>), and Math at the Core (<u>http://ket.pbslearningmedia.org/collection/mathcore</u>). Many of these materials are free, and the school and district has funds to support any materials that do need to be ordered.

Because these materials have a great deal of online resources, teachers will be able to utilize the abundant technology available at Newburg, including SmartBoards, SmartSlates, and iPads. Additionally, each class will have access to TI-84 calculators throughout the course.

## 3. Value of the Project

In the U.S., the most pervasive instances of underrepresentation have been associated with economic disadvantage and racial and ethnic minority status (Borland, 1995). The academic achievement gap persists despite ongoing efforts to reduce the differences in performance between racial and ethnic minorities and their White and Asian American peers. This gap affects students at the lowest ends of the achievement spectrum as well as the highest end. The achievement gap is found to affect the post high school performance of even the most competent minority students whose high grades and standardized test scores appear to over-predict similar high performance in college (Bridglall, 2005).

The National Commission on Excellence in Education (NCEE, 1984) estimated that 10% to 20% of high school dropouts are gifted, and approximately 50% of gifted students' achievement levels do not match their abilities. Based on studies of delinquent gifted students, Seeley (1993) estimated that 18% to 40% of identified gifted middle school students are at-risk for school failure (i.e., dropping out of school) or academic underachievement (as measured by grades).

Because many mathematically promising students have already mastered the basic skills, the typical classes (even if accelerated so that they complete Algebra I by the end of middle school, as Newburg does) may not provide sufficient challenge or provide the depth, complexity, or interest for these students. Simply working in the highest math class at their grade level may not meet promising learners' needs, regardless of how well the teacher has differentiated the lessons.

Currently, Newburg does not offer any type of math enrichment for students during the regular day. Another big factor in determining a student's motivation to increase academic achievement is their capacity to complete rigorous coursework and their engagement in interesting problems, which can only be acquired through effective classroom experiences. With grant funding, we would have the opportunity to prepare the teachers to provide these classroom experiences through an additional math class for promising students at all three grade levels.

This project presents an opportunity for us to address college and career readiness for our students. We know that students who progress through at least Algebra II in high school are twice as likely as those who do not to complete a four-year degree (NMSI, 2007). The design of this program is to engage students in challenging math to increase not only achievement but also motivation in math. This past year, Newburg MST created an opportunity for 7th and 8th grade students to take Algebra I while they are still in middle school using our JCPSeSchool virtual school. In 2013-14, the school piloted using JCPSeSchool as a way for seventh and eighth grade students to complete a high school Algebra course while still in middle school. This project would help increase the number of students prepared for, interested in, and motivated to complete Algebra I before entering high school.

Task	Date	Person Responsible
Finalize plans and details for	By June 30, 2014	Dr. Linda Sheffield
summer PD with math education		Dr. Jill Adelson
consultant		Nicole Adell
		Teachers
		Tim Truitt
PD conducted for three math	July, 2014 – 3 days @ 6 hours	Dr. Linda Sheffield
teachers, grades 6-8	each day	Nicole Adell
		Dr. Jill Adelson
		Teachers
	1	Tim Truitt
Identify three cohorts of 29-31	By August 15, 2014	Nicole Adell, Counselors, and
students at each grade level, 6-8, to		Teachers (in consultation with
take class		Dr. Jill Adelson)
Additional math class for first	August 19 – November 7,	Teachers
cohort of promising students	2014	<u> </u>

## 4. Project Timeline

Follow-up PD	Beginning of October, 2014	Dr. Linda Sheffield Nicole Adell Dr. Jill Adelson Teachers Tim Truitt
Additional math class for second cohort of promising students	November 10, 2014 – January 31, 2015	Teachers
Follow-up PD	Mid-December, 2014	Dr. Linda Sheffield Nicole Adell Dr. Jill Adelson Teachers Tim Truitt
Additional math class for third cohort of promising students	February 2 – May 9, 2015	Teachers
Follow-up PD	Mid-April, 2015	Dr. Linda Sheffield Nicole Adell Dr. Jill Adelson Tim Truitt
Ongoing support for teachers	August 19, 2014 – May 9, 2015	Tim Truitt Dr. Jill Adelson
Submit Final Report to KCM		Nicole Adell & Dr. Jill Adelson (with assistance from Dr. Marco Munoz)

