21st Century
Science, Technology, Engineering, and Mathematics (STEM) Labs

Grant Application and Guidance

GEORGIA
D E P A R T M E N T   O F
EDUCATION
Kathy Cox, State Superintendent of Schools
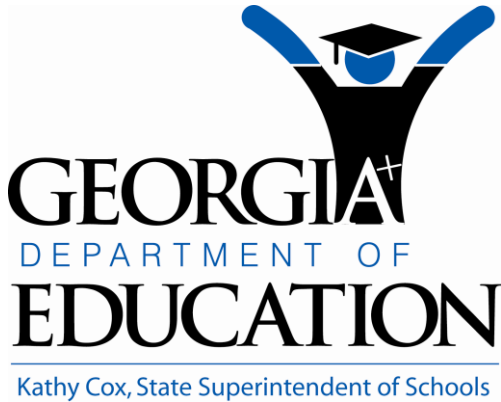
Title II, Part D:
Enhancing Education
Through Technology — ARRA
(Ed Tech)
Competitive Grants
CFDA 84.386A

Georgia Department of Education
Office of Technology Services

Georgia Department of Education
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Purpose of the Program

According to Elementary Secondary Education Act legislation and US-ED Program Guidance, the primary goal of the Ed Tech program is to improve student academic achievement through the use of technology (see http://www.ed.gov/programs/edtech/guidance-arra.doc and http://www.ed.gov/policy/elsec/leg/esea02/ pg34.html#sec2401). The Ed Tech ARRA funds provide an unprecedented opportunity for State educational agencies (SEAs), eligible local educational agencies (LEAs), eligible local entities, and schools to implement 21st century classrooms using innovative strategies that enhance instruction, facilitate teaching and learning, and improve student achievement.

STEM refers to the areas of science, technology, engineering, and mathematics. The primary goals of the FY10 Title II, Part D ARRA grant for **21st Century STEM Labs** are to:

1. Increase community understanding of the importance of STEM education and capacity to sustain a viable STEM educational program to prepare students for work and life in the 21st century.
2. Develop model technology enabled STEM labs emphasizing, interdisciplinary, hands-on, inquiry-based (guided discovery) learning aligned to the Common Core State Standards and the Georgia Performance Standards.
3. Increase Georgia's capacity to provide high quality K-12 STEM professional learning opportunities.
4. Increase student engagement and interest in STEM studies.
5. Increase student 21st century skills and technology literacy by providing students with opportunities to use the technical tools of the STEM industry.
6. Increase the number of students pursuing careers in STEM-related fields and/or post-secondary STEM related education/training.

Rationale:

K-12 science, technology, engineering, and mathematics (STEM) education is essential for a skilled Georgia workforce. Of the 30 fastest-growing occupations projected through 2016, the U.S. Bureau of Labor Statistics' Occupational Outlook Handbook concludes that 16 of them will require substantial mathematics or science preparation. The agency also reports that professional information technology (IT) jobs will increase 24% between 2006 and 2016. In Georgia, the fastest growing industry is biotechnology. Georgia students must be prepared to compete globally for these and other STEM related jobs and Georgia's schools must build capacity to offer and attract student participation in STEM.

Georgia's mathematics, science, technology and CTAE standards emphasize instruction that is inquiry-based through guided discovery, student centered, and focused on authentic application. The GaDOE is one of several states contributing to the development of a set of Common Core State Standards (CCSS) that articulate what every high school graduate should know to be college and career ready. Some of these standards are identified as STEM standards. Through collaboration, content experts are working to align materials and resources to STEM standards and to provide more opportunities for students to investigate, use the tools of, and gain the competencies offered through STEM education. All Georgia students need these opportunities whether they are preparing for work or post secondary education.

One important investment Georgia is making in STEM involves the creation of 21st Century STEM Labs that are located in Middle and High Schools whose school staffs are deeply engaged with postsecondary, community, and business partners. Strategically locating the 21st Century STEM Labs in each of Georgia's 13 Congressional Districts ensures the greatest potential of expanding STEM education to many school sites across the state. To that end, the Georgia Department of Education's Instructional Technology Department has established a bold and coherent Title II, Part D 21st Century STEM Lab Competitive Grant to begin implementation during the 2010 -2011 school year with the goal of seeding sustained statewide emphasis on STEM education. The collaborative team of science, mathematics, CTAE, and educational technology leaders that created the guidance for this competitive grant has provided an investment through a $9 million grant appropriation for fiscal year 2011. This investment involves

expanding the impact of Georgia's 21st Century STEM education initiatives on the K-12 level – specifically through the creation of 26 STEM Labs in middle and high schools and the formation of each school's 21st Century STEM Lab Governance Boards that will partner with post secondary institutions, STEM research and demonstration sites, community, and business.

Outcomes of the grant supporting Ed Tech goals include:
1. By participating in the ARRA Title II, Part D 21st Century STEM Lab Competitive Grant, the teachers will:
   a. Work in collaborative teams consisting of CTAE, science, and mathematics teachers, post secondary instructors, and industry experts to develop, interdisciplinary, inquiry-based, technology connected, authentic STEM projects.
   b. Participate in regularly scheduled collaborative meetings to monitor and evaluate implementation and assessment results to determine the impact on student academic and technology literacy growth and to adjust instruction for continued improvement.
   c. Regularly use appropriate technology tools to enhance learning and content in STEM courses.
   d. Participate in formative and summative grant monitoring and evaluation.
   e. Participate in a prescribed professional development series focused on the collaborative creation of STEM projects and using STEM industry technologies. (See Appendix E).
2. By participating in the ARRA Title II, Part D 21st Century STEM Lab Competitive Grant, students will:
   a. Receive regular opportunities to use the 21st Century STEM Labs to participate in, interdisciplinary, inquiry-based, authentic STEM projects.
   b. Increase their STEM and technology literacy skills solving real world problems as part of problem-based GPS embedded assignments.
   c. Participate in whole group and small group instructional use of technology to demonstrate what they know and are able to do.
   d. Use student response tools to provide regular feedback that informs the teacher of their learning.
   e. Participate in formative and summative grant monitoring and evaluation.
3. By participating in the ARRA Title II, Part D 21st Century STEM Lab Competitive Grant, the grant school administrators will:
   a. Provide scheduling assistance that maximizes collaboration time for participating teachers.
   b. Provide leadership support towards the identified grant outcomes.
   c. Provide appropriate and necessary technology support for effective use of 21st Century STEM technology by participating teachers and students.
   d. Utilize the grant identified GaDOE *Keys to Quality: Unlocking Continuous Improvement* resources and related classroom observation tools to formatively inform and guide implementation of the grant outcomes.
   e. Participate in formative and summative grant observations and external evaluation.
   f. Participate in a training session for Title II, Part D grants monitoring.
4. By participating in the ARRA Title II, Part D 21st Century STEM Lab Competitive Grant, the participating grant schools will:
   a. Consist of one high school and one feeder middle school and include an outreach program to feeder elementary schools.
   b. Participate on an LEA created STEM Grant Governance Board consisting (at a minimum) of grant school administrators, grant teachers, post secondary instructors, STEM industry representatives, and the LEA IT coordinator. This board will:
      - plan the technology infused, interdisciplinary, inquiry-based STEM projects
      - provide support to teachers and students
      - monitor implementation
      - conduct periodic data analysis of student assessments
      - plan for sustainability
      - plan community marketing and communication of the importance of STEM

c. Implement guidelines and procedures that facilitate student use of the grant provided 21st Century STEM Labs and teacher participation in the professional development series to increase student engagement in STEM projects and improve student technology literacy.
d. Provide students with opportunities to participate in state or national STEM competitions.

Overview

This document invites eligible Local Educational Agencies (LEAs) in Georgia (see FY10 Title II, Part D ARRA Eligibility List for a list of eligible schools/LEAs) to apply for the ARRA Title II, Part D 21st Century STEM Lab Competitive Grant and provides these eligible applicants with detailed information about the competitive process.

