

3.1 Project Objectives and Activities

Our objective is to grow capacity for sustained engagement of academically talented students from rural areas and high-poverty schools in: 1. The identification of -and services for- gifted students; 2. Computer science engagement; and 3. The promotion of effective instruction for gifted students. Proposed Activities include:

1. Identification of gifted students in rural areas and high-poverty schools (RaHPS).

- A. Targeted Outreach Recruitment. Providing curated communication and in-person events to share the characteristics of gifted students and identification best practices.
- B. Targeted Services. Supplemental academically challenging educational opportunities.

2. Computer Science Engagement for gifted students in RaHPS.

- A. Targeted Services. Provide rigorous computer science learning opportunities.

3. Promote Effective Instruction of gifted students in RaHPS.

- A. Targeted Outreach Training. Provide training to educators in RaHPS.
- B. Create new knowledge through an experimentally designed research study.

3.2. Applicable Priorities

As shown above, this proposal is applicable to all three competitive priorities.

3.3. Proposed Project 4-year Outcomes

1. Increased Identification of gifted students in rural areas and high-poverty schools.

A. Targeted Outreach Recruitment.

- A.1. Provide 60 outreach recruitment sessions to at least 3,000 parents in RaHPS.
- A.2. Identify at least 1,000 more academically talented students from RaHPS.

B. Targeted Services.

- B.1. Participating families will be better able to advocate for their child.

B.2. Participants will show high engagement in programs.

B.3. Participants will have successful experiences in engagement opportunities.

B.4. Participants will demonstrate sustained academic engagement behaviors.

B.5. Participants will apply to more selective college than comparable peers.

2. **Computer Science Engagement** for gifted students in rural areas and high-poverty schools.

A. Targeted Services.

A.1. Enroll 1,155 students in engagement opportunities.

A.2. 95% of students complete Camp Discover and 70% to complete Virtual Discovery.

A.3. 95% of those who complete to demonstrate success in their performance.

3. **Promote Effective Instruction** of gifted students in rural areas and high-poverty schools.

A. Targeted Outreach Training.

A.1. Provide 60 outreach recruitment sessions to at least 3,000 educators in RaHPS.

B. Create new knowledge about effective instruction.

B.1. Uncover effective strategies for the sequencing of interventions.

B.2. Discover effective communication methods for changing parent/educator behavior.

3.4. **Number of Participants to be Served**

This project seeks to provide: **Targeted Outreach Recruitment** to **3,000** parents; **Targeted Services** to **1,155** students with an additional **5,000+** students receiving resources and support; and to **Promote Effective Instruction** of gifted students to **3,000 educators**.

3.5. **Number and Location of Proposed Sites**

This project will provide: 60 **Targeted Outreach Recruitment** sessions; **Targeted Services** in KY with planned expansion of footprint in future years to include students from TN & MO;; 60 **Targeted Outreach Training** sessions for educators from 60 RaHPS across the U.S.

**Part 4: Project Narrative
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4.A Project Design

4.A.1. Goals, Objectives, and Outcomes.

There are persistent and large achievement and excellence gaps between those who have economic need and those who are more financially stable. Excellence gaps are differences between subgroups of students at high levels of achievement. For example, there is a 22-point gap between the top performing students who are eligible for free/reduced lunch and those who are not on the National Assessment of Educational Progress (NAEP, known as the Nation's Report Card). This gap has remained stable for over 20 years (Plucker & Peters, 2016).

With such large and persistent excellence gaps, providing effective interventions that change the academic trajectory of high-achieving students with economic need is an urgent societal need. **Closing excellence gaps is critical.** However, in a world of limited resources, it is also critical for parents, educators, and policymakers to understand the return on investment of academic interventions. Specifically, which interventions effectively and efficiently change the long-term academic trajectory of participants? Based on five years of data from three cohorts of participating students, **Project Launch by Duke TIP has strong initial experimental evidence that it is an effective intervention at changing the academic trajectory of high-achieving students with financial need.** With this proposal, we seek to expand Project Launch offerings into **Project Launch Plus**, to achieve three broad objectives. The objectives of Project Launch Plus are **to grow capacity for sustained engagement of students from rural areas and high-poverty schools in:**

- 1. The identification of -and services for- gifted students;**
- 2. Computer science engagement; and**
- 3. The promotion of effective instruction for gifted students.**

A broad overview of all project activities is shown in Table 1. More detailed explanation of the expected number of individuals served by each activity can be found below in Table 2.

Table 1. Overview of Project Launch Plus Activities

1. Identification of Gifted Students					
A. Targeted Outreach Recruitment	10 sessions	15 sessions	15 sessions	20 sessions	Student performance on above-level tests from the schools/districts served
B. Targeted Services	Cohort A, Year 1	Cohort A, Year 2. Cohort B, Year 1.	Cohort B, Year 2. Cohort C, Year 1.	Cohort C, Year 2. Cohort D, Year 1.	Performance in programs, subsequent engagement in programming; college enrollment
2. Computer Science Engagement					
A. Targeted Services	Camp Discover and Virtual Discovery Computer Science experiences	Camp Discover and Virtual Discovery Computer Science experiences	Camp Discover and Virtual Discovery Computer Science experiences	Camp Discover and Virtual Discovery Computer Science experiences	Performance in programs, subsequent engagement in programming; college enrollment
3. Promote Effective Instruction					
A. Targeted Outreach Training	10 sessions, Content Review	20 sessions, Content Review	15 sessions, Content Review	15 sessions, Content Review	Number of students identified as gifted in their home schools/districts
B. Create New Knowledge	Data Collection, Initial Analysis	Data Collection, Analysis, Initial Results Write-up and Presentation	Data Collection, Analysis, and Presentation	Data Collection, Analysis, Presentation, and Publication	Publications and Conference Presentations; assessment of college enrollment behavior

Objectives

1. **Identification of gifted students** in rural areas and high-poverty schools (RaHPS).

A. Targeted Outreach Recruitment.

A.1. Provide 60 outreach recruitment sessions to at least 3,000 parents in RaHPS.

A.2. Identify at least 1,000 more academically talented students from RaHPS.

B. Targeted Services.

B.1. Participating families will be better able to advocate for their child.

B.2. Participants will show high engagement in programs.

B.3. Participants will have successful experiences in engagement opportunities.

B.4. Participants will demonstrate sustained academic engagement behaviors.

B.5. Participants will apply to more selective college than comparable peers.

