

## ***REQUEST FOR PROPOSALS***

**Commonwealth Information Technology Initiative:  
Request for Proposal to support curriculum and program  
development in high and vocational schools which create  
pathways to fuel the IT workforce pipeline**

**Proposals must be submitted electronically by February 9, 2007, 5:00 p.m.**

A Project of the Commonwealth Information Technology Initiative (CITI) funded through the  
2006 Economic Stimulus Bill and  
Managed by the University of Massachusetts Donahue Institute

December 11, 2006, Revised January 5, 2007



## **Request for Proposal to support curriculum and program development in high and vocational schools which create pathways to fuel the Information Technology (IT) workforce pipeline**

The goal of this RFP is to distribute funds to support curriculum/program development designed to help high school and vocational school teachers and guidance counselors identify, generate and replicate curriculum, programs and activities which create pathways to fuel the IT workforce pipeline. The objective is to teach students 21<sup>st</sup> century IT skills<sup>1</sup> so they can continue their education at institutions of higher education and secure jobs in today's and tomorrow's ITC<sup>2</sup> infused world. The work is to be done in partnership with community and four year college faculty.

This curriculum/program/activity development will be accomplished through a two-week summer institute, half days (or an acceptable equivalent alternative), provided either by a higher education institution or collaborative or a combination of both. Schools, school districts and collaboratives may apply. The institutes will be offered to no more than 25 participants in a session.

These institutes will be followed by pilot implementations and assessment of the curriculum. At the conclusion of the CITI Summer Institutes, a CITI Certificate will be awarded to attendees to signify the person has participated in and is prepared to act as a leader in his/her school and support other teachers in their adoption and adaptation of the curriculum and instructional practices of 21st century IT skills. These educators will be known as CITI Ambassadors, and among other activities, will conduct CITI Seminars/Workshops as part a Professional Day or some other form of educator education. CITI will capture and promote best practices.

Applicants are encouraged to identify potential local/regional industry support for a match in funding so that CITI can work with successful applicants to reach out and secure an industry match, if possible. Applicants should indicate how they would budget for such a match.

The full proposal is available on the CITI website ([www.citi.mass.edu](http://www.citi.mass.edu)) as of December 11, 2006. A full timeline appears below.

### **Timeline:**

RFP Released	December 11, 2006
RFP Briefing Session	January 4, 2007 3pm
Final Date for Questions	January 10, 2007
Letter of Intent	January 15, 2007
Proposals Due	February 9, 2007
Awards Announced	March 6, 2007
Project Activities	Spring, Summer, early Fall, 2007
Mid Project report	September 5, 2007

<sup>1</sup> We recommend that potential applicants read the Massachusetts Recommended PreK-12 Instructional Technology Standards ([www.doe.mass.edu/edtech/standards.html](http://www.doe.mass.edu/edtech/standards.html)) which are currently being updated. The revised version will be available upon request.

<sup>2</sup> ITC is Information and Communication Technology and is derived from the work of the Partnership for 21<sup>st</sup> Century Skills. See the last page for a list of these skills.

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Final Project Report	November 5, 2007
Showcase Conference	October 17, 2007

### ***Background***

#### **Technology as the “New Fundamental” Skill in the 21<sup>st</sup> century**

The continuing growth of technology in society makes it necessary to continue to rethink the way it is integrated into teaching in high schools. Students require a new set of skills known as 21<sup>st</sup> century skills that include Information and Communication Technology (ICT) skills. Students also benefit from an “information technology across the curriculum” (or ITAC) approach. ITAC ensures that K-12 students use technology in all their classes for learning.

Several reports have been published that underscore the importance of preparing today’s students for the increasingly knowledge-based economy they will encounter as adults. Mass Insight Corporation, in its report, “Choosing to Lead,” points out that today’s global economy is “driving a new model of competition, one whose goal is to leverage innovation to drive economic growth within a state or region.”<sup>3</sup>

CITI’s outreach to stakeholders in education, industry and government has indicated that most economic sectors in MA are ICT-intensive, particularly those that are growing (pharmaceuticals, biotech, tourism, education). Industries that develop ICT have stabilized and indicate that the general workforce requires 21st century skills. In addition, P-12 graduates are unaware of the opportunities for ICT specialists across all sectors and that P-12 graduates, particularly underrepresented groups and those from economically depressed regions, lack adequate preparation for Information and Communication Technology and Information and ICT-related higher education programs.

Massachusetts’ future as a robust and vital center of economic activity is dependent on a workforce that is fluent in the use of information technology tools as well as able to understand the underlying principles and potential applications of information technology and to understand how technology influences the way we think and manage information. In addition to traditional computer-science graduates, the workplace increasingly requires ICT fluency for workers in a wide variety of industries and occupations, from finance and health care to manufacturing and retail. CITI believes that public school educators play a vital role in providing skills, knowledge and learning opportunities that will help all youth to enter the ICT workforce pipeline.

We recommend that potential applicants read the Massachusetts Recommended PreK-12 Instructional Technology Standards ([www.doe.mass.edu/edtech/standards.html](http://www.doe.mass.edu/edtech/standards.html)) which are currently being updated. The revised version will be available upon request. While these are labeled as Instructional Technology Standards, the principles directly relate to IT fluency.