## **Assessment Timeline:**

Task	First cohort	Second cohort	Third cohort
Pretest	Taken in math	Taken in science	Taken in technology
(first week of school)	enrichment class	enrichment class	enrichment class
First posttest	Taken in math	Taken in science	Taken in technology
(last week of Term 1)	enrichment class	enrichment class	enrichment class
	(treatment group)	(comparison group)	(comparison group)
Second posttest	Taken in technology	Taken in math	Taken in science
(last week of Term 2)	enrichment class (12-	enrichment class	enrichment class
	week follow-up group)	(second treatment	(comparison group)
		group)	
Third posttest	Taken in science	Taken in technology	Taken in math
(last week of Term 3)	enrichment class (24-	enrichment class	enrichment class
	week follow-up group)	(second 12-week	(third treatment
		follow-up group)	group)

## 5. Background of Applicants/Relevant to the project

Ms. Nicole Adell has been principal at Newburg since July 1, 2013. Prior to this, she was an Assistant Principal at Oldham County North High School. She also worked in school districts in North Carolina

a decision of

and Virginia. She will serve as co-Principal Investigator with Dr. Jill Adelson, UofL College of Education and Human Development.

Dr. Jill Adelson has been faculty at the University of Louisville since 2009. She received her doctorate from the University of Connecticut in Gifted Education (specializing in mathematics education) as well as in Measurement, Evaluation, and Assessment. She has more than 20 peer-reviewed articles, has written curriculum for mathematically talented students, and has more than 50 presentations at national conferences. She was appointed by the Governor to serve on the Kentucky State Advisory Board for Gifted and Talented Education and has leadership roles in the National Association for Gifted Children and the American Educational Research Association. She will serve as co-Principal Investigator with Ms. Nicole Adell.

Dr. Linda Sheffield (http://www.lindajsheffield.com), Regents Professor Emerita of Mathematics Education and Gifted Education at Northern Kentucky University, has been a mathematics education consultant since 1973. She has more than 30 published book chapters, articles, and research papers in mathematics education and has published mathematics curriculum for mathematically promising students. She has more than 30 presentations at national conferences and has directed several grant projects. She will provide ongoing PD to the teachers.

Tim Truitt, JCPS Mathematics Specialist for Grades 6 through 12, will consult with Ms. Adell and Dr. Adelson on project plans and provide ongoing support for teachers. He is in his 6<sup>th</sup> year with JCPS, is a certified mathematics teacher (grades 8-12), and holds a consultant endorsement through the Education Professional Standards Board.

Dr. Marco Munoz is an Evaluation Specialist in the JCPS Data Management, Planning and Program Evaluation Department. He has worked with data and research in JCPS for more than 15 years and has led several large scale research and evaluation projects. He also serves as an instructor at the postsecondary level teaching methods, statistics, program evaluation, action research, and multicultural education courses. He will assist with the evaluation and research of this project and the development of the final report to be submitted to KCM.

Laurie Moore is currently a 6<sup>th</sup> grade math teacher at Newburg, where she has been teaching since 2004. She is certified to teach math, grades 5-12. She has taught math to JCPS middle school students for almost 20 years.

Rhonda Rowland has been a 7<sup>th</sup> grade math teacher at Newburg since 2008. She is certified to teach math, grades 5-12. Prior to that, she worked in several districts in Kentucky and two years in Mississippi. She has taught all levels of middle school math and several years of Algebra I. She has also served one year as a MATHCOUNTS coach for Newburg.

Jean Clayton, 8<sup>th</sup> grade math teacher certified grades 5-12, has taught at Newburg since 1991. She has also coached MATHCOUNTS for the past 20 years, and she was instrumental in the development of the math curriculum to take Newburg to a MST program.