The grants are designed to create a model that will:
1. Build capacity in each Congressional District for increasing student participation in STEM projects that can be replicated throughout the state;
2. Increase Georgia's capacity to provide high quality STEM professional learning opportunities in every Congressional District; and
3. Increase student 21st century and technology literacy skills.

Grant proposals must be uploaded to Georgia's Consolidated Application web site by 3:00 pm on Thursday, May 13, 2010. Each grant will be read and scored by trained GaDOE grant readers. LEAs with multiple eligible schools may apply for each school that is eligible and each school that applies from the same LEA will be read and scored independently. Awards will be made to the schools with the highest scores in their Congressional District, and no school will be awarded funds with an average rubric score less than 70. The GaDOE will ask the State Board of Education to approve awards at the June 2010 State Board Meeting. The grant award period of availability is July 1, 2009 – September 30, 2010 with a 12-month carry-over period from October 1, 2010 – September 30, 2011. The implementation period for this grant begins with the 2010-2011 school year. Equipment purchases and installation are to be completed immediately following the award, and every effort should be made to complete this no later than the beginning of the 2010-2011 school year. Participating team members may receive professional learning units based on successful participation and completion of grant prescribed professional development.

If funded, for each school awarded the grant, LEAs must agree to:
1. Provide 21st Century STEM Labs and/or software/access identified in Appendix A to one high school and one feeder middle school with an outreach program to elementary feeder schools.
2. Create a STEM Lab Grant Governance Board consisting (at a minimum) of grant school administrators, CTAE Director, grant teachers, post secondary instructors, STEM industry representatives, and the LEA IT coordinator. This board will:
    *   plan the technology infused, interdisciplinary, inquiry-based STEM projects
    *   provide support to teachers and students
    *   monitor implementation
    *   conduct periodic data analysis of student assessments
    *   plan for sustainability
    *   plan community marketing and communication of the importance of STEM
3. Guarantee at least one CTAE, mathematics, and science teacher will collaborate and fully participate in the professional development, participation on the Grant Governance Board, and STEM Lab grant implementation during the first semester of the 2010-2011 school year and that all CTAE, mathematics, and science teachers will fully participate beginning second semester.
4. Support technical platforms for the STEM Lab.
5. Monitor use of lab equipment to ensure student and teacher use is appropriate.
6. Complete all reports and provide associated data to the GaDOE.
7. Provide required electrical wiring and/or data cabling
8. Participate in the job-embedded professional development series provided by the chosen ETC/RESA. (See Appendix E)

9. Participate in a designated external evaluation of the program.
10. Participate in the required monitoring sessions and processes.
11. Complete and submit quarterly monitoring reports to the GaDOE.

To assist LEAs in meeting these required objectives, the grant will provide a minimum of $345,554 for the high school and for the middle school (or $691,109 for each LEA) for the following:

Each school will receive $86,389 (25%) for Professional Learning (Function 2210): As required under Title II, Part D, Sec. 2416, at least 25% of the awarded grant funds must be used to provide ongoing, sustained, and intensive, high-quality professional development. The Title II, Part D ARRA grant for 21st Century STEM Labs shall provide face to face, blended, and job-embedded professional learning tailored to ensure successful implementation in each 21st Century STEM Lab supporting extensive use and evaluation of technology resources relevant to each STEM course. Professional development will provided to the grant school and support the implementation of the grant outcomes which included periodic formative evaluation, classroom observations, instructional and technical support for the grantee's classrooms. The professional learning funds must be spent in direct support of the grant outcomes in grant classrooms and with respective teachers at the selected school. For this grant, the professional development requirement may be fulfilled through an ETC/RESA with job-embedded professional learning and support for implementation of the grant outcomes during the grant implementation period as described in the prescribed professional development series in Appendix E.

Substitutes and/or Stipends (Function 2210): LEAs may use some of the set aside 25% professional learning funds or any unused equipment funds to provide substitutes and/or stipends for teachers to attend professional development sessions.

Each school will receive $241,278 for Equipment (Function 1000): The grant will provide approximately $241,278 to equip one 21st Century STEM Lab at the awarded high school and one at the feeder middle school. Grant funds will be expended to provide the STEM Lab hardware/software listed in Appendix A. Of this amount, $100,000 is set aside for upgrades to existing infrastructure and Internet connectivity as identified in Appendix A. In the event that, the school meets the minimum specifications of existing infrastructure and internet connectivity in the designated grant classroom, the $241,278 may be expended as indentified in the following paragraph provided a waiver is obtained from the GADOE. See Appendix I.

Awarded schools/LEAs will select the equipment to be purchased based on the minimum hardware specification(s) provided in Appendix A. LEAs may choose to collaborate with an ETC or RESA to gain information and quantity discount pricing, if available, on equipment that meets minimum hardware/software specifications. Wireless access points/hardware purchases may be recommended by an ETC or RESA supporting the LEA's identified infrastructure needs. If the cost of equipping the STEM Lab is less than $241,278, remaining may be diverted to additional student equipment purchases or professional development, subs, and stipends that support the grant outcomes. The additional equipment must be appropriate for the grant goals and solely dedicated for use in the designated 21st Century STEM Lab. If schools/LEAs choose equipment for which cost exceeds available grant funds, it will be the LEA's responsibility to provide the additional funds needed to purchase the required equipment.

Each school will receive $17,887 for Evaluation (Function 2210): EDGAR Part 75, Subpart E - Sec. 75.590 "Evaluation by the Recipient" stipulates that a recipient shall submit a performance report, or, for the last year of a project, a final report, that evaluates at least annually
a. The recipient's progress in achieving the objectives in its approved application;
b. The effectiveness of the project in meeting the purposes of the program; and
c. The effect of the project on participants being served by the project.

Awarded LEAs will implement a grant-wide common pre and post assessment that will be used to demonstrate teacher and student 21st century skills. The GaDOE will designate both the 21st century skills assessment and the

external evaluator for the ARRA Title II, Part D 21st Century STEM Lab Competitive Grant, and each school/LEA will be billed by these evaluators.

Eligibility

A list of eligible schools and LEAs is published on the GaDOE FY10 Title II, Part D ARRA web page in the document FY10 Title II, Part D ARRA Eligibility List. Title II, Part D legislation requires that funds be awarded equitably across rural and urban districts according to the demonstrated need of those local educational agencies serving the areas. In addition, No Child Left Behind (NCLB) mandates that the GaDOE set eligibility criteria for the Title II, Part D competitive grants to ensure that LEAs applying for funds are among those with the "highest needs" in the state. GaDOE's criteria for determining "high need" eligibility for the FY10 competition are as follows:

An LEA shall be considered "high need" if:

a. The percentage of children in poverty residing in the LEA's service area is above the state average of 17.97% according to the 2008 US poverty data provided to GaDOE Title I programs. See web link:
   http://www.census.gov/did/www/saipe/data/schools/data/2008.html
-AND-
b. The LEA has one or more schools identified as Needs Improvement (NI), Consequence Level One or higher, according to the 2009 AYP Final School Summary Report dated October 2009.
-OR-
c. The ratio of students to computers in the LEA's service area is above the state average of 2.67 students to computers according to the 2008-2009 State Technology Inventory Survey.

Responsibility of the grant application rests with the school; submission rests with the LEA. Each individual eligible school is responsible for its grant application, while the LEA is responsible for sign off and submission. A list of eligible schools and LEAs is published on the GaDOE FY10 Title II, Part D ARRA web page in the document FY10 Title II, Part D ARRA Eligibility List.

Award Criteria

Total Funding Amount: Up to $8,984,411 is available for awards through this grant program in FY10.
Award Amount: Awards will be a $691,109 per LEA.
Number of Awards: 13 (the award includes funds for one high school and one middle school)
Grant Award Period: July 1, 2009 - September 30, 2010, with a 12-month carryover period from October 1, 2010 - September 30, 2011. Funds must be expended during the approved grant period and may not be expended or obligated prior to approval and the execution of a grant agreement between GaDOE and the LEA.

