



# **Increasing College Access Network**

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## **Response to Notice Inviting Applications**

Education Innovation and Research (EIR) Program—Early-Phase Grants  
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### **Prepared for**

Office of Elementary and Secondary Education  
Department of Education

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## **Increasing College Access Network (ICAN)**

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## INTRODUCTION

The *Increasing College Access Network (ICAN)* project, led by *Jobs for the Future (JFF)* in partnership with the *Greater Twin Cities United Way (GTCUW)* and *The Learning Accelerator (TLA)*, with the *American Institutes for Research (AIR)* as evaluator, will improve educational outcomes for high-need high school (HS) students, defined as low-income and/or students of color, by implementing high-quality dual enrollment (DE) across the state of Minnesota (MN). ICAN will implement a ground-breaking model—called ***ICAN courses***—that will: 1) offer a high-quality, scalable, online DE option in core college math and English courses; and 2) deliberately incorporate social-emotional learning (SEL) to improve the effectiveness of online instruction and support perseverance and completion. DE is a proven strategy for increasing college and career readiness (CCR) and improving educational outcomes in both HS and college; online DE courses will greatly expand high-need students’ access to this evidence-based intervention, while integrating SEL in these courses will position students for success in online course-taking. The ICAN partners will provide a cohort of HS and their college partners with funding and technical assistance (TA) to implement ICAN courses. AIR’s evaluation will test the impact of ICAN on CCR and SEL skill attainment. ICAN will generate a suite of tools, resources, and publications to help the field replicate and adapt ICAN courses.

Our proposed Education Innovation and Research project addresses ***Absolute Priority 1—Applications that Demonstrate a Rationale***. ICAN courses will increase access, especially for high-need students, to DE, which allows HS students to earn HS *and* college credits simultaneously. Based on a February 2017 What Works Clearinghouse (WWC) Intervention Report, there is a medium to large extent of evidence showing the positive effects of DE across a range of student outcome domains in secondary and postsecondary education, including college access, enrollment, and degree attainment; credit accumulation; HS completion; and HS general

academic achievement.<sup>1</sup> Offering DE coursework online has the potential to significantly increase access for students who encounter barriers (e.g., competing schedules, transportation needs) to participation in in-person DE courses. Because ICAN is designed to increase underserved students' access to rigorous and engaging teaching and learning in high-quality DE courses, ICAN addresses ***Competitive Preference Priority 3—Promoting Equity and Adequacy in Student Access to Educational Resources and Opportunities.***

ICAN also addresses ***Absolute Priority 4—Field-Initiated Innovations—Fostering Knowledge and Promoting the Development of Skills That Prepare Students To Be Informed, Thoughtful, and Productive Individuals and Citizens.*** ICAN will create and coordinate SEL supports for students participating in online DE and provide resources, tools, and training for educators. Because online learning requires more independent work, students need more support to trigger active engagement, reflection, self-monitoring, and self-regulation.<sup>2</sup> Design and delivery strategies that focus on SEL skills, including fostering metacognition, goal orientation, reflection, and growth mindset, will support students to effectively engage in DE courses.<sup>3</sup> ICAN will build the capacity of schools to increase student achievement across five SEL skills: 1) positive personal relationships with others; 2) determination, perseverance, and the ability to overcome obstacles; 3) development of self-esteem through perseverance and earned success; 4) problem-solving skills; and 5) self-regulation in order to work toward long-term goals.

## **A. SIGNIFICANCE**

**A.1. Development or Demonstration of Promising New Strategies.** ICAN will develop and demonstrate a new strategy and associated intervention—ICAN courses—that builds on three existing evidence-based strategies: DE, online learning, and SEL. By braiding these strategies, ICAN will increase knowledge of strategies that address two of our most urgent educational

problems: 1) the deep inequities in access to, and engagement and success in high-quality DE that increase CCR; and 2) the lack of SEL supports that amplify authentic learning.

DE. The WWC evidence base is unassailable: DE is one of the most powerful interventions to improve educational outcomes, especially for high-need students. The WWC evidence for DE is strong in a variety of outcome domains, including improving college degree attainment, college access and enrollment, credit accumulation, and completing HS.<sup>4</sup> But too many students lack equitable access to DE because of: 1) transportation and geographic constraints; 2) limited number of DE courses available; 3) lack of funding that would make DE courses free or affordable; 4) college faculty's reticence about enrolling HS students; 5) lack of HS teachers qualified to teach DE; and 6) conflicts between HS and college academic scheduling and calendars. ICAN addresses these constraints and makes DE available to more students by offering DE courses at no cost to students in an online format, thereby removing geographic barriers and creating needed flexibilities in staffing and scheduling. By focusing on DE in core college math and English courses, ICAN ensures that students earn college credit in courses applicable to a wide variety of postsecondary degrees and credentials.

Online learning. ICAN also leverages the most promising strategies for delivering high-quality online learning, which builds on the features of effective in-person instruction while meaningfully addressing its challenges and leveraging its benefits to meet students' needs. Online learning offers clear advantages in terms of scale and accessibility (access, flexibility, convenience), and has potential design advantages that include opportunities for personalization, intervention through credit recovery and accelerated learning, and standardization (typically difficult when seeking to scale face-to-face experiences across multiple instructors). Offering learning opportunities online can support access to materials, practice, and collaboration outside of school hours. Online environments can reduce risk and bias in participation both by

downplaying individuals' physical differences (e.g., gender, age, race, or disability) that may affect others' responses to them and by offering greater inclusion for learners with special needs (either cognitive or accessibility).<sup>5</sup> To realize these advantages, online learning must not simply replicate face-to-face settings, which tends to result in worse student outcomes. Online courses must trigger active engagement, reflection, self-monitoring, and self-regulation.<sup>6</sup> Educators can proactively establish explicit expectations and support for independent learning to set up a foundation for engaging online, including: improving clarity of course objectives, expectations, and structures; helping students establish routines for time and information management; providing pre-assessments to help students understand existing levels of mastery and set goals; and helping students build processes for peer engagement and help-seeking.<sup>7</sup> ICAN's new strategy builds on research regarding high-quality online learning by embedding SEL strategies within online DE course design. ICAN will support educators to proactively, intentionally, and consistently design online course experiences in ways that embed, engage, and build students' SEL skills to ensure they can persevere and succeed.