2. **Computer Science Engagement** for gifted students in rural areas and high-poverty schools.

A. Targeted Services.

A.1. Enroll 1,155 students in engagement opportunities.

A.2. 95% of students complete CAMP DISCOVER and 70% complete Virtual Discovery.

A.3. 95% of those who complete demonstrate success in their performance.

3. **Promote Effective Instruction** of gifted students in RaHPS.

A. Targeted Outreach Training.

A.1. Provide 60 outreach recruitment sessions to at least 3,000 educators in RaHPS.

B. Create new knowledge about effective instruction.

B.1. Uncover effective strategies for the sequencing of interventions.

B.2. Discover effective communication methods for changing behaviors.

To meet the outcome goals of the Javits grant, **we will track the academic growth of participants as they take the standardized above-level tests and eventually enroll in college after progressing through talent search participation.** Project Launch Plus participants will qualify for free or reduced lunch. We will use random assignment to Project Launch condition at the school level. We can measure academic growth via standardized tests scores that are more precise measures of their growth and performance because they will not suffer from the ceiling effects commonly found in state assessments (for further description, see 4.A.2).

4.A.2. Project Design and Needs of the Target Population

Project Launch Plus seeks to address: the need for gifted identification, appropriate challenge for gifted students, providing gifted students with opportunities to be grouped with similar-ability peers, and addressing the opportunity gap in which some gifted students are unable to afford supplemental programs. Further, Project Launch Plus focuses on providing services to gifted students in rural areas and in high-poverty schools.

Gifted Student Needs: Underchallenged. Gifted students often report higher levels of boredom than their typically-achieving peers because of the lack of challenge (Kanevsky & Keighly, 2003; Plucker et al., 2004). However, setting matters. Gallagher, Harradine, and Coleman (1997) found that gifted students had lower levels of boredom in their gifted programs than in their regular classrooms.

The lack of appropriate challenge for gifted students has more consequences than potential boredom. Rambo-Hernandez and McCoach (2015) found that initially average-achieving students made substantial gains during the school year but not in the summer. On the other hand, students who were already high-achieving made academic gains in reading at nearly the same rate during the school year as they did during the summer. Being in school was not

associated with more learning for them.

Gifted Student Needs: Grouped with Like-Ability Peers. In a meta-analytic review of over 100 effects from more than 50 studies, Lou, Abrami, and Spence (2000) found that high-ability students benefited the most from within-class grouping compared to average- and low-ability students. In other words, being with like-ability peers for instruction made the biggest differences for high-ability students, a result also found in Kulik and Kulik's 1992 meta-analytic review when content coverage was altered. Moreover, when high-ability students are grouped together, more underrepresented students are identified as high-achieving over time (Card & Giuliano, 2014; Gentry, 2014).

Gifted Student Needs: Addressing the Opportunity Gap. Not only are gifted students being underserved in schools, but there also is an opportunity gap. If student needs are not being met in schools, then there is a question of affordability of supplemental programs for students who demonstrate readiness and need for challenge. In fact, among the top 25% of first graders, those from low-income homes were no longer considered high-achieving by fifth grade more often than those from high-income homes (44% vs. 31%; Wyner, Bridgeland, & DiIulio, 2007).

Underserved Students: Gifted Students in Rural Areas. The excellence gaps for gifted students in rural areas extends from elementary school through high school (Plucker & Harris, 2015). In fact, these students "represent a culturally unique, underidentified, and underserved population" (Assouline, Ihrig, & Mahatmya, 2017, p. 250). Their educational opportunities are limited due to such issues as geographic isolation, lack of technological support for online access, limited access to advanced STEM coursework, and economic barriers, including consistent underfunding of gifted education programs (Baker & McIntire, 2003; Howley, Rhodes, & Beall, 2009; Kittleson & Morgan, 2012; National Science Board, 2014).

Underserved Students: Gifted Students in High-Poverty Schools. Students from low-income families are persistently underidentified and underserved in gifted education (Borland, Schnur, & Wright, 2000). These students tend to have fewer opportunities to learn than their peers from higher-income families (Peters & Engerrand, 2016). Moreover, their school environment affects their achievement above and beyond the influence of their family and neighborhood (Esposito, 1999; Perry & McConney, 2010). In fact, school poverty predicts the percent of students identified as gifted within the school (Hamilton et al., 2018). Additionally, they are less likely to be served or have access to advanced classes; for instance, limited resources in high-poverty schools means that these schools are less likely to offer advanced mathematics courses (Raudenbush, Fotiu, & Cheong, 1998).

Project Launch Plus: Addressing Gifted Student Needs. To address these needs of gifted students, **Project Launch Plus provides opportunities for appropriate challenge with like-ability peers to gifted students from low-income backgrounds** through a variety of interventions including a week-long, summer, face-to-face, residential program; an online learning experience; and a book club (see Table 1 for more detail). Further, to address the opportunity gap, **much of the Project Launch Plus funding is devoted directly to Outreach Recruitment aimed at increasing identification rates and providing services so that students from low-income homes are able to participate in supplemental programs designed to foster their sustained engagement.** Project Launch Plus particularly seeks to identify and serve students from rural areas and high-poverty schools. Programs outside of the traditional school have several advantages, particularly when students' home schools are under-resourced (Plucker & Harris, 2015).

Talent Search Identification Methods

To participate in a talent search, students must have scored in the 90th percentile on a grade-level standardized test within the last two years. Such students are scoring near the top (“the ceiling”) of grade-level tests and may not have their talents measured precisely because these tests may be too easy for them (Lohman & Korb, 2006; Rambo-Hernandez & Warne, 2015). To get a more accurate assessment of their talents, talent searches provide an opportunity for students take a test designed for older students. Because these tests are designed for much older students, they have a higher ceiling than most grade-level tests (Warne, 2014). As such, the above-level testing experience helps differentiate students who have mastered the material several years above their grade-level from those who have “merely” mastered on-level material, identifying differences in student performance and learning needs even within the top 1% of students (Robertson, Smeets, Lubinski, & Benbow, 2011). Further, above-level tests do not have the same limit as grade-level achievement tests related to regression toward the mean. When students are scoring in the 90th percentile and greater on grade-level achievement tests, regression toward the mean does not allow meaningful measurement of growth (Rambo-Hernandez & Warne, 2015). Thus, the higher ceiling and ability to meaningfully measure growth help differentiate long-term outcome assessment of gifted program participation that might otherwise be masked by students’ achieving extremely high on-level test scores.

