<table>
<thead>
<tr>
<th>Purpose Code</th>
<th>Object Code</th>
<th>Salaries 100</th>
<th>Retirement Fringe Benefits 200</th>
<th>Purchased Services 400</th>
<th>Supplies 500</th>
<th>Capital Outlay 600</th>
<th>Other 800</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Support Services</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>50,000.00</td>
<td>0.00</td>
<td>64,795.00</td>
<td>0.00</td>
<td>114,795.00</td>
</tr>
<tr>
<td>Governance/Admin</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Prof Development</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>4,000.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>4,000.00</td>
</tr>
<tr>
<td>Family/Community</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Safety</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Facilities</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>325,000.00</td>
<td>0.00</td>
<td>325,000.00</td>
</tr>
<tr>
<td>Transportation</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>54,000.00</td>
<td>0.00</td>
<td>389,795.00</td>
<td>0.00</td>
<td>443,795.00</td>
</tr>
</tbody>
</table>

Adjusted Allocation: 0.00
Remaining: -443,795.00
Applicants shall respond to the prompts or questions in the areas listed below in a narrative form.

A) APPLICANT INFORMATION - General Information, Experience and Capacity

1. Project Title: The Dayton Regional STEM School

2. Executive summary: Provide an executive summary of your project proposal and which goal(s) in question II you seek to achieve. Please limit your responses to no more than three sentences.

3. Unique Identifier (IRN/Fed Tax ID): 011506

4. Address of lead applicant: 1724 Woodman Dr. Kettering, OH 45420

5. Phone number of lead applicant: 937-256-3777

6. Email Address of lead applicant: Jeffrey.Lewis@wright.edu

7. Secondary applicant contact: - Provide the following information:
   First Name, Last Name of contact for lead applicant: Dr. Jeffrey Lewis
   Organization name of lead applicant: Dayton Regional STEM School
   Unique Identifier (IRN/Fed Tax ID): N/A
   Address of secondary applicant: N/A
   Phone number of secondary applicant: N/A
   Email address of secondary applicant: N/A

8. Lead applicant primary contact: - Provide the following information:
   First Name, Last Name of contact for secondary applicant: N/A
   Organization name of secondary applicant: N/A
   Unique Identifier (IRN/Fed Tax ID): N/A
   Address of secondary applicant: N/A
   Phone number of secondary applicant: N/A
   Email address of secondary applicant: N/A

9. Which of the stated Straight A Fund goals does the proposal aim to achieve?

10. Which of the following best describes the proposed project? - (Select one):

11. Describe the innovative project.
12. Describe how the project will meet the goal(s) selected above. - If school/district receives school improvement funds/support, include a brief explanation of how this project will advance the improvement plan.

Consistent with the StraighT A Fund goals, the use of the Assessment and Learning in Knowledge Spaces (ALEKS) will increase achievement in math by an average of 2 points as measured against baseline average ACT of 21.6 for 2012-13 seniors at the Dayton Regional STEM School (DRSS). Use of an Intelligent Tutoring System (ITS) like ALEKS is consistent with DRSS plan in the CCIP, focusing on research-based tutoring and "academic support systems." The use of ALEKS provides extended instruction in after school and summers as noted in the School Improvement (SI) Plan. Research indicates that ALEKS has been extremely effective in creating learning paths for students via the accuracy of the summative and formative assessment (Hanna & Carpenter, 2006). Greater use of "student success data" is also part of the DRSS plan. Students will also use ALEKS as part of the classroom instruction. WSU will provide "high quality and continuous professional development" as noted in the SI plan. ALEKS increases success rate in different learning contexts (Taylor, 2008; Haggery & Smith, 2005, Nwoagu, 2012). Using ALEKS has potential for reducing racial disparity in math outcomes (Hu et al, 2008). This is consistent with the DRSS school improvement plan that focuses on practices that "meets the scientifically research-based requirements (NCLB Sec. 1603) and has the greatest likelihood of ensuring all disaggregated groups of students meet State standards." The project also will sustain itself through retention of students that otherwise would have been lost because they were unable to succeed in math. Administrative time in enrolling, terminating students and re-enrolling students will be reduced. This bold, evidence-based project enables DRSS to transfer more time in classroom instruction, by reducing administrative burdens related to turnover of students. The program has the potential to help students build developmental skills, and to allow gifted youth to progress at a faster rate. Since students who are falling behind and those who are not challenged are more likely to be discipline problems, DRSS anticipates a reduction in out-of-school suspensions. This will allow the principals to spend more time as instruction leaders, who support classrooms. In addition, students can self-paced work to enhance ACT/SAT scores, reducing the costs of ACT/SAT retakes. Use of ALEKS for students, working at serious speeds, also enables the teacher to spend more face-time on a 1:1 or small group basis with students learning skills associated with the Common Core. This increases the classroom resources expended with students.