SEL. As we shift to online DE courses, ICAN will transform pedagogy to account for the social and emotional needs of students learning in a virtual environment. The SEL skills we will focus on include: positive relationships; determination, perseverance and overcoming obstacles; self-esteem; problem-solving; and self-regulation to work toward long-term goals. Implementing SEL strategies improves mental health, social skills, and academic achievement—and even in virtual settings, studies demonstrate that “positive interactions between instructors and peers can reinforce their emotional and social bonding as well as their attachment to their online learning program.”<sup>8</sup> SEL skills build CCR by reinforcing critical thinking, self-management, responsible decision-making, and problem-solving.<sup>9</sup> ICAN will build on existing SEL strategies by training ICAN course educators to develop and execute learning design and delivery strategies that

support students to build and use SEL skills effectively and engage "in the moment," including pedagogical strategies that support active engagement with rigorous content in support of mastery (including fostering metacognition, goal-orientation, reflection, and growth mindset), as well as features that build supportive relations, such as strategies that build connections between peers and personalization (such as goal-setting, meaning-making, and effective self-regulation).<sup>10</sup>

ICAN's new strategy therefore builds on the existing evidence base for DE, online learning, and SEL and will demonstrate the amplified success of programming that combines these three strategies. ICAN will generate a set of valuable and relevant tools and resources to help the field replicate online DE practices with strategies that embed potent SEL skills. ICAN will contribute to knowledge and evidence about how to expand online courses so that students, especially high-need students, achieve higher rates of success. ICAN's proposed intervention builds from the literature about how to improve online course success by incorporating structured instructor and peer interaction—and testing how this can be enhanced by integrating SEL strategies that explicate and embed the power of meaningful social interactions within online modes of delivery. In addition, while the shift to online learning during the pandemic led to a fast-evolving set of SEL resources and recommended practices, K12 *and* college instructors generally found the shift to online learning very challenging. ICAN is designed to demonstrate that students' SEL skills can and should be built through online instruction, improving its success across secondary and postsecondary learning. Finally, although the research is clear about the effectiveness and benefits of DE, less is known about how variations in the design of DE affect student outcomes. Most research has considered the effects of delivery location—on a high school or college campus—and whether it is taught by full-time college faculty versus adjunct college faculty who may be full-time high school teachers. This project would round out such foci by exploring the relative effectiveness of DE delivered online.

**A.2. Dissemination.** ICAN partners will create and disseminate two key documents to guide implementation and replication of ICAN courses in MN and nationally: the *ICAN Course Blueprint* and *SEL Playbook*. In addition, ICAN partners will codify the model and document best practices and lessons learned in two additional publications to support replication. All other ICAN materials, including a communications toolkit and educator- and student-facing materials, will be made publicly available. ICAN partners will disseminate these materials via their websites and social media (e.g., Twitter, LinkedIn) and will present at relevant national conferences (e.g., on DE, SEL, college and career pathways). See Goal 3 in Tables 1 and 2 for additional detail on ICAN dissemination activities.

ICAN partners are strongly positioned to disseminate these products. For nearly 20 years, JFF has worked with states across the country on DE, early college, and college and career pathways, including the design of blueprints to support scale. JFF is a founding member and steering committee member of the College in High School Alliance (CHSA), a coalition of 80+ national and state organizations supporting high-quality DE. JFF will share and leverage the lessons learned from ICAN with its network of schools, institutional- and systems-level partners, and policymakers. JFF will share ICAN resources via the CHSA, as well as JFF's national Pathways to Prosperity Network and its frequently visited websites (e.g., ptopnetwork.org, jff.org). GTCUW is well positioned to disseminate learning from ICAN across MN; it provides statewide leadership in DE and supports a network of Career Academies focused on implementing these and related strategies. TLA brings a combination of on-the-ground practice expertise and systems-level understanding to its role as a national leader in developing and scaling high-quality SEL and online learning. TLA has created over 50 training tools and research insights aimed to guide educators in classrooms and districts around the country and disseminate these resources to the over 200,000 annual users of its own website, over 400 district



support relationships, and partnership channels that create over 5.5 million teacher touchpoints yearly. AIR, a nationally recognized leader in research and evaluation, will design the evaluation to highlight and support effective replication of ICAN's core elements.

## **B. QUALITY OF THE PROJECT DESIGN**

***B.1. Conceptual Framework.*** ICAN's conceptual framework will yield an innovative approach to improving student outcomes, especially for high-need students, by uniting effective strategies for DE, online learning, and SEL (see section A.1.) and leveraging the expertise and networks of the ICAN partners to *redesign DE courses, embed SEL strategies in course instruction, and provide training and coaching to educators* throughout the project. Our logic model, included in Appendix G, depicts how our multi-pronged approach will: 1) develop innovative ICAN courses and support HS and colleges in implementing the model to improve student outcomes; 2) provide educators with resources, tools, and training to increase students' SEL skills attainment and success in online course-taking; and 3) build capacity to sustain and support replication of the ICAN model beyond the project period.

*Redesigning DE.* ICAN will support HS and colleges in redesigning traditional, in-person DE models that have historically left too many students behind. ICAN courses will keep what works in traditional DE but transition the courses to an online environment that uses tech-savvy methodologies and supports for instructors to design DE that overcomes barriers, including those related to geography and cost, often encountered by high-need students.

This redesign will be accomplished through three activities: ***1) Select an ICAN cohort of 20 HS.*** The ICAN partners will select an ICAN cohort through a competitive process open to GTCUW's network of school and district partners, with a preference for those serving a large proportion of high-need students. HS will be required to apply with their college partners and offer existing DE courses in college math and English. Because GTCUW has, for six years,

funded and supported innovation and quality in DE at their partner HS, selecting HS from this network provides assurance that schools will be positioned to successfully implement ICAN courses. **2) Develop an ICAN Course Blueprint** which will provide a framework—including quality indicators—and key design considerations for the development and implementation of ICAN courses. **3) Develop a communication toolkit** for parents and students to instill confidence in the quality of online DE. Surveys show that 58% of parents would like to choose between remote and in-person models in the 2021-22 school year<sup>11</sup> and most parents want districts to invest in better digital materials, more school options, and access to college credits and career education.<sup>12</sup> The communication toolkit will build demand for online learning options and give parents and students the assurance they need to confidently enroll in online DE.

**Embedding SEL.** In addition to redesigning DE, the ICAN model calls for educators to support students to build and use SEL skills effectively. During COVID, we saw many educators lacked the resources and structures to effectively design and deliver online courses, and many students fell behind in foundational academic skills. As noted above, ICAN will support educators in the implementation of pedagogical strategies that support active engagement with rigorous content and strategies that build connections between peers and personalization.

Embedding SEL will be accomplished through two key activities: **1) Create an SEL Playbook and related materials**, which will be a user-centered toolkit for DE educators to help them design and deliver ICAN courses that provide clear, concrete strategies, with templates and examples, for embedding SEL in DE online courses. Guidance will address upfront design and in-time instructional approaches for helping students effectively create positive personal relationships with peers, reflect and self-regulate based on learning goals and progress, and effectively self-direct their learning to exhibit determination, perseverance, and problem-solving in order to overcome obstacles. **2) Develop frameworks to guide the design of TA** that is

complementary to the *SEL Playbook* and modules and will guide trainers on supporting educators to embed SEL strategies in DE courses during the grant implementation and will be replicable for trainings beyond the grant period.