Program Evaluation

GaDOE will coordinate the program evaluation in conjunction with a designated external evaluator. All applicants will be required to:

a. Complete a self-evaluation as outlined by the outside evaluator and GaDOE.
b. Provide documentation on the progress towards identified grant outcomes.
c. Report on the impact of the project on building a model for 21st Century STEM Lab that can be replicated in other school districts across Georgia, increase student engagement and participation in STEM projects, and increase student achievement in STEM content areas.
d. Conduct the grant specified common teacher and student 21st Century Skills pre and post assessment.
e. Provide grant funds towards the evaluation.
f. Documented successes in STEM-related competitions.
g. Track the number of students that go into STEM-related careers, or postsecondary STEM-related studies.

Additional data and classroom observations may be collected for the evaluation. All schools/LEAs will be required to work with the evaluators to schedule site visits and provide classroom level student data as requested. A final report documenting the results will be required at the conclusion of the grant period.

Technology Literacy Standards

The portion of the No Child Left Behind (NCLB) Act known as 'Enhancing Education Through Technology Act of 2001' (EETT) has a goal: "To assist every student in crossing the digital divide by ensuring that every student is technologically literate by the time the student finishes the eighth grade, regardless of the student's race, ethnicity, gender, family income, geographic location, or disability." Applicants will be required to describe within the grant application their ability to participate in the grant specified implementation of a common assessment that will be used to demonstrate their students' and teachers' 21st century skills.

Allowable Expenditures

Only costs associated with implementing the GaDOE ARRA Title II, Part D 21st Century STEM Lab Competitive Grant will be approved. Grantees should include in their budgets costs for professional development, stipends, substitute pay, travel for attending professional learning activities and conferences, travel for required meetings, student technology assessments, online classes, and appropriate teacher and lab hardware and software that supports the grant purpose and outcomes.

Please refer to Appendix A to find minimum specifications for hardware/software.

Non-Allowable Expenditures

The following expenses are not allowed, but this should not be interpreted as an all-inclusive list.
Grant funds may not be used to:
a.   Supplant existing positions, programs, or services (i.e., salaried positions).
b.   Purchase computers for a general computer lab.
c.   Purchase software, equipment or services for classrooms outside of the 21st Century STEM Lab.
d.   Purchase furniture, desks, chairs or other classroom equipment that is not instructional technology in nature.

In addition, funds cannot be obligated before the grant period and funds cannot be paid prior to any services being rendered.

Consultation Requirements

Equitable participation requirements in Subpart 1 of Part E of Title IX of the ESEA apply to the Ed Tech program. (See ESEA Section 9501(b) (1)). Therefore, LEAs and eligible local entities applying for Ed Tech funds must engage in timely and meaningful consultation with appropriate private school officials during the design and development of programs and continue the consultation throughout the implementation of these programs. The consultation should begin during the development of the local grant proposal.

LEAs and local entities must provide, on an equitable basis, special educational services or other benefits that address the needs under the program of children, teachers, and other educational personnel in private schools in areas served by the LEAs and local entities. Expenditures for educational services and other benefits for private school children, teachers, and other educational personnel must be equal, taking into account the number and educational needs of the children to be served, relative to the expenditures for participating public school children.

Private schools will not be responsible for implementing the 21st Century STEM Lab Competitive Grant as described in this proposal. Their expenditures, however, must be aligned with the goals and purposes of the Ed Tech program as outlined in the Title II, Part D legislation and guidance (http://www.ed.gov/programs/edtech/guidance-arra.doc and http://www.ed.gov/policy/elsec/leg/esea02/pg34.html#sec2401).

Required Application Components

To apply for this grant, grant proposals must be uploaded to Georgia's Consolidated Application Web site by 3:00 pm on Thursday, May 13, 2010.

Only one PDF document is to be uploaded and that document should contain the following:

- **Proposal Narrative - Required (<u>maximum 20 pages</u>) with the following sections:**
  (A) Project Personnel
  (B) Critical Academic Needs
  (C) Critical Technology and STEM Lab Needs
  (D) Current Instructional Context and Needs Assessment
  (E) System Support for Grant
  (F) Local Implementation Plan
  (G) Evaluation Plan
  (H) Dissemination Plan
- **Required Appendices:**
  - ☐ Cover Sheet Form – Required (Appendix B)
  - ☐ Assurances Form – Required (Appendix C)
  - ☐ Private School Consultation Form – Required (Appendix D)
  - ☐ ETC/RESA Agreement – Required (Appendix F)
  - ☐ System Letter of Commitment Form – Required (Appendix H). The STEM Grant Governance Board consisting of school administrators, all grant teachers, higher education instructors, and STEM industry representatives, and the LEA IT coordinator must sign the letter of commitment to indicate they have read, understood, and agree to the requirements of the grant and the professional learning sequence. The LEA Superintendent must also sign the letter.
- **Optional Appendices:** Additional system or school documentation to support grant application.

The Proposal Narrative, Required Appendices and any Optional Appendices must be converted to ONE PDF file before uploading to the Consolidated Application Web site, and should be named the same way for each applying school, i.e., AbcCo_XyzHS_STEM.

Required Narrative Sections: The following provides schools/LEAs with format instructions, the purpose, and suggested content for each required narrative section. The applying high school and participating feeder middle school should collaborate to complete this application.

Proposal Format (10 points): The purpose of these instructions is to define the acceptable format for the grant proposal. All of the required components (Proposal Narrative, Required Appendices and Optional Appendices) must be contained in one and only ONE document that is converted to a PDF format before uploading. The Proposal Narrative has a maximum of 20 pages. Multiple documents uploaded to the Consolidated Apps will not be an acceptable format for the grant. The PDF Document file should be named the same way for each applying school, i.e., AbcCo_XyzHS_STEM. The proposal should follow these guidelines:

- ☐ The document should begin with the cover sheet (Appendix B).
- ☐ Each document page should contain a header with the name of the grant, district name, and school name; the footer should contain page number and the date.
- ☐ All grant proposals should use Times Roman font, with font size of 10, and be single-spaced.
- ☐ Each section of the grant proposal should be clearly labeled/identified.
- ☐ The document should contain the signed Assurances Form (Appendix C) and the signed Private School Consultation Form (Appendix D).
- ☐ The document should contain the signed ETC/RESA Agreement (Appendix F).
- ☐ The document should contain the signed System Letter of Commitment Form (Appendix H).

(A) Project Personnel (15 points): The purpose of this section is to describe the individuals who will comprise the leadership team and their qualifications. The leadership must include, at a minimum, one administrator who will implement this project. The purpose of this section is to demonstrate that these personnel are capable

and qualified to manage the 21st Century STEM Lab Grant. In determining the quality of this section, the following will be considered:

- ☐ Evidence that a complete team of project personnel has been assembled.
- ☐ Evidence that all team members have knowledge of the grant purpose, outcomes, and the application (team members are engaged in the grant plan and share the grant outcomes and responsibilities, Letter of Commitment signed by all team members, etc.).
- ☐ The qualifications of the teacher(s) to support student use of technology to achieve grant outcomes.
- ☐ The background/experience of the district IT coordinator to support grant outcomes.
- ☐ The background of the school administrator in the areas of school improvement and educational leadership.
- ☐ Evidence of past successes attributed to proposed project personnel, especially in the areas of teacher collaboration, delivery of STEM instruction, and creation of inquiry-based projects.

(B) <u>Critical Academic Need in a Core Area</u> (10 points): In this section, the school/LEA will describe the current academic needs that will be addressed by this grant. Proposals should include:

- ☐ Clearly define and document in table format (table may be attached as an additional appendix so as not to count toward the 20-page limit) the need in core STEM academic area(s) using well-established data sources and trend data over time.
- ☐ Documented STEM related academic needs that are "critical" (below state averages, keeping schools from making adequate yearly progress, or keeping schools on "needs improvement" lists).
- ☐ Document academic needs in terms consistent with Georgia's Performance Standards.