KCM Proposal Newburg Middle March 2014

#### 6. Detailed Budget and Justification

#### **Consultant for Professional Development**

Linda Sheffield (math educator/consultant) - \$2,000 per day @ 3 days in summer	\$6,000
Follow up during academic year - 3 days @ \$449 per day	\$1,347
PD Stipends for summer	
3 teachers - 6th, 7th and 8th @ 3 days @ \$120 per day	
Substitutes for Participating Teachers Follow Up Days	\$1,080
3 teachers @ 3 days @ \$125 per day	\$1,125
Fringes on Teacher Stipends	
(Medicare Match, KTRS, Unemployment Ins. & Workers Compensation)	\$53
Fringes on Substitutes	
(Medicare Match, KTRS, Unemployment Ins. & Workers Compensation)	\$55
Indirect Costs @ 3.52%	\$340

#### **Total Grant Request**

## Part III. Appendix

#### 1. Supporting Documentation

- a. References
- b. Math Counts Overview
- c. Letter of Support Dr. Linda Sheffield
- d. Letter of Support UofL Dr. Jason Osbourne

#### 2. Vita or Resume

- a. Nicole Adell
- b. Dr. Jill Adelson (abbreviated)

\$10,000

#### a. References

Borland, J. (1995). Issues and Practices in the Identification and Education of Gifted Students from Under-represented Groups. National Research Center on Gifted and Talented. Retrieved March 6, 2014, from <u>http://www.gifted.uconn.edu/nrcgt/reports/rm04186/rm04186.pdf</u>

Bridglall, B. (2005). Nurturing Talent in Underrepresented Students: A Study of the Meyerhoff Scholars Program at the University of Maryland, Baltimore County. National Research Center on the Gifted and Talented. Retrieved March 6, 2014, from http://www.gifted.uconn.edu/nrcgt/reports/rm05212/rm05212.pdf

Campbell, J. R. & Walberg, H. J. (2010). Olympiad studies: Competitions provide alternatives to developing talents that serve national interests. *Roeper Review*, 33(1), 8-17.

Increasing the Achievement and Presence of Under-Represented Minorities in STEM Fields. National Math Science Initiative (2007). Retrieved March 7, 2014 from <u>http://www.nms.org/Education</u>.

Rogers, K. B. (1992). A best-evidence synthesis of the research on acceleration options for gifted learners. In N. Colangelo, S. G. Assouline & D. L. Ambroson (Eds.), *Talent development: Proceedings* from the 1991 Henry B. and Jocelyn Wallace National Research Symposium on Talent Development (pp. 406-409). Unionville, NY: Trillium.

Seeley, Cathy. (1993). "Increasing Access or Ensuring Failure? Policymakers throw a hammer into the wall." Proceedings of the Algebra for the Twenty-first Century Conference. Reston, VA: National Council of Teachers of Mathematics.

Sheffield, L. J. (Ed.). (1999). *Developing mathematically promising students*. Reston, VA: National Council of Teachers of Mathematics.

The Stem Crisis. The National Math & Science Initiative. Retrieved March 7, 2014, from <u>https://nms.org/Education/TheSTEMCrisis.aspx</u>.

## b. MATHCOUNTS Overview

#### Who We Are:

The MATHCOUNTS Foundation is a 501(c)(3) non-profit organization that strives to engage middle school students of all ability and interest levels in fun, challenging math programs, in order to expand their academic and professional opportunities. Middle school students exist at a critical juncture in which their love for mathematics must be nurtured, or their fear of mathematics must be overcome. MATHCOUNTS provides students with the kinds of experiences that foster growth and transcend fear to lay a foundation for future success.

For more than 30 years MATHCOUNTS has provided enriching, extracurricular opportunities to students and free, high-quality resources to educators. Every child is unique, but we believe *all* children are capable of seeing the beauty and joy of math, whether they come to us already passionate about math, or intimidated by it.

There are many paths to math. We work to ensure that all students discover theirs.

#### What We Do

Through three distinct programs, we empower middle school students of all ability levels and backgrounds to reach their full potential in mathematics.