*Training and Coaching Educators.* ICAN will provide regular TA and training to educators as they design and deliver ICAN courses. TA will begin in Year 2 with large group trainings on redesigning DE and embedding SEL strategies in course pedagogy and will evolve in Years 3 and beyond to address specific problems of practice and peer learning on targeted topical areas. Training and coaching educators will be accomplished through: **1) *Facilitate train-the-trainer sessions for implementing TA locally***, leveraging the national expertise of TLA and building the capacity of GTCUW staff to provide TA to educators during and beyond the grant period. **2) *Provide foundational and real-time TA to educators*** through office hours, formal check ins, and trainings on specific topics. TA will be both proactive, as schools redesign DE courses and embed SEL strategies, and reactive, through individualized TA on topical problems and practice during course delivery. **3) *Annual individualized site visits and community of practice convenings*** to engage directly with schools on meeting goals and objectives, provide customized TA, and facilitate peer learning.

**B.2. Measurable Goals, Objectives, and Outcomes.** ICAN will create and implement an entrepreneurial, evidence-based, field-initiated innovation that will promote equitable access to rigorous and engaging DE courses and measurably improve achievement and attainment for high-need students. In Years 1 and 2, ICAN will establish a baseline for performance to measure overall progress over the five-year grant period, as reflected in the goals, objectives, and outcomes in Table 1 below (as numbered in the Project Objectives and Performance Measures Form, which also includes performance measures aligned to the goals, objectives, outcomes).

***Table 1. ICAN Measurable Goals, Objectives, and Outcomes***

<p><b>Goal 1.</b> Design and implement ICAN courses to increase <i>high-need students’ access to, participation in, and academic achievement</i> in online DE courses in college math and English</p>
<p><b>Objectives. 1:</b> Develop and implement ICAN courses that provide access to online DE in core courses and embed SEL strategies; <b>2:</b> Increase the number of high-need students who enroll in and successfully complete online DE in core courses; <b>3:</b> Increase academic achievement for high-need students; <b>4:</b> Increase CCR of high-need students; <b>5:</b> Increase students’ and families’ understanding of the value of ICAN courses</p>
<p><b>Outcomes. 1:</b> All participating schools are offering high-quality ICAN courses; <b>2:</b> ICAN courses are implemented in diverse school settings, including urban, suburban, and rural areas; <b>3:</b> High-need students are enrolling in and successfully completing ICAN courses at rates proportionate to their overall enrollment; <b>4:</b> ICAN courses foster CCR and success for high-need students; <b>5:</b> High-need students get a head start on postsecondary degrees and credentials by earning college credit in high school</p>
<p><b>Goal 2.</b> Increase <i>high-need students’ attainment of SEL skills</i> by building the capacity of educators to incorporate strategies that teach SEL skills in ICAN courses</p>
<p><b>Objectives. 6:</b> Increase the number of educators trained to embed strategies to teach SEL skills in ICAN courses; <b>7:</b> Increase student attainment of SEL skills; <b>8:</b> Create spaces for schools to learn from best practices and from one another; <b>9:</b> Increase the relevance of ICAN courses by including student and family perspectives in programmatic design</p>
<p><b>Outcomes. 6:</b> Students possess critical SEL skills, including: a) positive personal relationships with others; b) determination, perseverance, and the ability to overcome obstacles; c) self-esteem through perseverance and earned success; d) problem-solving skills; and e) self-regulation in order to work toward long-term goals; <b>7:</b> ICAN schools consistently</p>

offer online DE that supports student success by incorporating SEL; **8:** Educators consistently use best practices to embed strategies to teach SEL skills in ICAN courses; **9:** High-need students have access to engaging learning environments

**Goal 3. Codify and disseminate ICAN best practices**

**Objectives. 10:** Document the creation and implementation of ICAN to improve academic achievement, CCR, and SEL skill attainment for high-need students; **11:** Develop tools and resources for replication; **12:** Share ICAN processes, practices, and findings nationally, with active outreach to education leaders in other states and regions

**Outcomes. 10:** ICAN inspires and informs the development of scaling strategies for online DE courses with embedded SEL in other states and regions; **11:** ICAN expands the evidence base about effective practices to improve the educational outcomes of high-need students and creates actionable tools and resources for policymakers and practitioners; **12:** SEL strategies are utilized in online learning nationwide

**B.3. Addressing the Needs of Target Population.** The priority population of ICAN is high-need HS students in MN, especially students from low-income households and students of color. MN has significant gaps in student outcome measures when disaggregated by race and socioeconomic status.<sup>13</sup> Of MN HS students, only 56% of American Indian students, 69% of Black students, and 70% of Hispanic students graduated on time, compared to 89% of white students.<sup>14</sup> In 2020, only 72% of students who were eligible for free and reduced-price lunch graduated from HS in four years, as compared to a 93% of non-eligible students.<sup>15</sup> The HS graduation rate was 50% for students who were homeless or in unstable housing situations.<sup>16</sup> The 44% college graduation rate for students of color at state postsecondary institutions in MN is substantially lower than the average rate of 59% for their white peers. At all four-year institutions in MN, the graduation rate for students of color is 55%, compared to 67% for white

students.<sup>17</sup> Data on the importance of postsecondary credentials within MN's labor market highlights the urgency of improving the educational outcomes—particularly postsecondary attainment—of high-need students. By 2025, MN is projected to have 317,000 unfilled jobs<sup>18</sup>; over 68% of jobs paying family sustaining wages<sup>19</sup> require education and training<sup>20</sup> beyond HS.<sup>21</sup>

DE is a proven strategy for improving educational outcomes—in HS and college—for students from low-income households and students of color. Yet in 2017, the participation rate of students of color in DE courses in MN was 15.8%, though 31.5% of MN students are students of color. Similarly, 18.5% of students in DE classes qualified for MN's free and reduced-price lunch, though the average rate of enrollment in the program is 38.5%.<sup>22</sup> In addition, access to DE courses is frequently limited or nonexistent for the many students, especially high-need students, who lack the transportation needed to attend class on a college campus.