Additionally, above-level test scores from talent searches can also be used by schools as part of their identification and service model (Thomson & Olszewski-Kubilius, 2014). Because the tests have higher ceilings, they can help provide schools with more precise, domain-specific information about the magnitude of service appropriate for that specific student.

Targeted Outreach Recruitment

The targeted group for the proposed outreach recruitment is parents in rural areas and

high-poverty schools whose children could benefit from going through the gifted identification process. The Western Kentucky University Center for Gifted Studies (WKU CGS) has fostered long-standing relationships with educators at the state, district, and building level, with over hundreds of schools. Recruitment efforts will include holding sessions for parents both in person and virtually, sharing information with superintendents and principals at state conferences as well as via email and social media, and working with personnel at the Kentucky Department of Education to ensure that opportunities related to the Kentucky Talent Search are disseminated.

WKU CGS leadership have provided consulting services for numerous districts across TN and regularly make presentations at the Tennessee Association for the Gifted Conference. In MO, WKU CGS has strong ties with the state department of education gifted education consultant and was asked by the College Board to host an AP Institute in St. Louis. These and other professional contacts (established through training educators who work across the geographic region in WKU graduate programs) serve as an solid foundation for recruiting attendees to Targeted Outreach Recruitment sessions as well as partnering schools to recruit students for Project Launch Plus Targeted Services.

The WKU CGS Team participates in grassroots community engagement at the building level through fostering relationships with school and community organization, holding events around school improvement, and maintaining contact and support after initial engagement. Events are offered in person as well as virtually, or through equipping local leaders to hold their own events.

Project Launch Identification Methods

To participate for Project Launch, students must meet all of the following criteria:

- A) Qualify for participation in the Kentucky Talent Search (see previous section),

B) Qualify for free/reduced meals under federal guidelines

C) Be in the 6th grade, and

D) Live in four-hour driving proximity to The Center for Gifted Studies at Western Kentucky University in Bowling Green, KY. Planned expansion of student services footprint in Year 2 to include students from TN and MO (see below for more detail). [This geographic component is to limit transportation costs to and from programs.] These proposed geographic areas are comparable to the originally proposed geographic areas in that they have numerous students who receive free/reduced lunch, attend high poverty schools, and live in rural areas. These groups represent the targeted demographics of the Javits grant as well as the original submission.

Conservatively, there are over 138,000 academically talented 4th-6th grade students eligible for free/reduced lunch nationwide. In the last two years, nearly 13,000 such students have enrolled in the Duke TIP 4th-6th Grade Talent Search. The geographic, ethnic, and socio-economic diversity of Duke TIP's students provides the opportunity for them to meet, get to know, and learn with students from varied backgrounds but with similar ability and interests, often for the first time. The history of the Duke TIP 4th-6th Grade Talent Search is actually the starting point for the Kentucky Talent Search as The Center for Gifted Studies initiated this program after Duke TIP was no longer an entity. The Center offered Duke TIP's first cooperative program, and this summer will be the 38th year for offering VAMPY, a three-week residential program. WKU hosted the Kentucky Awards Ceremony for Duke TIP every year except the first two.

All students who meet all four of the identification criteria are then randomly assigned to one of four conditions to be invited to be a part of Project Launch (see Table 2). Two of the

conditions are considered a “high-dose” intervention, with students being invited to participate in Camp Discover, Virtual Discovery, , nudges, and above-level testing. The difference between the high dose conditions is the sequencing of interventions. One of our outstanding questions is whether the order of interventions –online first or in-person first CAMP DISCOVER– affects students’ and families’ engagement in the Talent Search and beyond. This is why High Dose A and High Dose B interventions exist. Project Launch Plus will assess how to optimize the distribution of interventions to further develop and refine our understanding of how to serve high-achieving students with financial need most effectively. Randomly assigning students to each condition will allow us to make causal inferences about the effects of providing interventions in various order (i.e., does participating in a face-to-face intervention before an online intervention foster greater long-term engagement than getting the online intervention first?).

The “low-dose” intervention consists of students receiving nudges and a free above-level testing experience. The nudges are a low cost, highly scalable intervention that provides timely research-based advice and resources to parents. The above-level testing opportunity is a relatively low cost, highly scalable intervention that provides a more precise measure of a student’s academic talent than can be used by schools and families as part of the process to determine what services would be appropriate for the student. Students in this low dose group also serve as a comparison group to help us assess the effects of the high dose treatments. All remaining students will still receive the nudges.

Table 2. Project Launch Plus Service Model

Two-Year Intervention Plan			
	Year 1	Year 2	Number of Students
	6th Grade Transitioning to 7th Grade	7th Grade Transitioning to 8th Grade	
High Dose A	1 Camp Discovery program experience	1 Camp Discovery program experience	Year 2: 60
	1 Virtual Discovery program experience	1 Virtual Discovery program experience	Years 3: 70
	Nudges	Nudges	Year 4: 75
	I-Excel Above-level test	8th Grade Talent Search Registration with ACT	Year5: 75
High Dose B	1 Virtual Discovery program experience	1 Virtual Discovery program experience	Year 2: 60
	1 Camp Discovery program experience	1 Camp Discovery program experience	Years 3: 65
	Nudges	Nudges	Year 4: 75
		8th Grade Talent Search Registration with ACT	Year5: 75
Low Dose	Nudges	Nudges	Years 2-5: 150
	I-Excel Above-level test	8th Grade Talent Search Registration with ACT	
All Other 6th Students with Financial Need	Nudges	Nudges	>1,000 each year and growing
			High Dose: 555 Low Dose: 600 Other: >5,000
Total Students			

Promoting Effective Instruction

Similar to the Targeted Outreach Recruitment activities discussed above, the targeted population in the proposed outreach training will be from rural areas and high-poverty schools. But in this case, the population will be educators who could benefit from learning more about how to apply best practices in gifted education and services. **The project will create an Advisory Panel to select the topics of content covered in the Targeted Outreach Training** (e.g., universal screening, local norms, talent development opportunities, etc.) using best-evidence, best-practices, NAGC Program Standards, and relevance to local context as the guiding principles. Once topics are selected, The PI will create engaging series of workshops and related materials (e.g., free webinars, blog posts) to help districts implement these practices.