We cultivate talent in the nation's brightest young minds through the <u>MATHCOUNTS Competition</u> Series. We bring together students from all 50 states in a series of in-person contests - the only competition program of its kind.	We engage students in project-based learning that is innovative and creative through the <u>Math</u> <u>Video Challenge</u> . By having student teams create their own math teaching videos, we enable students to connect and apply math to their own lives, and teach others in the process.
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#### Accolades

• At the 2013 Raytheon MATHCOUNTS National Competition, 325 MATHCOUNTS students, coaches and volunteers set a Guinness World Record for the fastest time to create a human formation of the first 25 rows of Pascal's Triangle. The task was completed in just 6 minutes, 16.57 seconds.



- MATHCOUNTS has been recognized in White House ceremonies by President Barack Obama, as well as former Presidents George W. Bush, William J. Clinton, George H.W. Bush and Ronald W. Reagan.
- The MATHCOUNTS Foundation has received two White House citations as an outstanding private sector initiative.
- MATHCOUNTS has been recognized on the National Association of Secondary School Principals National Advisory List of Student Contests and Activities for 2013-2014.
- MATHCOUNTS has received the Independent Charities of America Seal of Excellence.
- Charity Navigator has recognized MATHCOUNTS as a four-star charity two years in a row, placing it in the top 16% of all U.S. charities.

## Why Participate - Why MATHCOUNTS Works

We understand there is no single type of student, school or community, so we have created a diversity of programs, each of which allows for flexibility within schools and local communities. MATHCOUNTS helps ensure that all students have access to interesting math and have the opportunity to develop their critical thinking and problem-solving skills.

With the support of a robust network of over 17,000 educators, alumni, engineers and other professionals, we are able to reach students in all 50 states, in addition to U.S. territories and schools worldwide through the State Department and Department of Defense. Each year, over a quarter million students are exposed to MATHCOUNTS materials or participate in our programs.

MATHCOUNTS is effective because we provide students with experiences that simply cannot be replicated in the classroom. An experience with MATHCOUNTS can mean the difference between self-doubt and self-confidence. It can turn today's math students into tomorrow's innovators, scientists, engineers and doctors.

#### MATHCOUNTS shows students how math has meaning and value beyond the confines of the classroom.

## A Place and a Program for Every Kind of Math Student

It starts with a LOVE of math, an intrinsic desire to solve problems. It is a deep-rooted love that colors every experience the student has with the world. It is a love with limitless potential. It is a love that can change the world. *It is a love that must be nurtured*.

For this student, math classes are a sanctuary, a place where she can be herself. But they are never quite enough. She hasn't been sufficiently challenged.

Then she joins the *MATHCOUNTS Competition Series* team at her school. She finds complex problems to solve and a support network of students who are curious and inquisitive like she is.

Eager to see how she stacks up against the best in the country, she competes in a chapter competition. The thrill of solving a problem in a race against both the clock and other brilliant minds gives her newfound confidence in her own abilities. It doesn't matter how far she goes, because now she knows she is capable. Now that she knows what it takes, there is no turning back.

## There is a place for students who love math.

It starts with a FEAR of math, a fear of failing, of feeling inadequate. It is a deep-rooted fear that colors every learning opportunity a student has. It is a fear that, if unaddressed, with severely limit a student's possibilities. It is an unnecessary fear that must be overcome.

For this student, math class is a place of stress and ridicule—one more situation where he might reveal his inability to make the right decision.

Then he forms a *Math Video Challenge* team with his classmates. He finds a new, more creative "in" with math and supportive peers who help him see that math doesn't have to be a source of anxiety.

He is energized by the work, and his fear of math begins to diminish. His pride in his finished project and his excitement at having his talents recognized give him a newfound sense of confidence, one that he has never associated with math before. It doesn't matter if their video wins or loses, because now he knows he can succeed in math. Now that he has made it, there is no turning back.

There is a place for students who fear math.



March 12, 2014

#### Dear Dr. McGee,

I am very pleased to write this letter supporting the *Enhancing Mathematical Development of Gifted/Talented Students* grant proposal from Dr. Jill Adelson, from the University of Louisville and Principal Nicole Adell, from Newburg Middle School in Jefferson County. Dr. Adelson has an outstanding background in gifted education, mathematics education, and educational psychology. Ms. Adell has consulted extensively with teachers in her building and analyzed state testing and other data to determine the needs of their gifted and advanced middle grades mathematics students as well as planning for serving mathematically promising students from traditionally underrepresented groups. The collaboration among all these education professionals promises to lead to a high-quality program with buy-in from all the teachers involved that should have significant impact on their middle grades students.