ICAN's focus on core college math and English courses addresses inequities in developmental education. ICAN targets core courses because many students who enter college must take remedial, non-credit bearing courses in math and English before even starting their formal degree programs, which increases the time and cost associated with earning a credential. Students who participate in developmental education have lower credential completion rates than their non-participating peers.<sup>23</sup> In 2019, 17% of MN HS graduates enrolled in developmental education for an average of 5.22 credits. The data shows inequities by race and income: 38% of Black students enrolled in developmental education, as did 29% of Hispanic/Latino students, 25% of American Indian or Alaska Native students, and 21% of Asian students. Only 13% of white students enrolled. Further, white students enroll in an average of 4.55 credits for developmental education, but students of color enroll in an average of 6 credits. Thirty-one percent of graduates eligible for free or reduced-price lunch in HS enrolled in developmental education, compared to 13% of ineligible students.<sup>24</sup>

ICAN courses build on the research that demonstrates that participation in DE reduces student enrollment in developmental courses.<sup>25</sup> Completing "gatekeeper" courses in HS prepares students—especially the high-need students most likely to end up in developmental courses—for a more seamless transition to college and saves them time and money because they have already earned college credit. Additionally, MN Transfer Curriculum, accepted by all MN state colleges and universities, includes core math and English courses in the ten goal areas.<sup>26</sup> This transfer policy allows students more options in continuing their education, and successful completion of the MN transfer curriculum earns a student access to the MN Cooperative Admissions program, guaranteeing admission to several programs within the University of Minnesota.<sup>27</sup>

Incorporating strategies to embed SEL skills into online DE also addresses challenges faced by high-need students. Four out of every ten MN public school students are eligible for free and reduced-price lunch;<sup>28</sup> and the student-counselor ratio in MN is 792:1.<sup>29</sup> Providing strong support services is imperative for any education program, and embedding effective SEL practices in online DE will ensure that students' social and emotional needs are addressed.

## **C. ADEQUACY OF RESOURCES AND QUALITY OF THE MANAGEMENT PLAN**

**C.1. Achieve Objectives.** The ICAN partners are highly qualified for their roles in executing ICAN's goals and objectives. The organizational chart (Attachment J) shows their ICAN reporting relationships. **JFF** will manage and oversee ICAN; leverage its national expertise in DE, college access and completion, and systems design to create ICAN courses that lead to postsecondary credentials; administer the competitive HS selection process, and create an *ICAN Course Blueprint*; lead delivery of TA and coaching to ICAN schools; and lead codification and dissemination efforts. **GTCUW** will leverage its local expertise in DE and related college and career readiness strategies; lead annual site visits and provide TA to ICAN partners; deliver SEL training to educators; and lead student focus groups and the development of a communications

toolkit. **TLA** will leverage its national expertise in SEL and online learning to serve as a research and design partner to create the *SEL Playbook*; develop training plans, materials, and modules to be utilized in a research-based professional development program offered through a “train-the-trainer” approach; iterate and improve on recommended practices and related supports based on participant feedback; and share learning to improve implementation across the field. **AIR**, the independent evaluator, is one of the largest social and behavioral research firms in the country, and currently serves as the evaluator of numerous EIR early-phase and mid-phase projects.

**Table 2. Activities, Milestones, Timeline (by Year and Quarter), and Responsibilities**

<b>Milestones</b>	<b>Date Due</b>	<b>Responsible Parties (Lead in bold)</b>	<b>Objectives/ Performance Measures</b>
<b>Goal 1. Design and implement ICAN courses to increase <i>high-need students’ access to, participation in, and academic achievement</i> in online DE courses in college math and English</b>			
Design selection process, with preference for high-need students, for 20 ICAN schools	Y1/Q1-2	<b>JFF</b> , GTCUW	1. 1.a.; 1b.
Select schools and award funding	Y1/Q3-4	<b>JFF</b>	
Create ICAN Blueprint; revise annually	Y1/Q1-3; Y2-5/Q4	<b>JFF</b>	2.; 3.; 4. 2a.; 2b; 3a.; 4a.
Conduct annual individual site visits	Y2-Y4/Q3-4	<b>GTCUW</b> , JFF	
Create school-level data dashboards	Y4-Y5/Q1-2	<b>AIR</b>	
Develop a communications toolkit	Y1-Y3/Q3-4	<b>GTCUW</b>	5. 5a.; 5b.



Goal 2. Increase <i>high-need students' attainment of SEL skills</i> by building the capacity of educators to incorporate strategies that teach SEL skills in ICAN courses			
Create SEL playbook; revise annually	Y1/Q1-3; Y2-5/Q3	TLA	6. 6a.; 6b.
Develop professional development framework	Y1/Q1-2		
Design user materials to implement ICAN	Y1/Q2-3		
Design training roadmap for GTCUW staff; revise annually	Y1/Q2-3; Y3-5/Q3		
Facilitate train-the-trainer sessions	Y2-Y3/Q3	TLA, GTCUW	
Train ICAN schools and provide coaching	Y2/Q3-Y5/Q2	GTCUW, TLA	
Collect data on ICAN school trainings	Y2-Y5/Q1-4	TLA	
Administer SEL skills surveys	Y3-5/Q2	AIR	7.; 7a.
Host annual Community of Practices	Y3-5/Q1	JFF	8.; 8a.
Facilitate student focus groups	Y2-Y5/Q1	GTCUW	9.; 9a.
Analyze student feedback	Y2-Y5/Q2	GTCUW, TLA	
Goal 3. Codify and disseminate ICAN best practices (see section A.2. for more detail)			
Publish <i>ICAN Course Blueprint</i> and <i>SEL Playbook</i> to support replication	Y5/Q4	JFF, GTCUW, TLA	10.; 10a.
Document ICAN in two publications	Y3-5/Q1-4		11.; 11a.
Present at two national conferences	Y3-5/Q1-4		12.; 12a.
Highlight ICAN on national websites	Y3-5/Q1-4		
Project Planning, Implementation, and Monitoring (see Section C.4. for more detail)			
Develop detailed project work plan; update annually	Y1-Y5/Q1	JFF	

Hold bi-weekly Technical Assistance Team mtgs.	Y1-5/Q1-4	<b>JFF</b> , GTCUW, TLA
Hold monthly Project Leadership Team/AIR mtgs.	Y1-5/Q1-4	<b>JFF</b> , GTCUW, TLA, AIR
Send quarterly email to all ICAN schools	Y2-5/Q1-4	
Review formative evaluation conducted by AIR	Y3-5/Q1	<b>AIR</b> , JFF, GTCUW, TLA
Hold annual all-partner summative evaluation mtg.	Y3-5/Q1	