13. Financial Documentation - All applicants must enter or upload the following supporting information. Responses should refer to specific information in the financial documents when applicable:

a. Enter a project budget
b. Upload the Straight A Financial Impact Template forecasting the expected changes to the five-year forecast resulting from implementation of this project. If you are a consortium or partnership, please include the five-year forecasts of each school district, community college or STEM school partner for review.

c. If subsection (b) is not applicable, please explain why, in addition to how the project will demonstrate sustainability and impact.

15. What new/recurring costs of your innovative project will continue once the grant has expired? If there are no new/recurring costs, please explain why.

50,000.00 * Specific amount of new/recurring cost (annual cost after project is implemented)

* Narrative explanation/rationale: Provide details on the cost of items included in the budget (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.). If there are no new/recurring costs, please explain why.

Seat License cost per year for Aleks

16. Are there expected savings that may result from the implementation of the innovative project?

0.00 * Specific amount of expected savings (annual)

* Narrative explanation/rationale: Provide details on the anticipated savings (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.)

17. Provide a brief explanation of how the project is self-sustaining. If there are ongoing costs associated with the project after the term of the grant, this explanation should provide details on the cost reductions that will be made that are at least equal to the amount of new/recurring costs detailed above. If there are no new/recurring costs, explain in detail how this project will sustain itself beyond the life of the grant.

DRSS staff members believe that the project will be self-sustaining as a result of not only decreases in student attrition, but actual increases in students coming to the school. This shows as an increase in ALEKS based project enables DRSS to transfer more time in classroom instruction, by reducing administrative burdens related to turnover of students. The program has the potential to help students build developmental skills, and to allow gifted youth to progress at a faster rate. Since students who are falling behind and those who are not challenged are more likely to be discipline problems, DRSS anticipates a reduction in out-of-school suspensions. This will allow the principals to spend more time as instruction leaders, who support classrooms. In addition, students can self-paced work to enhance ACT/SAT scores, reducing the costs of ACT/SAT retakes. Use of ALEKS for students, working at serious speeds, also enables the teacher to spend more face-time on a 1:1 or small group basis with students learning skills associated with the Common Core. This increases the classroom resources expended with students.

18. Fill in the appropriate dates and an explanation of the timeline for the successful implementation of this project. In each explanation, be sure to briefly describe the largest barriers that could derail your concept or implementation plan to proactively mitigate such barriers. In addition, the narrative should list the stakeholders that will be engaged during that stage of the project and describe the communication that occurred as the application was developed.

The Dayton Regional STEM School faculty and administrators, WSU and partners complete extensive planning while preparing this proposal timeline. The planning involves formulation of a plan that addresses the needs of the students and the school. The plan includes the following steps:

September 16, 2013 to October 4, 2013: Early meetings clarified plans for the Every Student Calculus Ready project with Implementation Team. Letter of Intent was submitted after review of Straight A resources, webinars, etc. October 8, 2013 to October 20, 2013. Dayton Regional STEM School faculty and administrators, WSU and partners complete extensive planning while preparing this proposal.