All materials will be made freely available to anyone with an internet connection on the

project websites resources pages. No login or password will be required. **Materials advertising the free availability of these workshops and materials will be targeted toward school staff in rural areas and high-poverty schools.** As shown in Table 1 above, the project is budgeting 60 sessions where the PI **will travel to rural areas or high-poverty schools to improve school staff's understanding and ability to implement these practices in their local context.**

Create New Knowledge

The primary targeted population in creating new knowledge through the experimentally designed research study is the research community. Publishing research on the order- and dose-effects of interventions will help inform the research community about what matters when serving gifted students. An indirect target population in creating new knowledge are parents and practitioners. Even if they do not read the original journal articles, **parents and practitioners are the ultimate consumers of research findings.**

4.A.3. Rationale for Exceptional approach for Meeting Requirements

Project Launch Plus is a coordinated program combining (1) Targeted Outreach aimed at increasing gifted identification rates for students from rural areas or high-poverty schools; (2) A suite of Program Services for gifted students with financial need that are innovative, problem-based learning curricula, research-based advice and guidance, and differentiated outreach; and (3) Targeted Outreach Training to promote effective instruction for gifted students in rural areas or high-poverty schools.

Targeted Outreach Recruitment

The Center for Gifted Studies has fostered long-standing working relationships with educators at the state, district, and building level. The CGS team participates in grassroots community engagement at the building level through fostering relationships with school and

community organization contacts, actively participating in meetings and forums around school improvement, and following up with contacts after initial outreach events. Outreach events are offered in person as well as virtually using webinars or video conferences, and through equipping school personnel or community organization leaders to hold their own events. The expanded geographic footprint of students served will begin in Year 2 with 8 out of 20 Targeted Outreach Recruitment sessions to be held in Montgomery, Putnam, Sumner, and Rutherford counties in Tennessee (or target families who live there). In Missouri, sessions will be held in Carbondale as well as St. Louis and surrounding districts (or target families who live there). Session location and growth in subsequent years will be based on returns and on-going relationship building. Students living in these geographic areas and who meet all Project Launch identification criteria (as articulated above in Project Launch Identification Methods) will be eligible for the Targeted Student Services (see Table 2).

Recruitment will rely on NCES locale coding of rural (fringe, distant, and remote) to determine rurality and Title 1 status as well as Census Tract of “high-poverty” as metrics to determine high-poverty schools. This will reveal rural areas and high-poverty schools with historical under-engagement that are in need of targeted recruitment. Doing so will assure that project resources will be devoted to the targeted population.

Targeted Program Services

The one-week CAMP DISCOVER summer residential program employs cross-disciplinary, problem-based learning curricula. Year 1 for a cohort will offer opportunities to explore or discover concepts in topics from science, mathematics, language arts, and social studies as they intersect. Year 2 for a cohort will allow gifted and talented students to examine a complex, real-world problem – such as a hurricane, oil spill, or disease outbreak – as a

member of a research focused team on a particular academic discipline, while also recognizing and exploring interdependencies with other academic and professional fields. Many of the research teams focus on STEM fields, including medicine and engineering; Computer science will be built into years 1 and 2 for each cohort.. The CAMP DISCOVER experience meets talented students' academic and social-emotional needs by providing rigor and engagement with advanced content in an authentic setting, as well as a collaborative learning environment of talented peers and dedicated instructors, teaching assistants, and counselors who serve as role models.

The three-week Virtual Discovery online program uses problem-based learning to engage students in interdisciplinary investigationsThe Virtual Discovery experience addresses gifted students' educational needs through rigorous, real-world problem solving and through meaningful connections with other gifted students and an instructor, all while facilitating the development of important 21st-century digital-learning skills.

Project Launch Plus also provides an above-level testing experience, which is a valuable tool for identifying areas and extent of academic strength that traditional grade-level assessments do not. Students, families, and educators can use these above-level results to design differentiated learning plans – to include in-school and supplemental experiences – that allow students to refine and deepen their academic talents and interests. The above-level test used will be I-Excel which will be accessed in partnership with the Belin-Blank Center at the University of Iowa. I-Excel is based on an early level ACT test and serves the same above-level testing function as the PSAT.

Achieving these engagement results requires **financial resources and differentiated, proactive advising and support:**

- Notifying Project Launch families in advance that there are no costs to them for programs and opportunities removes uncertainty, allowing families to apply without worrying about how much financial assistance they might receive.
- An assigned advisor – the Program Manager – provides both proactive and responsive communication that establishes and fosters personal connection with Project Launch families and their support network (i.e., school counselors, faith leaders, family friends).
- Differentiated communication – including additional touchpoints before, during, and after the application period for programs and opportunities – helps families complete applications and necessary follow-up steps.
- The Program Coordinator collaborates with internal working groups to deepen awareness of students’ and families’ needs, to modify processes as needed, and to ensure continuity of communication and support.

4.A.4. Supporting Evidence

Evidence of effectiveness of identification

The Talent Search model has 40 years’ worth of evidence supporting its effectiveness (e.g., Thomson, Olszewski-Kubilius, 2014). It not only meets students’ needs to be challenged with like-ability peers through supplemental programming, but **the Talent Search model also provides information beneficial to the identification of and services provided to gifted students in traditional schools.** Using above-level testing provides more details about students’ skills and knowledge in a domain, allowing course and program recommendations to be better matched to their needs, including the ability to match for appropriate scope of knowledge and pace of instruction (Olszewski-Kubilius, 1998). With talent search data, enrichment, acceleration, and course sequence recommendations can be made to help students develop throughout middle and high school, college, and beyond. Moreover, enrichment programming,

like that provided by Project Launch, is a critical component both of talent identification and talent development for traditionally underidentified and underserved populations, such as students from low-income families (Olszewski-Kubilius & Clarenbach, 2012).

Targeted Services

Duke TIP has assessed the impact of Project Launch for five years. Aligned with its objectives (see above, 4.A.1), **Project Launch participants consistently show that they are more deeply and more consistently academically engaged** than students with financial need not participating in Project Launch. The annual creation of new cohorts allows for the project to incorporate feedback into its practices and procedures. Additionally, because WKU CGS does not rely on a larger bureaucracy, we are able to change procedures when the situation dictates that change will help us more effectively achieve project objectives. As an example, when Project Launch was created, online independent mentorship was part of the suite of services. Evidence suggested it was not effective at sustaining engagement, so it was replaced with Virtual Discovery. If the outcome data suggest that Virtual Discovery is not effective, it will also be removed from services. If dropped, providing more students with CAMP DISCOVER and above-level testing experiences would be the likely replacement.