**C.2. Qualifications of Key Personnel.** Each ICAN partner brings a highly qualified team with exceptional capacity, deep expertise, and the reach needed to successfully implement and scale ICAN. **JFF's team** includes multiple national experts in DE and innovative systems design; the team also has extensive experience managing EIR awards and other federal grants and contracts. The **ICAN Project Director**, [REDACTED] (Director, JFF; M.P.P., Brandeis University) leads a portfolio of work focused on providing TA to support scaling DE and early college; she has experience leading implementation of mid- and early-phase EIR grants. [REDACTED] (VP, JFF; Ed.D., Harvard University), who will provide executive leadership, has led JFF's work on DE and early college for two decades and is a nationally recognized expert. [REDACTED] (Associate Director, JFF; M.A., University of Chicago) has deep expertise in DE models that equitably serve high-need students and has conducted extensive research on DE teacher credentialing in MN. [REDACTED] (Senior Program Manager, JFF; M.P.P., Simmons University) brings experience in leading the day-to-day management of Lone Star STEM, a mid-phase EIR grant awarded to JFF in 2018. GTCUW's team will be led by [REDACTED] [REDACTED] (Senior Program Officer, GTCUW; M.A., St. Mary's University), who leads GTCUW's DE and Career Academies work with a focus on equity; she previously worked in DE at Minneapolis Community and Technical College. [REDACTED] (Program Officer, GTCUW; M.A., Harvard University), is an expert in SEL and career pathway coaching. **TLA's team** will be led by [REDACTED] (CEO, TLA; Ed.L.D., Harvard University), a nationally recognized

and published expert on education innovation; technology-supported learning models, such as blended and personalized learning; and educator talent systems. [REDACTED] (Managing Partner, TLA; M.Ed., Loyola Marymount University) is an expert in blended and personalized learning as well as effective online/remote professional development and leads TLA's practitioner learning work. The **AIR team** will be led by [REDACTED] (Senior Researcher, AIR; Ph.D., University of Chicago), who will serve as **Principal Investigator** for the ICAN evaluation. She is a WWC-certified reviewer and an expert in DE, CCR, and program evaluation, with extensive experience conducting EIR evaluations. [REDACTED] (Researcher, AIR; Ph.D., University of Wisconsin—Madison), who will serve as implementation evaluation lead, is an expert in CCR with more than 11 years of experience in mixed-methods research.

**C.3. Reasonableness of Costs.** Project costs are reasonable given the depth of direct support and TA provided to educators and schools, the frequency of meetings to accelerate learning, the development of tools and resources that will be publicly available for replication in the field, and the rigorous evaluation design that will test the efficacy of the project's activities. ICAN will support the development of strategies and solutions that lead to increased efficiency and to state and national scale. As such, project costs are also an investment in the development of vetted practices, tools, strategies, and resources that will sustain, scale, and replicate the goals of this project beyond the grant period in MN and beyond (see Section A.2.).

Cost effectiveness is also incorporated in the project design; both SEL and DE provide substantial returns on investment. A study of the economic value of SEL found that, on average, SEL programs have an 11:1 return on investment.<sup>30</sup> DE offers students and their families substantial savings on tuition costs. Over the last six years, GTCUW has, through its Career Academies (CA) initiative, invested \$10M and 350 hours of advisement and TA to support 40 pathways and 16 school districts, 100 percent of which are still in operation. GTCUW will

provide the 10 percent match for ICAN via continued CA funding, increasing the impact of ICAN and the DE cost savings seen in the CA initiative, through which over 12,000 students across 16 school districts have earned a collective 9,891 college credits and 271 industry credentials, saving students over \$3.5 million in tuition costs. GTCUW works with districts to help them maximize available local, state, and federal resources, and apply philanthropic investments in targeted areas of need. ICAN's goal is to apply this same level of TA and advisement to ensure the project lives well beyond this investment. ICAN will provide financial support to HS and colleges for investment in educator professional development, technology, and other start-up costs that will have benefits beyond the project period.

Costs for the project are reasonable on a per-student basis. During the project period itself, ICAN will serve about 1,200 students—an average cost of \$3,333 per student, a highly reasonable cost given the likely impact of ICAN on student outcomes and postsecondary attainment. In addition, ICAN will result in substantial tuition cost savings to ICAN students. In 2019, the average cost of a single college credit in MN was \$344,<sup>31</sup> and each ICAN course will be worth at least 3 credits, so each ICAN student can save over \$1,000 in tuition costs, for a total of \$1.2M in savings for ICAN students during the project period.

***C.4. Feedback and Continuous Improvement.*** The ICAN partners are committed to ensuring feedback and continuous improvement through: 1) ICAN's yearly formative evaluation structure; and 2) regular communications, ongoing collaboration, and routines for seeking and using feedback, input, and data to strengthen operations. The ICAN **Technical Assistance Team** will hold bi-weekly meetings to address project management and implementation issues. An ICAN community of practice (CoP) will annually convene virtually, sharing successes and challenges and discussing feedback for improvement. Other feedback will include at least once monthly ***formal and informal inquiry processes*** with ICAN HS, seeking their feedback regarding any

barriers or difficulties experienced in planning and implementation, as well as recommendations for improvement. A *quarterly email* to all ICAN HS and colleges will provide updates and welcome feedback. ICAN partners will use a “+/ $\Delta$ ” *protocol* after all TA sessions and formal meetings, during which participants will briefly brainstorm what went well (“+”) and what could be changed and improved (“ $\Delta$ ”) to inform future work. AIR will conduct a *formative evaluation each year* to provide the Project Leadership Team with data to be used to determine whether ICAN is meeting its quantitative performance measures and with information on how schools are implementing ICAN. Formative evaluations will create feedback that informs real-time improvements for the next implementation year. The routines for gathering feedback and deciding on improvements will be integrated into monthly **Project Leadership Team** meetings that will review progress towards goals, objectives, and outcomes and will include a regular agenda item focused on continuous improvement. Finally, AIR will hold an *annual all-partner summative evaluation meeting* to review and discuss the annual evaluation report.

#### **D. QUALITY OF THE PROJECT EVALUATION**

AIR will conduct a rigorous, independent evaluation of ICAN that will (a) provide formative feedback to guide program development, (b) measure the extent to which ICAN is implemented as intended, and (c) estimate the impact of ICAN on students’ CCR and SEL skills. The implementation study will support continuous improvement by providing feedback to refine program components and produce measures of fidelity of implementation. A complete timeline of evaluation activities is included in Appendix J. **The impact study will use a rigorous quasi-experimental design specified to meet WWC standards without reservations.** The evaluation will address the six research questions (RQs) shown in Table D1. The RQs are aligned with the ICAN logic model (see Appendix G).

#### **Table D1. Research Questions**

Type	Research question
Confirmatory	1. To what extent do ICAN students demonstrate greater CCR (e.g., DE course grades, unweighted GPAs) than students who continue business-as-usual?
	2. To what extent do ICAN students demonstrate greater SEL skills (e.g., self-efficacy, self-regulation) than students who continue business-as-usual?
Exploratory	3. To what extent do ICAN students experience more positive online classroom environments and teacher support than students who continue business-as-usual?
	4. To what extent do ICAN students express more positive future orientation than students who continue business-as-usual?
Moderation	5. Is the impact of ICAN on students' CCR and SEL skills moderated by student and school characteristics?
Mediation	6. Does students' perception of their classroom environment and/or teacher support mediate the effect of ICAN on students' CCR? SEL skills?
	7. Is the impact of ICAN on students' college and career readiness mediated by students' SEL skills?
Implementation	8. To what extent is ICAN implemented as intended?
	9. What obstacles inhibit, and what factors enable, successful implementation of ICAN?