* Proposal Timeline Dates

Plan (MM/DD/YYYY): 9/16/2013
* Narrative explanation
Implement (MM/DD/YYYY): 12/20/2013

* Narrative explanation

October 14, 2013 to October 22, 2013: Logic model is created as development of this grant. The logic model will guide data collection. Course corrections made via continuous improvement (CI) review. December 19 to 20, 2013: Letter of the award is received. The grant is reviewed again as part of developing a checklist that will be used in showing fidelity to the grant. January 7 to 8, 2014: Meeting for bidders to see space. The second day is in case this date does not work due to contingencies. Bidders on building improvement must be able to begin work by January 27, 2014. January 10 to 17, 2014: DRSS will select the winning bid. If there are no issues, the award will be finalized and the winning bidder will be notified. January 17 to April 4, 2014: March 17th is a Professional Development Day for teachers which will allow for final training regarding the lab and ALEKS. Any issues with program noted by teachers are recorded for future replicate the lab during the opening day. April 7 to 14, 2014: The lab is opened for the first time. The lab will run during all times and includes updates to electricity, fire alarms, safety upgrades, adding partition walls, improved flooring and doors to main school. Additional days of construction planned to address any contingencies. All furniture and equipment is ordered and scheduled for delivery. Vendor working on access points for WiFi has met with construction contractor to set up schedule. May 9 to 10, 2014: The lab run with limited lab users and will continue to run. If there was any problems, they would be addressed prior to official opening date for students. May 21 to 27, 2014: ALEKS integrated into Destination Imagination Summer Program and summer credit recovery efforts. August 13 to 17, 2014: through and through FY 19 ALEKS is integrated into classroom, summer programs, afterschool and all professional development.

Summative evaluation (MM/DD/YYYY): 10/14/2014

* Narrative explanation

The use of supplemental learning with the Assessment and Learning in Knowledge Spaces (ALEKS) will greatly enhance instructional practices in the Dayton Regional STEM School. By each student entering authentic responses rather than selection of a multiple choice item, ALEKS will accurately assess accurate level of student achievement (Hanna & Carpenter, 2006). Since online learning often uses multiple response choices, students have a 50% chance of guessing right on any item which tends to obscure measurement of specific skills. An accurate assessment leads to an individualized learning plan (ILP) that is matched to each student’s needs so the student can master skills needed for each course coming into the Common Core. This allows for greater differentiation and scaffolding, which promotes student success (Koeze, 2007; Tomlinson, 1999; NCR, 2000). Although project-based learning has been an excellent way to reinforce and build skills, these assignments may use algebraic concepts that the student has not yet mastered or may be too advanced. Effective learning environments, just like a MULTIPLE CHOICE QUESTION, provide a problem and activation of existing knowledge with demonstration, application and integration of new learning (Merrill, 2002). This can be accomplished using ALEKS logic model.

Data continues to be collected for this project. The evaluation will examine the timelines that are met and the professional development that occurs. COI process continues. Data is collected for replication. Data is collected for replicating students are collected as described in early years, e.g. summative and formative data. ALEKS, PLAN, OGT/OAA, Sustainability data and retention of students is collected. Any unforeseen costs are recorded in the accounting of the project. Any changes are noted in the work. Any changes are noted in the final report of results. The team has evaluated the effectiveness of ALEKS. Many teachers have been trained and learned how to use ALEKS. The software is used at DRSS during the fourth quarter of the year. May 27, to June 10, 2014: ALEKS is used as part of STEM immersion plan for the last three weeks of the school year. May 21 to 27, 2014: More students and staff using ALEKS. June 11, 2014: Update on ALEKS for students during summer. June 19 and 26, 2014: ALEKS used into Destination Imagination Summer Program. June 30, 2014: All expenses are entered and expended. July 3 to July 31, 2014: ALEKS integrated into Destination Immagination Summer Program and summer credit recovery efforts. August 13 to 17, 2014: through and through FY 19 ALEKS is integrated into classroom, summer programs, afterschool and all professional development.