(C) <u>Critical Technology and STEM Lab Needs</u> (10 points): This section describes the school/LEA's need for technology-enriched environments. The school/LEA will outline their technology budgets/expenditures over the past three years to show their high need for technology funding to support increasing student academic success.

- ☐ Describe the school's need for increasing STEM education opportunities.
- ☐ Describe the school's need for improving student 21st century skills and technology literacy.
- ☐ Describe how the school can leverage the STEM Lab to increase mathematics, science, 21st century skills, technology literacy, and CTAE scores.
- ☐ Describe the school's need for increasing student access to STEM Lab equipment.
- ☐ Describe the school's infrastructure needs in relation to the recommended infrastructure specifications listed in Appendix A.
- ☐ Provide a table (table may be attached as an additional appendix so as not to count toward the 20-page limit) outlining the school/LEA's technology budgets and expenditures over the past three years to show the need for increased technology funding.

(D) <u>Current Instructional Context and Needs Assessment</u> (10 points): In this section schools/LEAs will (1) describe the current instructional context of science, technology, mathematics, and CTAE courses; (2) compare the current instructional context of these courses to the future goals and vision for the inclusion of technology infused, interdisciplinary, inquiry-based STEM Lab projects in these courses; and (3) clearly state how this grant will help these teachers move toward their goals. In rating this section, the following will be considered:

- ☐ Describes how the teachers will
  - collaborate
  - leverage the STEM Grant Governance Board to create:
    1. technology infused,
    2. interdisciplinary,
    3. inquiry-based
    4. real-world problem solving STEM projects
  - increase student engagement in STEM projects,

- increase student interest in STEM studies,
- increase student understanding of STEM-related careers to include engineering and
- increase student 21st century and technology literacy skills.

☐ Provides a description of teacher's current instructional practices and content knowledge related to STEM and describes how this grant helps teachers prepare students to enter STEM-related postsecondary courses or STEM-related careers.

☐ A commitment by the applicant to address specific learning goals, the Georgia Performance Standards, NETS-S and authentic, engaging instruction for their students.

☐ Evidence that grant goals are aligned to the school/LEA's school improvement plan.

☐ Evidence that the school/LEA has aligned the grant goals to the Georgia Department of Education *Keys to Quality: Unlocking Continuous Improvement* resources.

(E) System Support for Grant (10 points): This section describes the willingness and ability of project staff, administrators, and teachers to engage in this type of instructional change and technology deployment. Schools/LEAs must describe what types of specific system supports are currently in place that will assist them in fully implementing the grant or what types of system supports they will enact to support the grant teachers and the grant program. This includes the creation and utilization of a STEM Grant Governance Board consisting of school administrators, grant teachers, higher education instructors, STEM industry representatives, and the LEA IT coordinator that will:

☐ plan the technology infused, interdisciplinary, inquiry-based STEM projects

☐ provide support to teachers and students

☐ monitor implementation

☐ conduct periodic data analysis of student assessments

☐ plan for sustainability

☐ plan community marketing and communication of the importance of STEM

Actions described in this section should indicate that the LEA is prepared and committed to provide the necessary resources and support to implement the grant fully and effectively. In addition, the LEA is prepared and committed to provide the school sufficient operational flexibility to allow scheduling that enables maximum teacher collaboration time and to fully implement a comprehensive approach to substantially improve student achievement outcomes. The application should describe actions the LEA will take to maintain implementation of the processes and strategies that positively impact student achievement. The application should identify steps that will be taken to retain human, material, and financial resources after the funding period ends. In addition, the application addresses LEA support (e.g., policies, professional learning opportunities, protected time, etc.) for the actions and strategies that positively impact student achievement. This section should also describe how the school/LEA would provide the necessary infrastructure, as well as electrical wiring for any required technology. A discussion of in-kind contributions and/or internships is appropriate in this section.

(F) Local Implementation Plan (30 points): The purpose of this section is to establish how the school/LEA will use the required equipment. How will implementation of this grant coincide with the implementation of the school's Comprehensive LEA Improvement Plan (CLIP)? How will this grant involve the use of the *Keys to Quality: Unlocking Continuous Improvement* resources? What types of activities will happen in the STEM Lab? How will the participating teachers work collaboratively as a team? How are the projects aligned to research and best practices? How will classroom activities be motivating, rigorous, and beneficial for students? Preference will be given to proposals that:

☐ Specify specific curriculum resources, including software and online resources that will be made available to the grant teachers and students.

☐ Align to the Georgia Performance Standards and NETS-S.

☐ Align to research and best-practice models of inquiry-based, technology infused, interdisciplinary, project-based, or engaged learning.

☐ Specify examples of how the instruction/classroom activities occurring in the STEM Lab will change to encourage teachers to work collaboratively as a team and how they will be motivating, rigorous and beneficial to students.

☐ Specify what STEM-related competitions will be provided to students.

☐ The type of formative assessments the teacher will employ to monitor student growth in understanding and 21st century skills.

☐ Describe the process that will be used to develop the elementary feeder outreach program.

☐ Describe how the school will ensure all related science, technology, engineering, mathematics, and CTAE teachers will share the 21st Century STEM Lab.

☐ Align grant activities to the CLIP.

☐ Align grant activities to *Keys to Quality: Unlocking Continuous Improvement* resources.

(G) Evaluation Plan (10 points): In this section, the school/LEA will outline how they will evaluate progress toward research-based instructional practices, using technology effectively for teaching and learning, improving students' technology literacy, and academic performance in critical need areas. Competitive preference will be given to proposals that provide:

☐ A description of the steps and process for assessing success in implementing the funded project.

☐ Evidence that students from this program go into STEM-related careers or postsecondary STEM-related training.

☐ Evidence that students understand STEM-related careers including a clear understanding of what engineering professionals do.

☐ A description of specific measures to evaluate the extent to which the project increases the integration of technology into instructional practices.

☐ A description of the specific criteria used to measure the impact of the project on student achievement. At a minimum, CRCT or EOCT data submitted for 2009-2010 and 2010-2011 for the participating teachers/classrooms.

☐ A description of the ability to participate in a grant-wide common pre and post assessment that will be used to demonstrate their students' and teachers' 21st century skills.

☐ A timeline for completing the implementation of the project and the evaluation steps. Both teacher and student data should be considered.

(H) Dissemination Plan (10 points): This section will include an explanation of what schools/LEAs expect to learn from participating in this grant; how they will use this information/increased capacity locally in the future; and how they will share what they have learned with others. Dissemination plans with the following qualities will receive competitive priority:

☐ Clear descriptions of what the school/LEA hopes to gain from participating in this grant program.

☐ Specific plans to share and use all acquired knowledge locally in the future.

☐ Specific plans to share what is learned with others beyond the school/LEA.

☐ Strong focus on disseminating information that will improve student achievement.

☐ Evidence of targeting specific audiences.

☐ Plans to develop specific, usable products that would be useful to others.

☐ The use of technology to aid dissemination activities.

☐ A dissemination plan that benefits a broad audience and a variety of stakeholders.

☐ High probability that others would respond to the school's/LEA's dissemination plan.

Budget Forms: Budget forms will not be a component of the competitive proposal. Schools/LEAs can indicate how each required activity will be funded in the GaDOE Consolidated Application. Budgets will be required after awards are made.

Other Scoring Components: In addition to the 115 points awarded for required narrative sections, readers will also be asked to provide a holistic score of up to 10 points based on the overall quality of the application and the likelihood that the school/LEA applicant has the capacity to ensure high-quality implementation and data collection for a grand total of 125 possible points. Each grant proposal will be read and scored by trained grant readers. If an application does not receive an average rubric score of 70 or higher, it will not be awarded the grant. If the eligible school/LEA meets the cut score of 70 or higher, it may also qualify for additional points based on the following:

- ☐ Three (3) points if the LEA did not receive the FY10 Title II, Part D competitive grant; and/or
- ☐ Three (3) points if the LEA received FY10 Ed Tech formula grant award of $5,000 or less.