Similarly, the computer science-based CAMP DISCOVER research teams and Virtual Discovery case experiences will rely on student performance and feedback to evolve to deliver appropriately challenging, engaging experiences that foster long-term academic engagement.

4.A.5. Performance Feedback and Continuous Improvement

We will rely on several forms of feedback to assure continuous improvement of both participants and the project. Project performance will be based on how well it achieves its objectives, and the project delivery is designed to evolve based on performance feedback. The

following feedback will be gathered each grant year and will be used to adapt project delivery.

Targeted Outreach Recruitment Feedback

- Surveys that gather satisfaction, understanding, and action-taking by participants will be used to gauge effectiveness and to evaluate recruitment itself.
- Student enrollment and performance on above-level tests from the schools/districts served will be tracked over time as an indirect assessment.

Targeted Services Feedback

- Data from pre- and post-intervention surveys, as well as the application, participation and performance overview of students involved in the CAMP DISCOVER Program and Virtual Discovery.
- Student enrollment in and performance on above-level tests from the schools/districts served will be tracked over time as an indirect assessment of impact of the project. Although not a state assessment, these metrics (including the Science portion of the I-Excel) will allow for causal inference on the effects of the project.
- We will compare open and click rates of nudges for participants and non-participants.
- We will compile qualitative feedback received from parents, students or educators.
- We will follow participants as they age into college age as a form of “ultimate criterion” of academic trajectory. StudentTracker allows WKU CGS to record participant enrollment in college and when they graduate with what degree and major.

Targeted Outreach Training Feedback.

- Surveys that gather satisfaction, understanding, and action-taking by participants will be used to gauge effectiveness as well as how the sessions should be improved.
- Number of students identified as gifted in Outreach Training treatment group as

compared to number of students identified as gifted in a comparison group will be tracked over time as an assessment of impact of the services provided.

Knowledge Creation Feedback

- Knowledge Creation data will also assess the effectiveness of all program components.
- Specifically, it will inform us whether Virtual Discovery online programming fosters sustained engagement. If it does not, then this intervention will be discontinued for subsequent cohorts.

4.B Project Personnel

Johns Hopkins University prides itself on fostering an environment that is inclusive, respectful and free from discrimination and harassment. To ensure compliance with these ideals and with affirmative action and equal opportunity laws, the Office of Institutional Equity leads JHU's efforts in these areas and serves as a central resource for those with disabilities or those who require accommodations. The JHU School of Education is committed to nurturing a learning and working environment that utilizes the contributions and develops the talents of a diverse range of students, faculty and staff. We carry out this work through research, practice and policy efforts dedicated to increasing educational opportunity and transforming the lives of all persons – inclusive of gender, race, color, ethnicity, national origin, age, disability, religion, sexual orientation, gender identity or expression, and veteran status. For more information, see <https://education.jhu.edu/about-us/diversity-and-inclusion/>.

Western Kentucky University (WKU) is an Affirmative Action/Equal Opportunity Employer committed to providing employment opportunity without regard to an individual's age, color, disability, gender, gender expression, gender identity, genetic information, national origin, race, religion, sex, sexual orientation, or veteran status. WKU also makes good faith efforts to

recruit, hire, and promote qualified women, minorities, individuals with disabilities, and veterans. In accordance with Title IX of the Education Amendments of 1972, WKU prohibits discrimination based on sex. Sexual harassment is a form of sex discrimination. WKU has designated a Title IX coordinator in the Office for Institutional Equity.

4.B.1. Project Director and Principal Investigator Qualifications

The Project Director and Primary Investigator is Dr. Matthew C. Makel, Associate

Research Scientist, Johns Hopkins University

Dr. Makel has been working with gifted and talented students for 20 years and is a leading expert in gifted education and advancing research methods in the social sciences. He has given invited talks on three continents to researchers, educational administrators, educators, and parents. His substantive research focuses on how academically talented individuals experience the world and how gifted identification and services can be more equitably allocated and implemented. His methodological work focuses on improving research methods in terms of transparency and rigor so that consumers can better understand the generalizability, reproducibility, and replicability (or lack thereof) of research findings.

His research has been published in top gifted education journals (*Gifted Child Quarterly* [9x], *Journal of Advanced Academics* [3x], and *Journal for the Education of the Gifted* [3x]), as well as the top educational (*Educational Researcher*, *Review of Educational Research*, *AERA Open* [2x]) and psychological (*Psychological Science*, *Journal of Educational Psychology*, *Intelligence* [3x], *Current Directions in Psychological Science*, *Perspectives on Psychological Science*) research journals. Publishing in top journals assures that the results reach the attention of larger audiences needed to help catalyze change. Dr. Makel has edited two books, published by the American Psychological Association and Prufrock Press.

Dr. Makel has been awarded numerous awards for Excellence in Research by the Mensa

Education & Research Foundation and was given the Early Scholar Award in 2017 by the National Association for Gifted Children (NAGC). At NAGC, he has served as the Chair of the Research & Evaluation Network, is a member of the NAGC Publication Committee, was a member of its Network Task Force, co-Chair (with Susan Johnsen) of its 2018-2019 Definition Task Force, and served on its search committee for a new Executive Director. Dr. Makel co-created Project Launch with Brian Cooper (see Table 3) and Dr. Shayne Goodrum (retired). He has been serving as the evaluator of Project Launch since its inception and served as the Primary Investigator for grants and contracts worth over \$1 million.

4.B.2. Key Project Personnel Qualifications

Co-Primary Investigator, Dr. Julia Link Roberts

Julia Link Roberts is the Mahurin Professor of Gifted Studies at Western Kentucky University. Dr. Roberts is Executive Director of The Center for Gifted Studies and The Carol Martin Gatton Academy of Mathematics and Science in Kentucky. She is President of the World Council for Gifted and Talented Children, a board member of The Association for the Gifted (a division of the Council for Exceptional Children and the Kentucky Association for Gifted Education), and Chair of the Kentucky Advisory Council for Gifted and Talented Education. Dr. Roberts is co-chair of the CEC Teacher Standards Revision Task Force.