Research has shown that involvement in mathematical competitions and other recreational mathematics effects students' chosen careers, with a large percentage of these students choosing STEM careers. It is important that Newburg Middle School is planning this as part of their regular school offerings rather than as an after-school, week-end, or summer program. This will allow many more students to become involved in challenging and engaging mathematical problem solving. The variety of materials that will be utilized, including MathCounts, Math Pentathlon, Math Olympiad, the American Math Competitions, and others are all proven, enjoyable, creative and thought-provoking. I hope that I have the opportunity to work with the teachers on the best practices for using these and other materials to encourage and support students in the attainment of the highest levels of mathematical achievement, innovation, and passion.

Please don't hesitate to contact me if you have any questions.

Sincerely,

Linda Jensen Sheffield, Ph. D Regents Professor Emerita, Northern Kentucky University Ph: 859.466.7983, Fax: 859.441.3255 sheffield@nku.edu,



Jason W. Osborne, Ph.D., Pstat® Professor and Department Chair Educational and Counseling Psychology, Counseling, and College Student Personnel

To: Dr: McGee

From: Jason W. Osborne, Ph.D., Pstate, Professor and Department Chair

Date: March 17, 2014

RE: Letter of support for the "Magnifying Math in the Middle" project

I am pleased to write this letter supporting the "Magnifying Math in the Middle" project for an *Enhancing Mathematical Development of Gifted/Talented Students* grant. This project embodies a collaboration between Dr. Jill Adelson of the University of Louisville and Principal Nicole Adell of Jefferson County Public Schools (JCPS). This project is a natural starting point for these two education professionals to collaborate given Dr. Adelson's background and expertise and the needs and interests of Principal Adell, her teachers, and their students.

Dr. Adelson's substantive background is in gifted education and mathematics education, and she also is a strong quantitative psychologist with expertise in measurement, evaluation, and assessment. Therefore, she is able to provide both content and program knowledge and also lead research design and evaluation so that the program outcomes may be evaluated and the program possibly expanded in the future. Dr. Adelson has experience working with JCPS middle schools, particularly on evaluation of professional development aimed at supporting the needs of gifted and talented students through her Nystrand-Offutt Scholar study, "Cognitive Coaching and Gifted Learners: Examining Effects on Student Achievement and Academic Self-Concept," which also was supported by an internal Research Faculty Development grant. She has applied her experience with that study to the current proposal; for instance, the proposed study integrates on-going professional development, as recommended by other research, to support teachers throughout the year.

As Department Chair for the Educational and Counseling Psychology, Counseling, and College Student Personnel Department at the University of Louisville, I fully support Dr. Adelson's collaboration with Principal AdelI on this grant. It is a worthwhile project that will benefit teachers and students and build a stronger relationship between our department and Newburg Middle School. Please do not hesitate to contact me with any questions you have.

College of Education and Human Development • University of Louisville • Louisville, KY 40292 P: 502.852.5716 F: 502.852.0629 E: Jason.osborne@louisville.edu W: louisville.edu

## NICOLE W. ADELL

#### MIDDLE SCHOOL PRINCIPAL

## Offering 20 years of achievement in developing student-focused environments to maximize learning experiences.

#### **RECENT IMPACT**

Dedicated, resourceful instructional leader with proven ability to create and monitor policies and practices that promote a safe learning environment; ensure a school culture which encourages continuous improvements for teachers and students; develop an environment which fosters open communication among all stakeholders; coach educators in the areas of classroom instruction and classroom climate with an emphasis on curriculum alignment with state and federal standards.

#### **CAREER PROFILE**

Master English Language Arts teacher with over **13 years of experience in middle school** education. Track record for seeking opportunities for professional growth, receiving certification in specific specialty areas and training other educators. Highly motivated and trained to understand different learning styles and multiple-intelligences in order to achieve student success. Nationally Recognized Teacher of the Year (NIE) along with being acknowledged Teacher of the Year four times in three different school districts.