Interviews: The GaDOE and members of the review team also reserve the right to interview proposed school/LEA project personnel in order to verify application information. Competitive points will be aligned with the narrative requirements.

Grant Timelines

The date grant budgets must be uploaded to the GaDOE Consolidated Application will be determined at the time of the award. Every effort must be made to order and install equipment for all participating schools/LEAs by the start of the 2010-2011 school year.

Contacts

For additional information or guidance concerning this grant, please contact your ETC or RESA (Appendix G) or the appropriate GaDOE representatives:
Wendy Grey, Title II, Part D Program Manager, wgrey@doe.k12.ga.us
Jane Henson, Title II, Part D Program Specialist, jhenson@doe.k12.ga.us

Grant Writing Assistance

The GaDOE will hold an Elluminate orientation session regarding the ARRA Title II, Part D grants on April 22, 2010. All eligible schools/LEAs are invited to attend. Georgia's ETCs and RESAs are available to provide schools/LEAs with assistance in writing the grant proposals and uploading them to the GaDOE Consolidated Application. Based on identified hardware requirements, ETC/RESAs may also provide guidance on equipment purchases and budget allocations. Contact your ETC or RESA for assistance for this grant. (See Appendix G for a list of ETCs and RESAs.)

APPENDIX A: Minimum Hardware Specifications

The specifications listed below provide the LEA with a general idea of the equipment that will be utilized in this grant. Detailed specifications and purchasing information will be provided upon grant award.

Laptop Specifications
- Processor: 2 GHz Intel Core 2 Duo or better
- Memory: 2 GB RAM minimum
- Disk Space: 160 GB or larger
- CD/DVD Device: DVD±RW (±R DL)/DVD-RAM
- Video: Mobility Radeon HD 4200 or equivalent
- Network: Gigabit Ethernet – 802.11 a/b/g/n (laptop)
- Display: 13" Widescreen TFT 1280 x 800 or better
- Operating System: Windows 7
- General: Audio In/Out, 2 or more USB ports (3 preferred), external video port

Apple Desktop/Laptop Specifications
- Processor: 2 GHz Intel Core 2 Duo or better
- Memory: 2GB RAM minimum
- Disk Space: 160 GB or larger
- CD/DVD Drive: SuperDrive 8x or better
- Video: NVIDIA GeFOrce 9400M graphics or better
- Network: Gigabit Ethernet – 802.11 a/b/g/n (laptop)
- Display: 13" Widescreen TFT 1280x800 or better
- OS: Mac OS and/or Windows 7

Digital Video Microscope

Digital Still Camera
- Digital Camera Type: Compact
- 12 megapixel
- 4X optical zoom
- USB2 download capability
- Image stabilization
- Video recording capability
- Li-ion rechargeable battery

External hard drive
- 320 Gigabytes minimum
- High speed USB
- Powered from USB bus

Headphone
- Mini-phone stereo 3.5 mm input
  - Microphones (as needed)
  - Headphone

Stereo headphone "Y" adapter
- 3.5 mm male – 2 3.5 mm female

Mounted Projector
- Display (native) Resolution: XGA/DVI (1024 X 768 including 1024 X 600) or better
- Brightness: 2000 or higher ANSI lumens
- Contrast Ratio LCD: 500:1 or better
- Contrast Ratio DLP: 2000:1 or better
- Aspect ratio: Switchable between 4:3 and 16:9
- Projector should have a zoom lens, focus, keystone correction and shift functionality
- Installation Orientation: Ceiling/Front, Ceiling/Rear, or Boom mount
- Environments: Windows and Mac compatible
- Mounted from ceiling and aligned
- Preferred: Cleanable (vs. replaceable) air filter
- Preferred: 2 XGA, 1 HDMI, Component Video, Left and Right Channel input connections (or better)
- Preferred: 3 years or longer manufacturer warranty including bulb replacement
- Required Accessories for Projector:
  - VGA or DVI splitter/amplifier (if needed for installation)
  - Appropriate video cabling and projector mount

Surge protector
- Minimum 2000 Joules protection
- Clamping voltage 150 or better
- 40-80 dB EMI/RFI power filtering
- Minimum of 6 100% transformer block compatible, flexible outlets
- 15 amp Breaker
- 8- ft Extra-long Power Cord
- Limited Lifetime Manufacturer Warranty
- LED Power Indicator
- LED Protection Indicator
- LED Ground Indicator
- Rubber skid-feet prevent sliding
- Rugged, drop-tested ABS casing
- UL Listed

High Definition Video Conferencing Camera & Codec
- Polycom HDX 8000 Series 720p/30 frames per second System at 512Kbps, or 720p/60 frames per second at 832kbps
- Support for 2 Display Outputs (one can be a projector)
- Support for 2 HD Cameras (or document camera)
- Support for 2 HD Microphones with 22Khz minimum
  - H.239 Option - Direct VGA connection to codec for PC Content Sharing as well as wireless H.239 option for Content Sharing directly from a PC to videoconference (without additional cables/devices) at 30 frames per second
  - POTs line capability for audio add-in dialing from the codec during video conference calls
  - Ability to Upgrade to 1080p Camera/conferencing capability using same codec

Biotechnology Lab Equipment and Distribution Center

Robotics Kits

Engineering Equipment

Wireless Access Points
- Wireless N capable, G compatible
- 2.4GHz and/or 5GHz support
- WPA/WPA2/802.1x Security
- Compatible with local management system as required

GaDOE-Recommended Standard Lab Equipment

Software (potential examples listed below)
- GIZMOS
- Logger Pro 3 Software (site license)
- Biology with Computers Software
- Biology with TI Calculators Software
- Chemistry with Computers Software
- Chemistry with TI Calculators Software
- Defined Learning Subscription http://stem.definedlearning.com/

Graphing Calculators
- TI-Nspire
- TI-Nspire Navigator Classroom

Interactive Whiteboard
- 65"x45" or better
- Short-throw video projector, 2000 lumens or better (if needed)
- Includes all needed mounting hardware and cables
- Includes appropriate instructional and management software
- Acceptable Alternative: Video projector with built-in white-board capability
  - Requires clean, white wall space of appropriate size
- Installation/wall-mounted

Student Response System
- All day use capability
- LCD display for instructions, prompts, questions
- Multiple question type support including multiple choice, true/false, survey, fill-in-the-blank, and more.
- Unique student/teacher logins
- Software for question creation, data collection and display, system management
- Acceptable Alternative: Software based response system using laptops and/or hand-held devices (Ex: Poll Everywhere)

Document Camera
- 1280x960 resolution or better
- 10"x14" capture area or larger
- Built-in illumination
- 8x optical zoom or better
- Autofocus
- Transparency capability
- Image memory/freeze capability
- Capture image to PC capability with software
- Connection: USB and SVGA/DVI

RECOMMENDATED MINIMUM INFRASTRUCTURE SPECIFICATIONS

Recommended Workstation:
To be successful implementing this grant, school workstations should meet the minimum standards for a "modern" computer as defined by the GaDOE Technology Inventory: Equal to or better than 1 GHz or faster processor, 1 GB of RAM, network capable or any Intel-based Macintosh – and thick/thin client workstation connected to any hosted solution. Further, workstations should be current on OS updates and have updated antivirus, anti-spyware, and firewall software installed.

Recommended School Network:
To be successful implementing this grant, the network in the school should consist of minimum 100BaseT switched connections in the classrooms (or wireless G or N) and gigabit connections between wiring closets.

Recommended Internet Connection:
To be successful implementing this grant, connection to the internet should be robust enough that a student or teacher typically experiences sub-second responses as they interact with various web sites. This would be accomplished via a 3 mbs or better connection to the school and a 45 mbs or better connection to the school system. This grant also REQUIRES certification from the LEAs Internet Service Provider that the district is able to purchase and implement a dedicated minimum 512K connection to the Internet for support of an HD video conferencing connection with IP address associated with the dedicated connection.