#### ***D.1. Evaluation Methods Designed to Meet WWC Evidence Standards Without Reservations***

Beginning in Year 2, AIR will conduct an evaluation using a rigorous experimental design that **meets WWC standards without reservations** (see Appendix J). The impact study, which will be used to address RQs 1–4, will examine the effect of ICAN on Grade 11 and 12 students'

CCR, SEL skills, online classroom environments, teacher support, and future orientation. The RQs will be addressed through a cluster RCT, with HS as the unit of assignment. A total of 20 HS will be recruited to participate in the study, as described in Quality of the Project Design. Only HS currently offering DE courses in English (Grade 11) and math (Grade 12) will be eligible to participate in the Project.<sup>32</sup> HS will be randomly assigned to either the English or the math treatment condition within district blocks. HS assigned to one condition will serve as the comparison for the opposite condition.<sup>33,34,35</sup> Participating schools are expected to have at least 20 students in the appropriate grade enrolled in each DE course each year.<sup>36</sup> The evaluation will include two cohorts of students within each participating HS. During the final year of the project, participating HS will receive the treatment for which they served as the comparison.<sup>37</sup> Based on a statistical power analysis, the evaluation has a minimal detectable effect size (MDES) of 0.28 (see Appendix J).

Data. To conduct the analyses, AIR will obtain student-level records from the district offices of participating schools and school-level records from the Minnesota Department of Education website. In addition, AIR staff will administer student surveys. **The proposed survey scales are aligned with the SEL goals for EIR-funded projects** and were adapted from previously administered and validated survey scales (see Appendix J).<sup>38</sup> Outcomes for the confirmatory and exploratory analyses are shown in Table D3. **All confirmatory outcome measures meet WWC face validity, reliability, and outcome measure requirements.**<sup>39, 40</sup>

**Table D3. Impact Evaluation Outcomes**

WWC domain	Outcomes	Grade 11	Grade 12
<b>College and career readiness (Confirmatory)</b>			

Academic achievement	Unweighted high school GPA	X	X
Academic achievement	DE English course grades	X	
Academic achievement	DE math course grades		X
School attendance	Student attendance in DE courses	X	X
<b>SEL skills (Confirmatory)</b>			
Interpersonal competencies	Self-regulation scale ( $r = 0.82$ )	X	X
Interpersonal competencies	Self-efficacy scale ( $r = 0.85$ )	X	X
Interpersonal competencies	Academic self-esteem scale ( $r = 0.85$ )	X	X
<b>Online classroom environment and student future orientation (Exploratory)</b>			
School climate	Classroom environment ( $r = 0.83$ )	X	X
School climate	Teacher support ( $r = 0.80$ )	X	X
--	Future orientation ( $r = 0.85$ )	X	X

Attrition. HS attrition is expected to be low for three reasons. 1) The project team has strong relationships with the districts included in the study. 2) Receiving one of the treatments and then receiving the opposite treatment in the final year of the study will reduce attrition. This design will also assist with individual nonresponse, particularly regarding the student survey, as an agreement to participate in data collection for both conditions will be an eligibility requirement for HS.<sup>41</sup> 3) AIR will provide participating HS with school-specific reports summarizing findings from the student survey and descriptive student outcomes analyses. Finally, AIR will obtain student background and college and career outcome measures from district administrative data. As part of the application process, districts will be required to agree to provide student-level data for participating students. This will allow AIR to conduct intent-to-treat analyses (ITT) even if schools drop out of the study or students transfer out of the course or to other schools in the district. **Although attrition is expected to be low, AIR will assess baseline equivalence of**



**students in the treatment and comparison groups for all impact analyses** using measures of unweighted student GPAs (Grade 10 for English and Grade 11 for math) and student-level free and reduced-price lunch status.<sup>42</sup> AIR will assess whether treatment and control conditions differ using WWC standards with baseline equivalence estimated for each outcome analysis using the analytic sample.<sup>43</sup> To increase precision, the analytic models will include all student baseline covariates and demographic characteristics, regardless of whether the standardized mean difference meets the WWC threshold for inclusion in analytic models.<sup>44</sup>

**RQs. RQs 1–4, outcomes analysis.** AIR will use two-level, hierarchical models, with students nested within schools to estimate the treatment effects (see Appendix J for the analytic model).<sup>45</sup>

**Complete case analysis will be used to handle missing data.** Following WWC standards, the Benjamini–Hochberg correction will be used for impact analyses in which two or more confirmatory outcomes fall in the same WWC domain. **RQ 5, moderation analyses.** To address RQ 5, moderation analyses will be conducted to assess the extent to which the Project has a different impact on subgroups of students. In line with project goals, AIR will conduct moderation analyses to determine whether the program has a differential effect for Black and Latinx students and economically disadvantaged students. To conduct moderation analyses, the impact analysis models will be modified by adding interactions with the treatment indicator to the analytic model. **RQs 6 and 7, mediation analyses.** AIR will conduct mediation analyses to understand whether students’ perception of the DE classroom environment and teacher support are related to ICAN’s impacts on college and career readiness and SEL. If the study detects statistically significant impacts on students’ college readiness or SEL skills, AIR will implement the multilevel modeling procedures outlined in Krull & MacKinnon (2001) to identify whether students’ perceptions of their classroom environment are related to the key project outcomes.<sup>46</sup>

## ***D.2. Performance Feedback Periodic Assessment of Progress Toward Achieving Outcomes***

Implementation study. To answer **RQs 8 and 9**, AIR will assess program implementation across school sites. AIR will work with the project team to develop a fidelity of implementation rubric and finalize measurable thresholds for acceptable implementation during Years 1 and 2 of the Project. Data on implementation will be collected through school site visits, teacher surveys, and professional development attendance logs (see Appendix J). To assess implementation, AIR will administer an annual professional development survey to teachers to gather information about the training and professional development they received to build their online DE instructional skills and SEL skills. AIR will also conduct site visits to participating schools. During the school site visits, AIR will conduct interviews with teachers and school administrators to gather information about program implementation, professional development and training, and obstacles that inhibit and factors that facilitate successful implementation.<sup>47</sup> AIR will also conduct student focus groups and surveys during the site visits. The focus groups will be conducted with up to 10 students participating in the Project. AIR will use these groups to collect data on students' experiences with online DE and their support from their teachers and other school personnel.<sup>48</sup> All students participating in English or math DE courses in the target grades will complete student surveys containing the SEL measures as well as items asking about their future plans.