Dr. Roberts is co-editor of the text, *Introduction to Gifted Education*, which received the Texas Association for the Gifted and Talented 2019 Legacy Book Award in the Scholar category. She is co-author of *Teacher's Survival Guide: Gifted Education* (2nd edition) (2020), *Assessing Differentiated Student Products: A Protocol for Development and Evaluation* (2nd) (2015), and *Strategies for Differentiating Instruction: Best Practices for the Classroom* (3rd edition) (2015). Dr. Roberts received the Ann F. Isaacs Founder's Memorial Award from the National Association for Gifted Children (NAGC) in 2019. She has been honored with the

Palmarium Award by the University of Denver in 2015 and the NAGC Distinguished Service Award in 2012. She was honored with the Acorn Award as the outstanding professor at a four-year university in Kentucky in 2011. At WKU, Dr. Roberts has been designated a Distinguished Professor.

Dr. Roberts has directed various grants, most recently from the James Graham Brown Foundation, the National Stem Cell Foundation, the Qatar Foundation, and the Jefferson County Public Schools (Louisville). She was PI of Javits grants Project Gifted Education in Mathematics and Science (GEMS) 2008-2013 and Co-PI of Reaching Academic Potential (RAP) 2015-2018.

Additional Project Staff

The staff at The Center for Gifted Studies at WKU share office space with The Gatton Academy of Mathematics and Science in Kentucky, and the two units also share many goals for gifted students. Much of the focus of The Center for Gifted Studies will incorporate many Project Launch Plus actions into its operations. With the launching of the Kentucky Talent Search, The Center for Gifted Studies will advertise for a Project Manager for the Talent Search. That individual will assume planning responsibilities with the Co-PI of the project. The Project Manager will coordinate the planning and implementation of Camp Discover and Virtual Discovery activities; plan for the administration of the advanced level testing; coordinate with personnel in schools; and disseminate information about the Kentucky Talent Search and opportunities offered by Project Launch Plus.

Staff at The Center for Gifted Studies will share responsibilities for implementing goals of Project Launch. Staff will include Dr. Tracy Inman, Associate Director; Dr. Tyler Clark, Executive Administrator; Dr. Mary Evans, Program Developer; Mr. Jesse Knifley, Coordinator of Communication and Technology; Mrs. Erika Solberg, Coordinator of Special Programs; and

Regina Braun, Office Coordinator.

Table 3. Project Launch Staffing Organizational Chart

	Project Role		Role	Year 1 Effort	Year 2 Effort	Year 3 Effort	Year 4 Effort	Project Actions
Project Leadership	Project Director and Primary Investigator	Dr. Matthew C. Makel	Oversee and manage all aspects of the project. Develop and deliver Targeted Outreach Training materials in coordination with North Carolina DPI partners. In conjunction with Co-PI and WKU partners, assist in the development and delivery of Targeted Outreach Recruitment materials. Conduct all evaluation and data analysis. Lead all Content Creation dissemination efforts.	50%	40%	35%	35%	All
	Co-Primary Investigator	Dr. Julia Link Roberts	Oversee and manage the delivery of all Targeted Services aspects of the grant. Oversee the development and delivery of Targeted Outreach Recruitment. Deliver relevant data to PI for evaluation and analysis to complete all relevant reports. Contribute to Content Creation dissemination efforts.	25%	25%	25%	25%	1A, 1B, 2A, 3B
WKU Center for Gifted Studies Staff	Project Manager		Manage the day-to-day operations and communications with student participants in Project Launch Plus.	50%	50%	50%	50%	1B, 2A
	Associate Director	Dr. Tracy Inman	Provide sessions disseminating information about the Kentucky Talent Search. Communicate with parents. Assist in developing learning experience for Camp Discover and Virtual Discovery	10%	10%	10%	10%	1A, 1B, 2A
	Executive Administrator	Dr. Tyler Clark	Manage data collection. Support the above-level testing. Assist with the nudges for parents.	15%	15%	15%	15%	1B, 2A
	Program Developer	Dr. Mary Evans	Provide sessions disseminating information about the Kentucky Talent Search. Assist in developing learning experiences for Camp Discover and Virtual Discovery	20%	20%	20%	20%	1B, 2A
	Coordinator of Communication and Technology	Mr. Jesse Knifley	Manage the marketing of opportunities offered by Project Launch Plus and the Kentucky Talent Search	15%	15%	15%	15%	1A, 1B, 2A
	Coordinator of Special Programs	Mrs. Erika Solberg	Support programming for the Kentucky Talent Search and Project Launch Plus	10%	10%	10%	10%	1A, 1B
	Office Coordinator	Ms. Regina Braun	Manage the budget					1A, 1B, 2A
Additional	Advisory Board	NC DPI staff	NC DPI staff will help coordinate Targeted Outreach Training and align content with on-going initiatives with similar goals of increasing identification rates will assist in selecting topics and developing materials for Targeted Outreach Training	As needed	As needed	As needed	As needed	3A

4.C Management Plan

4.C.1. Management Plan Adequacy

As outlined in Table 3, numerous staff have responsibilities related to the success of the project activities. Because much of the project is aimed at expanding the number of students with financial need who have access to programming, much of the success of the project hinges on the successful delivery of existing programs. WKU CGS has a 40 year history of providing successful programs.

Targeted Outreach Recruitment

In 2018, WKU CGS staff conducted over 150 talks and events. Adding the Targeted Outreach Recruitment events is well within their ability. However, **Javits funds will allow for substantial growth in capacity to recruit specifically from targeted groups in rural areas and high-poverty schools.** Without Javits funding, such targeted sessions will likely not happen. Table 4 provides a timeline of benchmark goals for Targeted Outreach Recruitment.

Targeted Services Management & Timeline

In 2018, The Center for Gifted Studies served 1,500 elementary children in Super Saturdays, Camp Explore, and Camp Innovate and 125 young people in SCATS (residential program for 6th-8th graders) and 155 VAMPY (residential program for 7th-10th graders). **Javits funds will allow for substantial growth in capacity to enroll targeted students in programs (555 high dose, 600 low dose).** Without Javits funding, access to programming by these students will likely not happen. Project participants are given early enrollment opportunity in both CAMP DISCOVER and Virtual Discovery to assure access. The timeline in Table 5 outlines the experiences of Cohort A, which will be identified in Year 1. Subsequent Cohorts will be identified in each subsequent year, following the same timeline. To avoid redundancy, the timeline only follows Cohort A, but notes when Cohort B will begin its experiences.