APPENDIX B: Cover Sheet – ARRA – REQUIRED
Georgia Department of Education
21st Century STEM Lab Competitive Grant

A. Name of School/Local Education Agency (LEA) Applicant:

System Name:	3-digit System Number:	Funding Amount Not to Exceed $691,109
Superintendent's Name:		

B. School/LEA Applicant Contact:
(List the person who can answer questions about this application and who will receive official correspondence regarding this grant.)

Name:	Title:	Email:	Phone

C. Leadership Team: (**Role 1** = Grant Teachers **2** = Building Level Admin. **3** = District Technology Coordinator, **4** = Higher Ed STEM instructors/researchers **5**= STEM industry representatives)

Name:	Email:	Role for Leadership Team:

D. Schools to be Served:

School Name and 4-digit School Code:	Grade levels and Names of grant courses:	Number of Sections of each Course	Approx. Number of Students to be Served	Number of Teachers to Receive Training

E. Partner(s): (Government agencies, businesses, not-for-profits, and/or other school systems that will serve as official partners for this grant.)

Organization	Contact Person	Email	Phone

APPENDIX C: Assurances – Page One – ARRA – REQUIRED
Georgia Department of Education
Enhancing Education Through Technology (Ed Tech) Competitive Sub-grants

As a condition of receiving the state and federal funds for which application is made, the applicant's local board of education (Applicant) assures the following as required by the Elementary and Secondary Education Act (ESEA), No Child Left Behind (NCLB), in general, and Title II, Part D (Enhancing Education Through Technology) of NLCB which authorizes funding for this program. The text of the entire legislation is available online at http://www.ed.gov/legislation/ESEA02/:

GENERAL ASSURANCES

Supplement Not Supplant

Funds provided under these programs will supplement, not supplant federal, state, and other local funds that the applicant would otherwise receive.

Legal Compliance/Debarment/Lobbying/Reporting

1. Each program will be administered in accordance with all applicable federal and state statutes, regulations, program plans, and applications.
2. The control of funds provided under each program and title to property acquired with program funds will be in a public agency.
3. The Applicant will administer funds and property to the extent required by the authorizing statutes.
4. The Applicant will adopt and use proper methods of administering each such program, including;
    a) The enforcement of any obligations imposed by law on agencies, institutions, organizations, and other recipients responsible for carrying out each program; and
    b) The correction of deficiencies in program operations that are identified through the audits, monitoring, or evaluation.
5. The Applicant will cooperate in carrying out any evaluation of each such program conducted by or for the State Educational Agency, the Secretary of Education or other Federal officials.
6. The Applicant will use such fiscal control and fund accounting procedures as will ensure proper disbursement of, and accounting for, federal and state funds paid to Applicant under each program.
7. The Applicant will make reports to the State educational agency and the Secretary of Education as may be necessary to enable the agency and the Secretary to perform their duties under each program.
8. The Applicant will maintain such records, provide such information, and afford access to the records as the State educational agency or the Secretary of Education may find necessary to carry out the State educational agency's or the Secretary's duties.
9. In accordance with Part 85 of 34 CFR, neither the Applicant nor its principals are presently debarred or suspended from participation in programs by any federal agency.
10. In accordance with Part 82 of 34 CFR, funds will not be used for lobbying the executive or legislative branches of the federal government in connection with contracts, grants or loans and will report payments made with inappropriate funds for lobbying purposes.
11. The Applicant will comply with requirements of Sections 436 and 441 of the General Education Provisions Act (GEPA).
12. The Applicant will file reports in formats and at times specified by the Georgia Department of Education and/or the United States Department of Education.
13. The Applicant will cooperate in carrying out any evaluation of each program conducted by or for the State educational agency, the Secretary or other Federal officials.
14. The Applicant is in compliance with all required federal Civil Rights Statutes including:
    a) Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, creed, or national origin.
    b) Title IX of the Educational Administration Act of 1972, which prohibits discrimination on the basis of gender.
    c) Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, which prohibits discrimination on the basis of physical handicap.

Assurances (continued) – Page Two ARRA – REQUIRED
Georgia Department of Education
Enhancing Education Through Technology (Ed Tech) Competitive Sub grants

Professional Development

The Applicant has adopted a policy that provides for the preparation and implementation of a comprehensive program for staff development.

Technical Assistance

The Applicant will provide technical assistance and support to programs identified in this application.

Drug-Free Workplace and Community Act Amendments

In accordance with the federal Drug-Free Workplace and Community Act Amendments of 1989, the Drug-Free Workplace Act of 1988 and State Board of Education Policy GAM, Staff Rights and Responsibilities: Drug and Alcohol Free Workforce, the applicant declares that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance, marijuana, or dangerous drug is prohibited at geographic locations at which individuals are directly engaged in the performance of work pursuant to this application. In addition, Policy GAM prohibits the unlawful possession, use, manufacture, distribution or sale of alcohol in the workplace.

TITLE II, PART D – ENHANCING EDUCATION THROUGH TECHNOLOGY
PROGRAM-SPECIFIC ASSURANCES

1. Ed Tech Program funds will be used to:
    *   Serve students as outlined in the GaDOE Call for Proposal for ARRA Ed Tech Competitive Grant application at GaDOE Title II, Part D web page at FY10 Title II, Part D ARRA Competitive Grants.
    *   Promote high levels of academic achievement and student technology literacy.
    *   Increase student and teacher access to and use of technology for the purposes of learning and teaching.
    *   Increase the effective uses of technology to support standards-based, research-supported instructional models.
2. A minimum of 25% of Ed Tech Program funds will be used to provide high-quality Professional Learning/Staff Development programs targeted toward effectively integrating technology into curriculum and instruction.
3. A maximum of 5% of any competitive Ed Tech Program funds may be set aside by the SEA to be used for administrative purposes.
4. When equipment is purchased with Ed Tech Program funds, it will meet minimum state specifications for hardware purchases or exceed as outlined in the GaDOE Call for Proposals for ARRA Ed Tech Competitive Grant application.
5. Eligible private schools in the school system's service region will be invited to assist in formulating a plan for Ed Tech Program funds, and private school students from participating private schools will receive equitable services in this plan.

By signing below, you are indicating that you have read and understand the Assurances for Title II, Part D.

_____   _____
Signature of Superintendent or Project Director   Date

APPENDIX D: Private School Consultation – ARRA – REQUIRED
Georgia Department of Education
Enhancing Education Through Technology (Ed Tech) Competitive Sub grants

According to federal guidelines, LEAs and eligible local entities must engage in timely and meaningful consultation with appropriate private school officials during the design and development of programs and continue the consultation throughout the implementation of these programs. This consultation must take place before the LEA makes any decision that affects the opportunities of eligible private school students, teachers, and other educational personnel to participate in the program. Therefore, the consultation must begin during the development of the local grant proposals. LEAs and local entities must provide, on an equitable basis, special educational services or other benefits that address the needs under the program of children, teachers, and other educational personnel in private schools in areas served by the LEAs and local entities. The services and programs provided by the LEA do not have to be identical to those offered to public school students and teachers. Expenditures for educational services and other benefits for private school children, teachers, and other educational personnel must be equal, taking into account the number and educational needs of the children to be served, relative to the expenditures for participating public school children.

Signatures on this form serve as assurance that your district has had timely and meaningful consultation with appropriate school officials during the design and development of the grant.

☐ There are no private schools located within the boundaries of the school district.
If you check this box, you do not need to complete the remainder of the form except to sign it.

☐ *Check here if eligible schools chose NOT to participate.*

Please check the methods of contact made by the applicant to the eligible private schools prior to submitting this application to determine interest in participating in the grant.

☐ *Letter/fax* (include copy of letter/fax and list to whom sent)

☐ *Documented telephone call(s)* (include a copy of documentation and list of those called)

☐ *Meeting* (include copy of agenda and list of attendees

☐ *E-mail* (include copy and to whom sent)

Please list the private schools that have elected to receive equitable service from this grant, if awarded.