SPECIALTY AREAS Advanced Placement Testing Coordinator (2008-2013) Manage the receipt, distribution, administration, and return of AP Exam materials.

**Socratic Seminar Trainer** (2003 - Present) Proficient with instructing faculties on the value Socratic Seminars hold with reading comprehension.

Literature Circles Trainer (2002 – Present) highly effective in developing literature circles to reflect cross-curriculum instruction. Strategies to integrate stronger comprehension strategies via collaborative "reading" groups (a.ka. Literature Circles) are established in science, social studies, and math classrooms. Content areas that typically migrate from teaching "reading" adopt Literature Circles.

**District C.R.I.S.S. Trainer** (2003 – 2007) Knowledgeable in C.R.I.S.S. (Creating Independence through Student-owned Strategies). One of only seven District Trainers in Hanover County Public Schools responsible for training all New Hires to the district each August. Conducted mid-year training to current HCPS employees during the school year.

Student-Led Conference Trainer (2000-2004) Developed and piloted SLC Curriculum with Cleveland County Public Schools and implemented SLC's in Hanover County Public Schools.

## NICOLE W. ADELL

#### RESUME - PAGE TWO

#### WORK HISTORY

Middle School Principal – July 2013 – Present; Jefferson County Public Schools; Newburg Middle School, Louisville, Kentucky

High School Associate Principal - July 2007 - June 2013; Oldham County Public Schools; South Oldham High School, Crestwood, Kentucky

English Language Arts Teacher - 2006-2007; Oldham County Public Schools; North Oldham Middle School, Goshen, Kentucky

English Language Arts Teacher - 2002 - 2006; Hanover County Public Schools; Oak Knoll Middle School, Mechanicsville, Virginia

English Language Arts Teacher - 1995 - 2002; Cleveland County Public Schools; Burns Middle School, Shelby, North Carolina

Elementary School Teacher - 1994 - 1995; Buncombe County Public Schools; Oakley Elementary School, Asheville, North Carolina

**EDUCATION** 

School Superintendent Certification - May 2012; University of Louisville; Louisville, Kentucky

Masters, School Administration and Leadership - May 2006; George Washington University; Washington, D.C.

Middle Grades Certification – May 1995; Mars Hill College; Mars Hill, North Carolina

Bachelors of Arts, English - May 1993; University of North Carolina at Chapel Hill; Chapel Hill, North Carolina

Abbreviated Vita

Spring 2014

## Jill Lynn Adelson

University of Louisville College of Education and Human Development Educational and Counseling Psychology, Counseling, and College Student Personnel Department Educational Psychology, Measurement, and Evaluation Program Louisville, KY 40292 Phone: (502) 852-4877 Email Address: jill.adelson@louisville.edu

#### EDUCATION

Ph.D. in Educational Psychology, Neag School of Education, University of Connecticut, Storrs, CT. Joint degree in Measurement, Evaluation, and Assessment and in Gifted Education. Cognate in Mathematics Education. May, 2009.

Dissertation: Examining the Effects of Gifted Programming in Mathematics and Reading Using the ECLS-K.

Certificate in Quantitative Research Methods in Psychology, Department of Psychology, University of Connecticut, Storrs, CT. August, 2008.

Research paper: Using the Propensity Score to Make Causal Inferences: The Effects of Variable Selection and Number and Type of Strata.

M.A. Ed. in Curriculum and Instruction, The College of William and Mary, Williamsburg, VA. Specialization: Gifted Education. August, 2005.

Master's Thesis: The Gifted Girl and Mathematics: A Study of the Mathematical Attitudes and Self-Concepts of Gifted Girls in the Self-Contained Gifted Fourth and Fifth Grade Classroom and the Impact of External Influences on Them.

**B.A. in Elementary Education**, Transylvania University, Lexington, KY. Emphases in Math and Science and in Social Studies. Minor in Psychology. May, 2001.

#### RELEVANT PROFESSIONAL EXPERIENCE

Assistant Professor. Educational Psychology, Measurement, and Evaluation Program, Educational and Counseling Psychology Department, College of Education and Human Development, University of Louisville. 2009 to present.