Table 4: Targeted Outreach Recruitment

1A. Targeted Outreach Recruitment.						
A.1. Provide 60 outreach recruitment sessions to at least 3,000 parents in Rural Areas and High Poverty Schools (RaHPS).						
A.2. Identify at least 1,000 more academically talented students from RaHPS.						
		Schools to target for recruitment	Recruitment marketing materials	Family recruitment materials (powerpoints, handouts, student support and resource materials)	Pre- and Post-Session Evaluation	Outreach Recruitment Sessions to Increase Awares and engagemeing in the Kentucky Talent Search
Year 1	Timeline					
	Spring 2021					
	Summer 2021	Selection	Creation	Creation		
	Fall 2021	Communication	Dissemination	Dissemination	Dissemination	10 sessions to 500 parents
	Winter 2022		Review	Review	Dissemination	5 sessions to 250 parents
Year 2	Spring 2022		Revision	Revision	Transmit de-identified data to PI; Analysis	
	Summer 2022	Selection	Dissemination	Dissemination	Review	
	Fall 2022	Communication	Dissemination	Planning; Dissemination	Planning; Dissemination	10 sessions to 500 parents
	Winter 2023		Review	Review	Dissemination	5 sessions 250 parents
Year 3	Spring 2023		Revision	Revision	Transmit di-identified data to PI; Analysis	
	Summer 2023		Dissemination	Dissemination	Review	

	Fall 2023		Dissemination	Planning; Dissemination	Planning; Dissemination	10 sessions to 500 parents
	Winter 2024	Selection	Review	Review	Dissemination	10 sessions to 500 parents
Year 4	Spring 2024	Communication	Revision	Revision	Transmit di-identified data to PI; Analysis	
	Summer 2024		Dissemination	Dissemination	Review	
	Fall 2024		Dissemination	Dissemination	Dissemination; Analysis	10 sessions to 500 parents
						60 sessions engaging at least 3,000 parents; recruiting at least 1,000 students to Kentucky Talent Search
Grant Objective Total						

Table 5. Targeted Service Timeline.

		Schools to target for recruitment of students	Marketing materials	High Dose Intervention (Groups A and B)	I-Excel Above-Level Test	Low Dose Intervention	Nudges to All other	Feedback on Program Experiences
Year 1	Spring 2021	Selection; Communication	Creation; Dissemination					
	Summer 2021			Cohort 1 Year 1 (N = 60 per group)				Collect
	Fall 2021	Review	Review	email Nudges (Cohort 1)	Cohort 1 (High Dose and Low Dose Groups)	email Nudges (Cohort 1 N = 150)	Same as Low Dose Intervention Group	Transmit de-identified data to PI; Analysis
Year 2	Winter 2022	Selection; Communication	Dissemination	email Nudges (Cohort 1)		email Nudges (Cohort 1)		Review/Revise
	Spring 2022	Communication	Dissemination			email Nudges (Cohort 1)		
	Summer 2022			Cohort 1 Year 2 (N = 60 per group)		email Nudges (Cohort 1)		Collect
				Cohort 2 Year 1 (N = 70 per group)				
				email Nudges (Cohorts 1 and 2)				
	Fall 2022	Review	Review	email Nudges (Cohort 2)	Cohort 2 (High Dose and Low Dose Groups)	email Nudges (Cohorts 1 and 2; N = 150 each)		Transmit de-identified data to PI; Analysis

		Schools to target for recruitment of students	Marketing materials	High Dose Intervention (Groups A and B)	I-Excel Above-Level Test	Low Dose Intervention	Nudges to All other	Feedback on Program Experiences
Year 3	Winter 2023	Selection; Communication	Dissemination	email Nudges (Cohort 2)		email Nudges (Cohort 2)		Review/Revise
	Spring 2023	Communication	Dissemination	email Nudges (Cohorts 2 and 3)		email Nudges (Cohort 2)		Collect
	Summer 2023			Cohort 2 Year 2 (N = 70 per group) Cohort 3 Year 1 (N = 75 per group) email Nudges (Cohorts 2 and 3)		email Nudges (Cohort 2)		
	Fall 2023	Review		email Nudges (Cohort 3)	Cohort 3 (High Dose and Low Dose Groups)	email Nudges (Cohorts 2 and 3; N = 150 each)		Transmit de-identified data to PI; Analysis
Year 4	Winter 2024	Selection; Communication	Dissemination	email Nudges (Cohort 3)		email Nudges (Cohort 3)		Review/Revise
	Spring 2024	Communication	Dissemination	email Nudges (Cohorts 3 and 4)		email Nudges (Cohort 3)		Collect
	Summer 2024			Cohort 3 Year 2 (N = 75 per group) Cohort 4 Year 1 (N = 75 per group) email Nudges (Cohorts 3 and 4)		email Nudges (Cohort 3)		

Fall 2024	email Nudges (Cohort 4)	Cohort 4 (High Dose and Low Dose Groups)	email Nudges (Cohorts 3 and 4; N = 150 each)	Transmit de- identified data to PI; Analysis
Grant Objective Total	4 Cohorts of High Dose Interventions for 555 students		4 Cohort of Low Dose Interventions for 600 students	

Targeted Outreach Training

Javits funds will allow for substantial growth in capacity to conduct training sessions specifically for teachers in rural areas and high-poverty schools (60 sessions for 3,000 educators). Without Javits funding, such targeted sessions will not happen.

The project will create an Advisory Panel to select the topics of content covered in the Targeted Outreach Training (e.g., universal screening, local norms, talent development opportunities, etc.) using best-evidence, best-practices, NAGC Program Standards, and relevance to local context as the guiding principles. Once topics are selected, the PI will create engaging series of workshops and related materials. All materials will be made freely available to anyone with an internet connection on the project website resources pages. No login or password will be required. **Materials advertising the free availability of these workshops and materials will be targeted toward school staff in rural areas and high-poverty schools.**

Knowledge Creation

The PI is highly active and has published over 50 journal articles. The Co-PI has published numerous papers on previous Javits projects. Javits funds will allow for the creation of knowledge specifically on how to effectively identify and serve the targeted gifted population.

4.C.2. Procedures for Feedback and Continuous Improvement Targeted Outreach Recruitment

Surveys that gather satisfaction, understanding, and action-taking by participating families will be used to gauge effectiveness and how the sessions should be improved. All parts of the recruitment that receive lower than 90% satisfaction will be amended to improve satisfaction levels. Similarly, student enrollment and performance on above-level tests from the schools/districts served will be tracked as an indirect assessment. If student enrollment numbers and performance on above-level tests do not improve, the recruitment methods will be amended.