Private School:	Estimated enrollment:

Total number of private school teachers estimated to participate in training during the grant period: _____

To the best of our knowledge and belief, all data in this application is true and correct. We certify that we have had timely and meaningful consultation with appropriate nonpublic school officials during the development of this Title II, Part D Ed Tech ARRA grant.

Signature of Superintendent or Project Director	Date

APPENDIX E: Prescribed Professional Development Series

The Professional Development Series provided in this guidance document provides the LEA with a general idea of the professional development required by this grant. Detailed requirements and purchasing information will be provided upon grant award.

Initial Instructional/Technical Support

Pre-application and Application Support
- Review grant guidance and discuss details
- Provide schools/LEAs with assistance in writing grant applications
- Provide guidance and quotes on equipment purchases and budget allocations
- Work with grant schools to provide information on equipment that meets minimum hardware/software specifications

Technology Purchase and Installation
Collaborate with schools for all hardware purchases in order to gain quantity discount pricing
- Conduct a site infrastructure visit and survey by a GaDOE Certified Technical Support Technician and LEA Technology Director to include: adequacy of networking infrastructure, wireless capacity and security, classroom lighting and electrical capacity, projection systems, bandwidth capacity, level of technical support and room layout
- Prepare a report and provide site infrastructure recommendations to insure the optimal equipment set-up, upgrades and internet connectivity
- Install Equipment (Equipment for all participating schools/LEAs must be ordered, delivered, and installed and verified by GaDOE Certified Technical Support Technician/State Technical Support member by start of the 2010-2011 school year.)
- Tech support including initial meetings, infrastructure recommendations, equipment installation, and ongoing maintenance will total 30-75 hours(based on percent of dollars allocated for PD and local technical readiness)

Professional Development

Initial Orientation Meeting After Grant Award
- Grant administration, teachers, LEA technical people and State professional trained staff members should attend a kick-off meeting
- Initial meeting to be conducted via Elluminate or Polycom
- The following topics will be discussed:
  - Grant timeline including benchmarks and due dates
  - Requirements, goals and outcomes
  - Laying the groundwork and foundation for building both technical skills and collaboration skills
  - Logins for specific collaboration sites
  - Professional learning overview
  - Grant team members' roles/outcomes
  - Pre and post 21st Century Skills assessment will be discussed at this meeting

Teachers
- Professional development will be blended (face to face, video conference, Elluminate and Moodle) for a total of 30-75 hours (based on dollars allocated for PD) (ISTE NETS-T Standard 1d, 5; NSDC Process Standard Evaluation and Collaboration, NSDC Context Learning Communities; PL 1.1, 1.2, 1.5, 1.6, PL 2.4, 2.5, PL 3.3)
- Provide 30-75 hours (based on dollars allocated for PD) onsite instructional support in the teachers classrooms and labs

- Coordinate, facilitate, and support teacher-to-industry interactions and work experiences (ISTE NETS-T Standard 1b, 1d, 2a, 2c, 3b, 3c, 3d, 5a, 5c; NSDC Context Learning Communities, NSDC Process Evaluation and Design)
- Provide basics and content-specific training on technology integration to increase student engagement in STEM projects and technology literacy (ISTE NETS-T Standard 1, 2, 4b, 4d, 5a; NSDC Process Standard Design; PL 1.5, 2.5, 3.2, 3.3)
- Provide hands-on training on the grant equipment (interactive whiteboards, student response systems, laptops, Nspire, Navigator, probe ware, microscopes, software, etc) (ISTE NETS-T Standard 2, 3b, 3d, 4b, 5a, 5b, 5d; NSDC Content Resources, Process Design; PL 1.5, 1.6)
- Provide training on how to access and collaborate using the digital repository (Moodle, wiki, website, etc) (ISTE NETS-T Standard 1b, 1c, 1d, 2a, 2b, 2c, 3, 4, 5a, 5b; NSDC Context Standard Learning Communities and Resources, Process Standard Collaboration; PL1, 2.4, 2.5, 3.2, 3.3)
- Assist teachers with requirements such as the creation of cross-curricular projects that can be shared statewide via the digital repository, and reflecting and posting on Moodle (ISTE NETS-T Standard 1b, 1d, 2, 3a, 3b, 3c, 5a; NSDC Content Standards; PL 1.1, 2.4, 2.5, 2.7, 3.2, 3.3)
- Provide instructional best practices for using technology in a variety of settings for teachers and students; including helping students to design, develop and support STEM projects, etc. (ISTE NETS-T Standard 4a, 4d; NSDC Process Standard Design and Learning; PL 1, 2, 3)
- Assist with regular grant teacher meetings in which grant teachers are developing interdisciplinary, inquiry-based, authentic STEM projects, determining the impact of the student activities on student academic growth in mathematics, science, CTAE, and STEM, making decisions and planning for continued improvement (ISTE NETS-T Standard 1d, 5; NSDC Context Standard Resources, Process Standard Collaboration; PL 1, 2, 3)
- Regularly assess project progress via classroom visits/observations including completion of an observation form, digital still and video recordings, and reflections on Moodle (ISTE NETS-T Standard 2d, 5; NSDC Context Standard Leadership, NSDC Process Standard Evaluation; PL 2.1, 2.2, 2.3)
- Provide training on and assist teachers in updating of all Lab Safety rules and guidelines to incorporate the new technologies and tools into the existing labs and classrooms (NSDC Content Standard Equity; PL 3.1)
- Provide training on and assist teachers in establishing Lab Safety rules and guidelines for the new STEM labs (NSDC Content Standard Equity;' PL 3.1)

Administration
- Provide appropriate and necessary technology support for effective use of 21st Century STEM technology by participating teachers and students. (ISTE NETS-A 1, 2, 3, 4, 5; NSDC Context Standard Leadership and Resources; PL 1)
- Work with grant school to implement a standard 21st Century Skills pre and post assessment (p5) (ISTE NETS-A Standard 2d; NSDC Process Standard Data-Driven; PL 2.1, 2.2)
- Assist with formative and summative grant observations and external evaluation (ISTE NETS-A 2d, 4b; NSDC Process Standard Data-Driven and Evaluation; PL 2.1, 2.2)
- Assist with utilizing the grant identified GaDOE *Keys to Quality: Unlocking Continuous Improvement* resources and related classroom observation tools to inform and guide implementation of the grant outcomes (PL 2.1, 2.2)
- Use polycom, Elluminate and other technologies to assist administrators to collaborate, coordinate and share plans, activities and status of their grant participants with other grant schools across the state (ISTE NETS-A 2e, 3b, 3c, 3d; NSDC Context Standard Learning Communities and Leadership; PL 1, 2.4, 2.5, 3.3)
- Administrators will participate in CyberSafety Training Modules and redeliver modules to faculty/staff, and in Technology Leadership Training (ISTE NETS-A 5; NSDC Content Standard Equity and Family involvement; PL 3.1)

<u>Technical Staff</u>
- Provide onsite technical support and "just in time" technical support via phone or email (NETS TL-V B, C6, C7, C8, TL-VII A)
- Provide technical training blended (face to face, video conference, online) in support of the grant goals and outcomes (TL-I B, TL-V A, B, D; NSDC Process Standard Evaluation and Collaboration, NSDC Context Learning Communities; PL 1.1, 1.2, 1.5, 1.6, PL 2.4, 2.5, PL 3.3)
- Ongoing Polycom support
- Assist in development and implementation of bandwidth allocation procedures in support of Polycom system
- Technical staff will participate in CyberSafety Training Modules and redeliver modules to faculty/staff, as well as participate in Technology Leadership Training (NETS TL-VI A, D; NSDC Content Standard Equity and Family involvement; PL 3.1)