**Research Associate.** Project M<sup>3</sup>: Mentoring Mathematical Minds and Project M<sup>2</sup>: Mentoring Young Mathematicians, Neag Center for Gifted Education/Talent Development, Department of Educational Psychology, University of Connecticut. 2005 to 2008.

Teacher. Grade 4 Self-Contained Gifted and Talented. B. C. Charles Elementary School, Newport News, VA. 2001 to 2005.

#### Adelson CV

#### SELECTED RESEARCH GRANTS, HONORS, AND AWARDS

#### Funded Research Grants - External

- Evaluator. (2012-2015). Updating Middle School Mathematics DTAMS. Institute of Education Sciences (IES). \$1,142,973
- PI. (2010-2011). Literacy Patterns across Kentucky. Research Agenda Support Program Small Grant, Collaborative Center for Literacy Development. \$10,000.
- PI. (2008-2009). A Gift for All? Examining the Effects of Gifted Programming on All Student. Esther Katz Rosen Fellowship for Research and Programs on Giftedness in Children, America Psychological Foundation (APF). \$25,000.

#### **Funded Research Grants – Internal**

- Nystrand-Offutt Scholar, University of Louisville, College of Education and Human Development and Nystrand Center of Excellence in Education, 2013. Cognitive Coaching and Gifted Learners: Examining Effects on Student Achievement and Academic Self-Concept, \$7,500.
- PI.(2010-2011). Examining Fourth Grade Teachers' Feelings of Preparedness in Mathematics Content Areas. Research Faculty Development Grant, University of Louisville, College of Education and Human Development. \$2,916.

#### Awards

Gifted Child Quarterly Paper of the Year, National Association for Gifted Children, 2013

Outstanding Dissertation Award, American Educational Research Association (AERA) Division H: Research, Evaluation, and Assessment in Schools, 2010

Gifted Child Quarterly Paper of the Year, National Association for Gifted Children, 2009

#### SELECTED PUBLICATIONS

#### **Peer-Reviewed Articles**

- Gavin, M. K., Casa, T. M., Adelson, J. L., & Firmender, J. (2013). The impact of advanced geometry and measurement units on the achievement of Grade 2 students. *Journal for Research in Mathematics Education*, 44, 478-509.
- Adelson, J. L., McCoach, D. B., & Gavin, M. K. (2012). Examining the effects of gifted programming in mathematics and reading using the ECLS-K. *Gifted Child Quarterly*, 56, 25-39.
- Adelson, J. L., & Carpenter, B. D.\* (2011). Grouping for achievement gains: For whom does achievement grouping increase kindergarten reading growth? *Gifted Child Quarterly*, 55, 265-278. DOI 10.1177/0016986211417306
- Adelson, J. L., & McCoach, D. B. (2011). Development and psychometric properties of the Math and Me Survey: Measuring third through sixth graders' attitudes towards mathematics. *Measurement and Evaluation in Counseling and Development*, 44, 225-247. DOI 10.1177/0748175611418522
- Adelson, J. L., & McCoach, D. B. (2010). Measuring the mathematical attitudes of elementary students: The effects of a 4-point or 5-point Likert scale. Educational and Psychological Measurement, 70, 796-807. 10.1177/0013164410366694

- Gavin, M. K., Casa, T. M., Adelson, J. L., Carroll, S. R., & Sheffield, L. J. (2009). The impact of advanced curriculum on the achievement of mathematically promising elementary students. *Gifted Child Quarterly*, 53, 188-202.
- Gavin, M. K., Casa, T. M., Adelson J. L., Carroll, S. R., Sheffield, L. J., & Spinelli, A. M. (2007). Project M<sup>3</sup>: Mentoring Mathematical Minds: Challenging curriculum for talented elementary students. *Journal of Advanced Academics*, 18, 566-585.