Targeted Services

The annual creation of new cohorts allows for the project to regularly incorporate feedback. Because WKU CGS does not rely on a larger bureaucracy; we are able to change procedures when the situation dictates. For example, online independent mentorship was originally part of the suite of services. Evidence suggested it was not effective at sustaining engagement, so it was replaced with Virtual Discovery. If the outcome data suggest that Virtual Discovery is not effective, it will also be discontinued as a service.

Similarly, the computer science-based CAMP DISCOVER and Virtual Discovery experiences will rely on student performance and feedback to evolve to deliver appropriately challenging, engaging experiences that foster long-term academic engagement.

Targeted Outreach Training

Surveys that gather satisfaction, understanding, and action-taking by participating educators will be used to gauge effectiveness as well as how the sessions should be improved. All parts of the training that receive lower than 90% satisfaction will be amended to improve satisfaction levels. Similarly, student gifted identification numbers in outreach training treatment schools will be tracked as an assessment. If student identification rates do not improve, training methods will be amended.

4.D Project Services

4.D.1. Quality of Services

1. Identification of gifted students in rural areas and high-poverty schools.

Duke TIP had a 40-year history of working with schools to identify academically talented students. Since its founding, Duke TIP has served nearly 3 million students, including nearly 100,000 in 2018. Of those, about 24% were eligible for free/reduced lunch. Although this means Duke TIP works with tens of thousands of students with financial need, it suggests that low-

income students are underrepresented in TIP. The Center for Gifted Studies at WKU will enhance work done with talent development, and the Javits funding will facilitate Targeted Outreach sessions to be conducted in rural areas and high-poverty schools to increase the identification of gifted students in these areas. This assures that 100% of recipients will meet the grant priorities. All recruitment materials will be translated into Spanish and made freely available online.

1.B. Targeted Services.

Project Launch Plus builds on the success of and expands the reach of Project Launch, which has been in operation for five years. Data from Project Launch clearly indicate that participation has led to a change in trajectory for students from low-income households. Participants not only benefit from participating in academic enrichment opportunities, but also continue pursuing challenging experiences.

- 47% of participants qualify for TIP summer programs (via ACT or SAT scores) compared to 32% of comparable non-Project Launch students from low-income backgrounds.
- Participants apply for subsequent engagement opportunities (CRISIS, eInvestigators, above-level testing) at significantly higher rates than non-Project Launch students.
- Participants report feeling more accepted by and connected to their peers at CRISIS than in their regular school environments and feeling that their CRISIS peers were more supportive and appreciative of their intelligence and academic talents than students at their regular schools.

2. Computer Science Engagement for gifted students in rural and high-poverty schools.

Research teams for CAMP DISCOVER focused on computer science and one or more Virtual Discovery cases involving computer science will be deployed by Year 2. These will rely on the same problem-based principles, rigor, and quality of content as existing The Center for

Gifted Studies program experiences.

3. Promote Effective Instruction of gifted students in rural and high-poverty schools.

WKU CGS has worked with partnering schools and districts for decades. The CGS offers professional learning opportunities annually, including hosting one of the longest running and largest Advanced Placement Summer Institutes. Staff have offered the Victoria Fellows for a cadre of school superintendents, become members of the Equity Cadre for the Kentucky Association for School Boards, developed cadres of elementary and middle school principals, and worked to get gifted education included in professional learning requirements for members of School Council members. Additionally, for the last three years, The PI has been invited to present to the Council of State Directors of Programs for the Gifted at their annual retreat and helped plan and execute North Carolina's professional development sessions for its public school AIG coordinators. The PI is also partnering with North Carolina's Department of Public Instruction to publish a guide to Equity and Excellence. The PI is also working with a Task Force for the state of Idaho reviewing their manual on gifted education. These activities illustrate that the PI's training is considered excellent by the field. All Targeted Outreach Training sessions will be conducted in districts that are in rural areas and have high-poverty schools. This assures that 100% of recipients will meet the grant priorities. Additionally, all training materials will be made freely available online.

3.B. Create new knowledge through experimentally designed research. All research products will be submitted to peer-reviewed academic journals (e.g., *Gifted Child Quarterly*, *Journal of Advanced Academics*) to assure that they meet the highest standards of academic research.

4.D.2. Equal Access

Project Launch Plus is targeted to serve students who qualify for free and reduced meals,

an underrepresented population in gifted services. Project funds will not be spent on any other students. Although not directly targeted through the project, because students of color are disproportionately represented in the population of students who are eligible for free and reduced meals, they will also be disproportionately likely to benefit.

To assure fair access and treatment of project participants, The Center for Gifted Studies offers priority course enrollment to project participants. Additionally, program site staff are not told which students have financial need. These actions assure that project participants are treated the same as all other participants.

To ensure equal access for students who are twice-exceptional, students with documented learning disabilities are eligible to receive testing accommodations. Whether they receive accommodations for testing is not a consideration for eligibility or participation.

4.D.3. Impact of Project Services

The expected impact of **Targeted Outreach Recruitment** includes 60 sessions given to 3,000 parents and the identification of at least 800 more academically talented students from RaHPS. **Targeted Services** expect to enroll 555 students in high dose engagement opportunities, 600 in low dose engagement opportunities, and thousands more with email nudges. We expect 90% to complete CAMP DISCOVER and 70% to complete Virtual Discovery and 95% of those who complete to demonstrate success in their performance in engagement opportunities. Participating families will be better able to advocate for their child and participants will: show high engagement in programs; have successful experiences in engagement opportunities; demonstrate sustained academic engagement behaviors; [apply to more selective college than comparable peers](#).

To **Promote Effective Instruction** of gifted students in rural areas and high-poverty

schools, we will provide 60 outreach recruitment sessions to 3,000 educators, leading to greater use of effective gifted identification and service practices in schools.

The expected impact of Project Launch Plus extends beyond the impact on its participants. The Knowledge Creation component will inform the world about how to more effectively provide interventions to maximize long-term academic engagement. Nobel Prize winning economist James Heckman has long shown that the “return on investment” for educational interventions is generally much higher in relatively younger individuals (<https://heckmanequation.org/>). It is our belief that Javits funding of Project Launch Plus has the potential to lead to outsized impact on the academic trajectory of its participants.

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