<u>Technology and curriculum content integration</u>
Note: According to Elementary Secondary Education Act legislation and US-ED Program Guidance, the primary goal of the Ed Tech program is to improve student academic achievement through the use of technology (see http://www.ed.gov/programs/edtech/guidance.doc and http://www.ed.gov/policy/elsec/leg/esea02/pg34.html#sec2401).
- Create a repository for activities, materials, videos, collaboration, images, information (Moodle, wiki, website, etc.) (ISTE NETS-T 5a; NSDC Process Standard Collaboration, NSDC Context Learning Communities; PL1, 2.4, 2.5, 3.2, 3.3)
- Provide PD and support for using elluminate and polycom video system to collaborate on specific topics to include robotics, biotechnology, CTAE, industry experiences, mathematics, science, engineering (ISTE NETS-T 1, 2a, 2b, 2c; NSDC Process Standard Collaboration, NSDC Context Learning Communities)
- Facilitate collaboration among the STEMs Governing Boards (partners) utilizing elluminate and polycom video system (ISTE NETS-A 1a, 3b, 4b)
- Provide statewide professional growth opportunities in specific content areas utilizing an interdisciplinary approach supported by the various technologies of the grant (ISTE NETS-A 2e, 3b, 3d, 4b; NSDC Context Standard Learning Communities and Resources, Process Standard Collaboration, Context Standard Quality Teaching; PL 1.1, 1.2, 2.5, 2.6)
- Facilitate school-to-school networking (ISTE NETS-A 2e, 3b, 3d, 4b; NSDC Context Standard Learning Communities and Resources, Process Standard Collaboration)

APPENDIX F: ETC/RESA Agreement & Grant Sign-Off – ARRA - REQUIRED

This grant proposal has been reviewed and accepted by the ETC/RESA. The ETC/RESA agrees to serve as a partner in guiding and implementing this grant award as outlined in the submitted grant proposal. The ETC/RESA director and staff agree to work with the LEA to fulfill the grant requirements as outlined below:

1. The ETC/RESA has read the grant proposal that is being submitted to fulfill the Grant Application Guidance for the FY10 ARRA Title II, Part D: Enhancing Education Through Technology (Ed Tech) Competitive Grant.

2. The ETC/RESA agrees to serve as the professional development provider in conjunction with the Georgia Department of Education to fulfill the professional development requirements of this grant as outlined in the Grant Application Guidance for the FY10 ARRA Title II, Part D: Enhancing Education Through Technology (Ed Tech) Competitive Grant.

3. The ETC/RESA agrees to serve as the instructional & technical coach to the grant school to provide onsite instructional support and onsite technical support for the grant as prescribed in the professional development (Appendix E.)

ETC or RESA Director

Signature

Date

Disclaimer: If the professional development does not meet the requirements as agreed upon, then the GADOE reserves the right to re-assign the prescribed professional development to another provider or require documented corrective action.

APPENDIX G: ETCs and RESAs
Educational Technology Centers (ETCs)

Albany State University ETC
Dr. Janis Carthon, Director
229-430-1838
janis.carthon@asurams.edu

Armstrong Atlantic State University ETC
Wendy Marshall, Director
912-344-2633
wendy.marshall@armstrong.edu

Chattahoochee Flint ETC
Bunny Harris, Director
229-937-5341
bharris@chattflint.org

First District ETC
Lisa Burkhalter, Director
912-842-5000
lburkhalter@fdresa.org

Dalton State College ETC
Judy McEntyre, Director
706-272-2045
jmcentyre@dscettc.org

Macon State College ETC
Ed Gowen, Director
478-471-5380
egowen@etcmcn.org

Kennesaw State University ETC
Dr. Brent Williams, Director
770-423-6573
brwillia@kennesaw.edu

Heart of Georgia ETC
Aleph Fore, Director
478-374-2240
afore@hgresa.org

National Science Center ETC
Jimmy Bostock, Director
706-821-0631
bostockj@ettcnsc.org

Pioneer ETC
Elizabeth Crews, Director
706-865-2141
ecrews@pioneerresa.org

University of Georgia ETC
Dr. John Wiggins, Director
706-542-0240
jwig@uga.edu

Valdosta State University ETC
Mimi McGahee, Director
229-249-2781
mmcgahee@valdosta.edu

West Georgia ETC
Dr. Barbara Bishop, Director
770-583-2528
bbishop@wgretc.org

ETCs and RESAs (continued)

Regional Educational Service Agencies (RESAs)

Central Savannah River Area RESA
Gene Sullivan, Executive Director
706-556-6225
gsullivan@csraresa.org

Chattahoochee RESA
Norman Carter, Executive Director
229-937-5341
ncarter@chattflint.org

Coastal Plains RESA
Harold Chambers, Executive Director
229-546-4094
hchambers@cpresa.org

First District RESA
Shelley Smith, Executive Director
912-842-5000
ssmith@fdresa.org

Griffin RESA
Dr. Stephanie Gordy, Executive Director
770-229-3247
sgordy@griffinresa.net

Heart of Georgia RESA
John Key, Executive Director
478-374-2240
jkey@hgresa.org

Metro RESA
Dr. Fran Perkins, Executive Director
770-432-2404
fran.perkins@mresa.org

Middle Georgia RESA
Carolyn Williams, Executive Director
478-475-8613
carolyn.williams@maconstate.edu

North Georgia RESA
Larry Harmon, Executive Director
706-276-1111
lharmon@ellijay.com

Northeast Georgia RESA
Dr. Russ Cook, Executive Director
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Pioneer RESA
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Southwest Georgia RESA
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West Georgia RESA
Ronnie Williams, Executive Director
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APPENDIX H: System Letter of Commitment – ARRA – REQUIRED

To: Title II, Part D Program Manager
         Georgia Department of Education
         1970 Twin Towers East
         205 Jesse Hill Jr. Drive SE
         Atlanta, GA 30334

From: (School System Name) Leadership Team Members

Date:

All members of the (School System Name) ARRA Title II, Part D: 21st Century STEM Lab Competitive Grant Leadership Team are fully supportive of the efforts to begin a journey to build a model for 21st Century STEM Lab that can be replicated in other school districts across Georgia. We further understand and agree that competitive funding will also support access to job-embedded professional development in the use of technology to enhance the instructional quality of the grant classrooms. We further commit to aligning all activities to the grant outcomes as stated on page 2 of the ARRA Grant Application and Guidance. We have read, understand, and support our ARRA Title II, Part D 21st Century STEM Lab Competitive Grant Application.

We, the teachers and administrators, willingly commit to participate in and complete a rigorous professional development sequence designed to engage in student-centered instructional change focused on involving students in highly relevant, rigorous and engaging work. The team members understand that the equipment, software and related resources that are purchased with federal grant funds belong to the school and not the teacher; therefore, is the property of the LEA in accordance with federal Title II, Part D guidelines.

The System-Level Administrative Teams and Departments are also firmly committed to providing all aspects of support necessary to ensure the complete success of the ARRA Title II, Part D: 21st Century STEM Lab Competitive Grant.

We agree to provide a waiver request to the GaDOE Title II, Part D program staff in the event of any personnel changes in the Leadership Team.

Sincerely,

		Grant School	
System (LEA) Superintendent	_____	Administrators (please sign below)	_____
District IT Coordinator	_____		
CTAE Director	_____		
Grant Teachers from CTAE, mathematics, and science (please sign below)		Post Secondary Instructors (please sign below)	_____

APPENDIX I: Waiver Process

A waiver should:

1. Be written on district letterhead
2. Be dated
3. Contain the name and signature of the person submitting the waiver
4. Consist of a brief paragraph explaining what the waiver is for and why it is needed
   o Equipment changes
     ▪ For equipment other than the grant equipment, please provide the reason why this equipment should be purchased.
     ▪ To use existing equipment instead of new equipment, please provide information (signed statement from selected ETC or RESA) that verifies the existing equipment meets the specifications of the grant, and explain how that money will be used instead.
   o Personnel changes
     ▪ Please provide the name of the grant team member no longer participating in the grant and the reason that person is leaving the grant team.
     ▪ Please provide the name and email address of the new team member.
5. Be emailed to the GaDOE contact person for the Title II, Part D grant.
   o GaDOE contact will e-sign and return to LEA
   o LEA will upload to the Consolidated Applications Website