#### **Books and Chapters**

- Johnson, D., Mason, M., & Adelson, J. L. (2013). Polygons galore! A mathematics unit for high-ability learners in grades 3-5. Waco, TX: Prufrock Press, Inc.
- Adelson, J. L., & Wilson, H. E. (2009). Letting go of perfect: Overcoming perfectionism in kids. Waco, TX: Prufrock Press.
- Adelson, J. L. (2009). Talented girls, mathematics. In B. Kerr (Ed.), Encyclopedia of giftedness, creativity, and talent (Vol. 2, pp. 868-870). Thousand Oaks, CA: Sage.

#### SELECTED INTERNATIONAL AND NATIONAL CONFERENCE PRESENTATIONS

- Adelson, J. L., Dickinson, E., & Cunningham, B. C. (2014, April). The mathematics-reading achievement relationship: Patterns found in a multigrade, multiyear statewide examination. To be presented at the 2014 American Educational Research Association Annual Meeting and Exhibition, Philadelphia, PA.
- Adelson, J. L., & Gavin, M. K. (2103, November). Critical issues: What the research says about mathematics gifted education. To be presented at the 60<sup>th</sup> Annual Convention of the National Association for Gifted Children, Indianapolis, IN.
- Adelson, J. L., Sauer, T. M., & Truitt, T. S. (2012, April). Professional development and teachers' feelings of preparedness to teach mathematics: A multi-group analysis using TIMSS. Presented at the 2012 American Educational Research Association Annual Meeting and Exhibition, Vancouver, Canada.
- Adelson, J. L., Sauer, T. M., & Truitt, T. S. (2012, April). Teachers' feelings of preparedness to teach mathematics, instructional time, and student achievement. Presented at the 2012 American Educational Research Association Annual Meeting and Exhibition, Vancouver, Canada.
- Adelson, J. L., Wilson, H. E., Rambo, K., & Cole, S. (2010, November). Applying advanced statistical techniques to research giftedness: Implications for administrators and researchers. Presented at the 57<sup>th</sup> Annual Convention of the National Association for Gifted Children, Atlanta, GA.
- Adelson, J. L., & McCoach, D. B. (2009, August). Development of an instrument to measure elementary students' mathematical attitudes. Poster presented at the American Psychological Association 117th Annual Convention, Toronto, Canada.
- Adelson, J. L. (2008, October). Raising achievement and closing gaps: Discovering and serving mathematically talented students from diverse backgrounds. Presented at the 55<sup>th</sup> Annual Convention of the National Association for Gifted Children, Tampa, FL.
- Gavin, M. K., Casa, T. M., & Adelson, J. L. (2008, October). Differentiated learning: Research-based practical strategies for success. Presented at the 55<sup>th</sup> Annual Convention of the National Association for Gifted Children, Tampa, FL.
- Gavin, M. K., Spinelli, A. M., & Adelson, J. L. (2006, November). Developing math talent: The impact of challenging curriculum and mathematical discourse. Presentation at the 53<sup>rd</sup> Annual Convention of the National Association for Gifted Children, Charlotte, NC.

Adelson CV

#### SELECTED WORKSHOPS AND INSERVICES

- Adelson, J. L. (2010, June). Project M<sup>3</sup>: Mentoring Mathematical Minds (4-day training). Fairfax County Public Schools, Fairfax, VA
- Adelson, J. L., & Schroeder, L. (2007, May). Doing real research: An introduction to statistics. CAMPY (Connecticut Association for Mathematically Precocious Youth) on Campus, University of Connecticut, Storrs. CT.
- Gavin, M. K., Adelson, J. L., & Moulton, B. (2006, July). Developing mathematically promising middle school students. Weeklong strand presented at the 29<sup>th</sup> Annual Confratute, University of Connecticut, Neag School of Education, Storrs, CT.
- Casa, T. M., & Adelson, J. L. (2005, November). Strategies for differentiating math by content and process. Keeney Street Elementary School, Manchester, CT.

## SELECTED SERVICE AND LEADERSHIP

Member, Kentucky State Advisory Council on the Gifted and Talented, appointed by Governor Steve Beshear, 2014 to present

Chair, National Association for Gifted Children, Research and Evaluation Network, 2012 to present

Treasurer, National Association for Gifted Children, STEM Network, 2013 to present

Board Member-at-Large, American Educational Research Association, Research on Giftedness, Creativity, and Talent SIG, 2009 to 2013