E) SUBSTANTIAL IMPACT AND LASTING VALUE - Impact, evaluation and replication

20. Describe the rationale, research or past success that supports the innovative project and its impact on student achievement, spending reduction in the five-year fiscal forecast or utilization of a greater share of resources in the institution.

Every Student Calculator Ready is designed to achieve increase results. Students test results have the ACT/PLAN, OAA/OAT as well as college placement tests. Although at DRSS perform at much higher levels than Ohio schools overall, considerable gender, racial and economic gaps still exist. At Dayton Regional STEM School, African-American students had a 10 point gap in math scores for the 2012-2013 school year (ODE, 2013). National studies bear out achievement gaps (Harris & Herrington, 2005, 2012). National research also indicates that achievement gaps at the proficiency level are shrinking; while gaps at the advanced level are growing (Cliffette et al., 2008). In 2012, 6th grade at DRSS, 72.4% of males scored in the advanced range compared to 43.5% of females (ODE, 2013). At the 12th grade at DRSS, 66.7% of males who were not economically disadvantaged tested as advanced in math, compared to 43.8% of the disadvantaged students (ODE, 2013). Research on students in a behavioral science statistics program found the use of ALEKS closed the historical one grade difference in achievement between White and African-American students (Huang et al., 2009). WSU has personal experience with ALEKS in developmental math courses, which has led to the belief that the online instruction will close gender, economic and racial/ethnic achievement gaps through additional hours of math exposure, as well as greater use of differentiation and scaffolding. Research has shown ALEKS to be effective in a variety of learning settings (Taylor, 2008; Haggerty & Smith, 2005; Nwaogu, 2012). ALEKS is specifically designed to address the huge range of math abilities within a single grade. The National Assessment of Educational Progress reports in the 12th grade, the 98th percentile had math scaled scores of nearly 355; while at the 10th percentile, scaled scores were just above 250 (NAEP, 2009). A similar gap exists in 8th grade. The mapping of learning domains in ALEKS, using Knowledge Space Theory, builds on extensive research of software engineers, mathematicians, and cognitive scientists from New York University and the University of California at Irvine and allows for a strategic
focus on weak areas (Springer-Verlag, 2011; Cosyn & Thiery, 2000; Koppen, 1993). This use of artificial intelligence in tutoring enables ALEKS to differentiate instruction, allowing gifted students and struggling students to both be challenged appropriately, addressing the ability gaps noted by the NAEP. What is very innovative here is how ALEKS can supplement project-based learning so that students have opportunities to apply the instructional content and their understanding of the instructional content to solving problems. ALEKS is effective in improving students' understanding and helping them close the large gaps and retained the knowledge for long-term retention. This has been noted in several studies (Thompson et al., 2001; Larson et al., 2003). Students with 1:1 computers showed substantially improved growth in reading and math scores compared to those without computers. Helping the most disadvantaged students close gaps (Thomas, 2000; Darling-Hammond et al., 2008). Our second goal is to reduce overall spending in administrative items. The use of ALEKS and increased instruction allows reduced marketing to attract new students to replace who left behind because they were behind. DRSS estimates that the current attrition rate of 10% of students will reduce by half to 5%. The savings will result in the DRSS being able to invest additional funding in skills training. Our third goal is to allow enhanced resources to be spent in the classroom through a reduction of staff time focused on discipline occurrences. Studies indicate students who had failed at least once, as well as minority or disadvantaged students, are more likely to be suspended (Ballfanz, Byrne, and Fox, 2012; Fabero et al., 2011; Losen & Gillespie, 2012). DRSS and partners believe that closing of achievement gaps via use of ALEKS as a supplement to project-based learning will result in 23% fewer suspensions. This will enable greater resources to be spent.