Performance feedback and assessment of progress. AIR will meet monthly with the Project Leadership Team to provide timely performance feedback on the evaluation activities and findings. During these meetings, AIR will discuss progress toward developing data collection protocols, conducting site visits, cleaning and analyzing implementation and impact data, initial findings, and any challenges encountered during the prior month. AIR will also hold an annual, formative feedback meeting with project leadership. The meeting will be held at the end of the summer, prior to the start of the upcoming school year, to provide the Project Leadership Team with formative feedback collected through interviews, focus groups, and surveys from the prior

school year that can be used to introduce any necessary changes to program implementation during the upcoming year. In addition, AIR will provide school reports for each participating school summarizing school-specific findings from the student survey and descriptive student outcomes analyses. Each year, AIR will provide the project team with a formal, annual evaluation report that provides detailed information on fidelity of implementation and quantitative findings from the impact, moderator, and mediator analyses, as available. Finally, AIR will support assessment of progress toward achieving project goals and objectives by assisting with analysis of the performance measures included in the annual performance report.

### ***D.3. Contribution of the Project Regarding Educational Problems, Issues, or Strategies***

Throughout the COVID-19 pandemic, teachers have been clamoring for professional development, resources, and strategies to help provide meaningful online learning experiences for students. Yet, even before the pandemic, teachers and administrators have scrambled to find ways to motivate students to participate and succeed in online learning. Unfortunately, the pandemic highlighted that evidence-based strategies to address these needs are in short supply. ICAN aims to fill these gaps by developing and testing professional development and coaching activities, instructional strategies, and resources teachers can use to improve students' performance in online courses, SEL skills, and CCR. In addition, DE is often in limited supply to areas without proximity to IHEs. By developing and evaluating strategies for successful online DE courses, the ICAN has the potential to reduce access gaps to DE courses. The evaluation will also generate rigorous evidence of ICAN on students' CCR and SEL outcomes, with a specific emphasis on high-need students. Combined, the implementation and impact evaluations will provide evidence to inform future adoption of ICAN on a broader scale.

## E. PROJECT NARRATIVE REFERENCES

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<sup>1</sup> *Dual Enrollment Programs*. What Works Clearinghouse, Institute of Education Sciences, 2017.

Retrieved on August 12, 2021 from:

[https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc\\_dual\\_enrollment\\_022817.pdf](https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_dual_enrollment_022817.pdf)

<sup>2</sup> *Driving Quality in Remote Learning: A framework for research-informed remote experiences for K-12 learners*. The Learning Accelerator, 2020. Retrieved on August 20, 2021 from:

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<sup>3</sup>Ibid.

<sup>4</sup> *Dual Enrollment Programs*. What Works Clearinghouse, Institute of Education Sciences, 2017.

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[https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc\\_dual\\_enrollment\\_022817.pdf](https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_dual_enrollment_022817.pdf)

<sup>5</sup> *Driving Quality in Remote Learning*.

<sup>6</sup> Ibid.

<sup>7</sup> Hung, M. L., Chou, C., Chen, C. H., & Own, Z. Y. “Learner readiness for online learning:

Scale development and student perceptions.” *Computers & Education*, 55(3), 1080-1090, 2010.

<sup>8</sup> Han, H., & Johnson, S. D. “Relationship between students’ emotional intelligence, social bond, and interactions in online learning.” *Educational Technology & Society*, 15 (1), 78–89, 2012.

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<sup>9</sup> Dymnicki, A., Sambolt, M., & Kidron, Y. “Improving College and Career Readiness by Incorporating Social and Emotional Learning.” *College and Career Readiness and Success*

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Center at American Institutes for Research, 2013. Retrieved on August 20, 2021 from:

<https://files.eric.ed.gov/fulltext/ED555695.pdf>

<sup>10</sup> *Driving Quality in Remote Learning*.

<sup>11</sup> *National Parent Union Survey*. Echelon Insights, April 2021. Retrieved on August 23, 2021

from: <https://mercuryllc.app.box.com/s/3hu9l26iucd7ug2guha6oal052sie4u7>

<sup>12</sup> *National Survey of Parents for the Walton Family Foundation*. Beacon Research, April 2021.

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<sup>13</sup> *Statewide Graduation Rate Reaches Another Historic High for Class of 2020, Dropouts*

*Decrease While Gaps Remain*. MN Department of Education, 2021. Retrieved on August 25,

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<sup>14</sup> *2020 Graduation Indicators*. MN Department of Education, 2020. Retrieved on August 24,

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[https://education.mn.gov/mdeprod/idcplg?IdcService=GET\\_FILE&RevisionSelectionMethod=latestReleased&Rendition=primary&dDocName=PROD045722](https://education.mn.gov/mdeprod/idcplg?IdcService=GET_FILE&RevisionSelectionMethod=latestReleased&Rendition=primary&dDocName=PROD045722)

<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> *Graduation Rates Data*. MN Office of Higher Education. Retrieved on August 23, 2021 from:

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<sup>18</sup> *Strategies for Addressing Minnesota's Labor Shortage*. RealTime Talent, 2019. Retrieved on August 23, 2021 from: [http://www.realtimetalent.org/wp-](http://www.realtimetalent.org/wp-content/uploads/2019/05/5.2019_RTT_LaborForceSkillGapACSTabloid.pdf)

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<sup>19</sup> Occupations having a median annual wage -as of first quarter 2019- at or above a sustainable living wage for a family of three in Minnesota, as defined by the Minnesota Department of Employment and Economic Development (\$55,548 for two adults and one child, with one adult working full-time and the other part-time).

<sup>20</sup> Vocational training includes on-the-job training, apprenticeships and certificates.

<sup>21</sup> *Jobs and Wages after College*. MN Department of Higher Education, N.d. Retrieved on August 23, 2021 from: [https://www.ohe.state.mn.us/pdf/workforce\\_infographic\\_2019.pdf](https://www.ohe.state.mn.us/pdf/workforce_infographic_2019.pdf)

<sup>22</sup> *Rigorous Course Taking: Advanced Placement, International Baccalaureate, Concurrent Enrollment and Postsecondary Enrollment Options Programs*. MN Department of Education, 2019. Retrieved August 23, 2021 from: [https://education.mn.gov/mdeprod/idcplg?IdcService=GET\\_FILE&dDocName=MDE074233&RevisionSelectionMethod=latestReleased&Rendition=primary](https://education.mn.gov/mdeprod/idcplg?IdcService=GET_FILE&dDocName=MDE074233&RevisionSelectionMethod=latestReleased&Rendition=primary)

The data in the narrative refers to students MN's concurrent enrollment program, which in MN is a DE model in which public HS students enroll in a postsecondary course taught during the regular school day and offered through a partnership between a high school and a college or university. Qualified high school instructors or college faculty may teach the course.