21. Is this project able to be replicated in other districts in Ohio?

22. Is so, how?

23. Describe the substantial value and lasting impact that the project hopes to achieve.

24. What are the specific benchmarks related to the fund goals identified in question 9 that the project aims to achieve in five years? Include any other anticipated outcomes of the project that you hope to achieve that may not be easily benchmarked.

25. Describe the plan to evaluate the impact of the concept, strategy or approaches used.

Yes

26. Include the method by which progress toward short- and long-term objectives will be measured. (This section should include the types of data to be collected, the formative outputs and outcomes and the systems in place to track the program's progress).

27. Include the method, process and/or procedure by which the program will modify or change the program plan if measured progress is insufficient to meet program objectives.

Project stakeholders will take the lead in the continuous improvement processes. As with all effective CQI processes, the focus will be on analyzing structural or systemic barriers to success rather than pointing to individuals to blame. It is the movement from Us vs. Them process for identifying issues that is critical for delineating weaknesses, brainstorming solutions and then efficiently and effectively acting on those solutions. Another key ingredient is the focus on continuous incremental change, which requires a shift in philosophy for many stakeholders. However, by having the Teacher Based Teams and the Building Leadership Teams, as well as other constituent groups, involved in the process from beginning to end, the goal is that individuals will be much more likely to embrace changes because they come from bottom up suggestions, much more frequently than top down commands. Data, such as progress on formative instructional assessments, will be available constantly using the rapid cycle data from ALEKS, which provides real-time assessment results, and assessment data from Wright State University. Information regarding other risk factors for youth will be tracked by Teacher Based Teams who will be reviewing all early detection flags on a weekly basis in order to identify and then intervene with the students most at risk. Interventions will be customized in accordance with the unique situation of the student and family. Ohio Accountability System assessments will be measured in accordance with the OGT/ACT, and quarterly, short cycle assessments will also provide interim benchmarks. In addition to monthly data assessment data and patterns of use data from ALEKS, a crucial benchmark will be improvements in ACT scores and the percentage of students who are Calculus ready. The Calculus ready is a score of 27 or above on the ACT. ALEKS assessments are the same placement tests that WSU uses for math placement. These formative assessments through will give us ongoing data on student progress. The CQI analysis will also look at how effective different parts of the program are in responding to the identified needs and gaps. Are teachers attending professional development as expected? Are different training topics needed to address new, emerging issues in the implementation? Is the instructional technology used effectively and effectively by the students? Are there students for whom the instructional technology, digital learning is not working? If so, how can that be addressed? A key element of the CQI process is the realizations can be extrapolated to other students and changes of the program to be implemented effectively. Parents, students, teachers, administrators and partners will be involved in the process. The Evaluation Committee and Implementation Team will work with all the other stakeholders and partner groups to aggregate data and provide an annual report to each participating school district, school superintendent and school board. The data will be shared and public comment will be solicited, so that the Implementation Team can make decisions regarding the impact of the different strategies and identify essential and necessary program changes to enhance effectiveness.

By virtue of applying for the Straight A Fund, all applicants agree to participate in the overall evaluation of the Straight A Fund for the duration of the evaluation timeframe. The Governing Board of the Straight A Fund reserves the right to conduct evaluation of the plan and request additional information in the form of data, surveys, interviews, focus groups, and any other related data to the legislature, governor, and other interested parties for an overall evaluation of the Straight A Fund.

PROGRAM ASSURANCES: I agree, on behalf of this applicant agency and all of my identified partners to abide by all assurances outlined in the Assurance section of the CCIP. In the box below, enter “Accept” and indicate your name, title, agency/organization and today’s date.

Accept, Dr. Jeffrey Lewis, Principal and Chief Academic Officer for Dayton Regional STEM School on October, 25, 2013