<sup>23</sup> *Developmental Education FAQs*. Center for the Analysis of Postsecondary Readiness, 2021. Retrieved on August 23, 2021 from: <https://postsecondaryreadiness.org/developmental-education-faqs/>

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<sup>24</sup> *Developmental Education: How many high school graduates enroll in developmental education?* Minnesota Statewide Longitudinal Data System (SLEDS), N.d. Retrieved on August 26, 2021 from:

[http://sleds.mn.gov/#developmentalEducation/orgId--999999000\\_\\_groupType--state\\_\\_ECODEVREGION--FOC\\_NONE\\_\\_devEdCOHORTID--2019\\_\\_categories--race\\_6\\_\\_p--1](http://sleds.mn.gov/#developmentalEducation/orgId--999999000__groupType--state__ECODEVREGION--FOC_NONE__devEdCOHORTID--2019__categories--race_6__p--1)

<sup>25</sup> Jenkins, D., Smith Jaggars, S., Roska, J. (2009). "Promoting Gatekeeper Course Success Among Community College Students Needing Remediation." Community College Research Center at Teachers College, Columbia University. Retrieved on August 23, 2021 from:

<http://ccrc.tc.columbia.edu/media/k2/attachments/strategies-promoting-gatekeeper-success-summary.pdf>

<sup>26</sup> *Minnesota Transfer Curriculum (MnTC)*. Minnesota Transfer, N.d. Retrieved on August 24, 2021. [http://www.mntransfer.org/students/plan/s\\_mntc.php](http://www.mntransfer.org/students/plan/s_mntc.php)

<sup>27</sup> *Office of Admissions*. MnCAP—The Minnesota Cooperative Admissions Program. Retrieved on August 24, 2021 from: [admissions.tc.umn.edu/transfer/mncap\\_intro.html](http://admissions.tc.umn.edu/transfer/mncap_intro.html)

<sup>28</sup> *Free and reduced price lunch eligibility*. MN Department of Health (2017-2018 School Year). Retrieved on August 23, 2021 from: <https://data.web.health.state.mn.us/free-reduced-lunch>

<sup>29</sup> *State Plan for the American Rescue Plan Elementary and Secondary School Emergency Relief Fund*. Minnesota Department of Education, June 2021. Retrieved on August 18, 2021 from: <https://oese.ed.gov/files/2021/07/Minnesota-ARP-ESSER-State-Plan.pdf>

<sup>30</sup> Belfield, Clive, et al. "The Economic Value of Social and Emotional Learning." *Research Gate*, Journal of Benefit-Cost Analysis vol. 6, no. 03, 2015. Retrieved on August 21, 2021 from:

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[www.researchgate.net/publication/272748098\\_The\\_Economic\\_Value\\_of\\_Social\\_and\\_Emotional\\_Learning](https://www.researchgate.net/publication/272748098_The_Economic_Value_of_Social_and_Emotional_Learning)

<sup>31</sup> Average of 2yr MnSCU, 4yr MNSCU, and U of M system. Does not account for private colleges. *Tuition, Fees and Financial Aid*. Minnesota State (2019-2020 School Year). Retrieved on August 26, 2021 from:

<https://web.archive.org/web/20200621124513/https://www.minnstate.edu/admissions/tuition.html>.

<sup>32</sup> Using opposing grades removes the possibility of students being included in both the treatment and control condition at a school and eliminates any spillover effects from participating in the treatment.

<sup>33</sup> Only students enrolled in participating schools at the time of randomization will be included in the study. Students who enroll in the dual enrollment courses after the start of the school year will not be included in the study.

<sup>34</sup> District blocks are used to balance treatment subject areas within each district and to control for differences in district context, policies, and student characteristics.

<sup>35</sup> We will use a random assignment program in R to randomize half of the schools assigned to participate in the Project for English dual enrollment, with the remaining schools assigned to the Project for math dual enrollment.

<sup>36</sup> We will include students in all online English and math dual enrollment courses offered in a school. In most schools, this will be one course per subject. In others, multiple courses per subject may be included.



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<sup>37</sup> The primary implementation and impact evaluations follow two cohorts of students in participating schools. In grant Year 5, the evaluation focuses on implementation of the dual enrollment and SEL strategies for teachers receiving the opposite treatment originally provided to the school.

<sup>38</sup> Schools applying to participate in the Project will agree to provide student-level data files. AIR will establish memorandums of understanding with participating districts to acquire data.

<sup>39</sup> Reliability estimates are only required for survey scales and tests. All other outcomes must meet WWC face validity requirements and be listed as valid outcome measures in the WWC Study Review Protocol. For information on WWC domains, see WWC Study Review Protocol, Version 1.0 (January 2021)

[https://ies.ed.gov/ncee/wwc/Docs/ReferenceResources/WWC\\_Study\\_Review\\_Protocol\\_4\\_1.pdf](https://ies.ed.gov/ncee/wwc/Docs/ReferenceResources/WWC_Study_Review_Protocol_4_1.pdf).

<sup>40</sup> Final course grades are recognized by the WWC as valid outcomes to meet WWC standards (see WWC Study Review Protocol). We include unweighted GPAs because we expect participation may lead to improvement in coursework in other classes. High school GPA, which comprises final course grades, has been shown to be a better predictor of college readiness than ACT scores (see Allensworth, E., & Clark, K. [2020]. High school GPAs and ACT scores as predictors of college completion: Examining assumptions about consistency across high schools. *Educational Researcher*, 49(3), 198–211). See WWC Study Review Protocol, Version 1.0 (January 2021).

<sup>41</sup> For surveys, students will be provided with parent opt-out forms at least one week prior to administration. Students who return signed the parent opt-out forms will not complete the survey.

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<sup>42</sup> Baseline equivalence for any outcome meeting WWC requirements, including SEL, can be demonstrated using a broad measure from the Academic Achievement domain, including GPA. See the WWC Study Review Protocol, Version 1.0 (January 2021).

<sup>43</sup> For continuous outcomes, the WWC uses the Hedges' *g*. For dichotomous outcomes, the WWC uses the Cox index. The WWC considers groups to be equivalent if the effect size differences are less than 0.05. If effect size differences are greater than 0.05 but less than 0.25, the WWC requires inclusion of the variables in the analytic models as covariates. If effect size differences are greater than 0.25, the WWC does not consider the groups to be equivalent.

<sup>44</sup> If unexpected circumstances result in higher-than-expected attrition, AIR will use propensity score matching or weighting and assess baseline equivalence to ensure the study, at minimum, meets WWC standards with reservations.

<sup>45</sup> We will use hierarchical linear models for unweighted high school GPA and survey outcomes. We will consider using hierarchical ordinal regression models for dual enrollment course grades depending on the grade distributions in the sample. This approach corrects for clustering of students within schools.

<sup>46</sup> Krull, J L, and D P MacKinnon. "Multilevel Modeling of Individual and Group Level Mediated Effects." *Multivariate behavioral research* vol. 36, no. 2, 2001, pp. 249-77. doi:10.1207/S15327906MBR3602\_06.

<sup>47</sup> Interviews and surveys will be conducted with the teacher responsible for teaching the dual enrollment classes. If the teacher is located at a community college, the interview may be conducted via video conference call depending on location. All teacher surveys will be administered online using survey software.

<sup>48</sup> Students participating in focus groups will be required to return signed parent consent forms. Parent consent forms will be distributed at least one week prior to the site visit.