The point of this solicitation is to support programs that facilitate active student learning of 21<sup>st</sup> century IT skills in all subjects and to equip teachers to integrate 21<sup>st</sup> century IT skills into curriculum by developing or adapting the curriculum which enables that to happen. It is also to help guidance counselors promote IT careers with the most recent information.

#### **Background/CITI**

The Commonwealth Information Technology Initiative (CITI) is a public private partnership

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<sup>3</sup> Choosing to Lead: The Race for National R&D Leadership & New Economy Jobs. The Massachusetts Technology Roadmap Part I. by Mass Insight Corporation and Battelle Memorial Institute. 2004.

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with the mission to increase the number of “information technology fluent” workers available for the Massachusetts’ knowledge-based economy. CITI seeks to develop IT fluent citizens through addressing key education issues at the K-12 and higher education levels.

Launched in 2000 and led by the University of Massachusetts Amherst, CITI brought together community colleges, state colleges, and the University campuses with industry and government leaders to strengthen and modernize computer science and information technology programs at public higher education institutions across the Commonwealth.

Additional information on CITI, its history and its programs is available on the CITI website at <http://www.citi.mass.edu/>

### Request for Proposals

**Goal:** To develop curriculum/program/activities designed to help high school and vocational school teachers and guidance counselors identify, generate and replicate curriculum, programs and activities which create pathways for students to fuel the IT workforce pipeline and the workforce in general by teaching them 21<sup>st</sup> century IT skills

**Grant Priorities:** Proposals will be prioritized using the following criteria:

- Understanding of the 21<sup>st</sup> century IT skills and capacity to identify/develop high quality curriculum/programs and activities which can be replicated
- Partnerships among K-12 and higher education faculty
- Future impact on student learning.
- Expertise and knowledge in promoting the skills, concepts and capabilities that support Information and Communication Technology (ICT) fluency for teachers and students.
- Participation of low-income schools/districts.
- Evidence of successful outcomes and/or a plan to generate such evidence during the grant period through evaluation.
- Potential for other groups to replicate the model in the future with similar successful results.
- Evidence of teacher leadership
- Adequate, efficient and reasonable budget to support the project.
- Plan to disseminate information for greatest possible impact including a case study<sup>4</sup> of the project

Proposals should be no longer than 10 pages not including attachments. Proposals that fail to meet these criteria will not complete the review process.

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<sup>4</sup>Case studies will be placed on the CITI website and be used for future discussions with the legislature and business.

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### Proposal Requirements

- I. Applicants must identify a lead partner (e.g., district, postsecondary institution, or collaborative) that will take responsibility for the partnership's activities under this grant
- II. Project Abstract (One page)
  - a. Contact Information (Lead Partner: Contact, Title, Organization, Address, Telephone, Email).
  - b. Names and addresses of all partners involved in the project.
  - c. One paragraph providing an overall description of the project.
- I. Narrative (must not exceed five pages). Provide a description of the proposed program that addresses the following (label each subsection with the corresponding letter).
  - a. Structured plan for the curriculum, program development / expansion experience that demonstrates how teachers will extend their knowledge and pedagogy of infusing information technology and of creating / supporting workforce pipeline preparation and how counselors can contribute to developing the pipeline
  - b. A recruitment and selection plan to secure participants for the institutes.
  - c. Continuing follow-up activities for teachers to expand and replicate these promising programs / practices after completion of the grant.
  - d. Number of schools, teachers and guidance counselors, and students that will be impacted by the proposal. Please make a special note of high need districts / schools involved in the project.
  - e. Evaluation plan that is focused on outcomes. For many projects, the purpose of the evaluation should be to demonstrate that the project has had an impact on the project's participants, or attitudes toward 21<sup>st</sup> century IT.
  - f. Timetable indicating implementation and completion dates for the project to be funded.
  - g. Dissemination plan that shows a broader impact and efforts to share the material including a case study.
  - h. The history of the partnership working together, if applicable
  - i. Indication of the impact of revisions if applicable
  - j. Individual and institutional capacity and expertise in this area.
  - k. A plan for ensuring teacher leadership
- II. Budget and Budget Narrative. Provide a detailed budget and narrative that includes:
  - a. Calculations and breakdowns of budget amounts
  - b. Description of budget items
  - c. Indication of how matching funds would be used
  - d. Please note: Institution overhead is not allowable under these grants.
- III. Attachments
  - a. Resumes of key project personnel (limited to two pages for each individual).
  - b. Evidence of matching funds, if available.
  - c. Evidence of lead partner's institutional support for the proposal.
  - d. Evidence of institutional administration support for curriculum and commitment to begin using the new or revised curriculum in fall 2006.
  - e. Copy of existing curriculum, program, activities if appropriate

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Individual grants for this program will not exceed \$30,000.

Requirement	High and Vocational School Curriculum Grants
I – Lead Partner	PI
II - Abstract	x
III - Narrative	
a) Structured plan including Recruitment/Selection	x
b) Follow-up for Educators	x
c) Capacity /Teacher leadership	x
d) Number Impacted	x
e) Evaluation Plan	x
f) Timetable	x
g) Dissemination Plan including case study	x
h) Partnership History	x
i) Impact of Curriculum Development/ Revision	x
j) Expertise	x
IV – Budget (a.b.c. required)	
a. Calculations/breakdowns	
b. Descriptions	
c. Use of matching funds	x
V - Attachments	x
a) Resumes	
b) Matching Funds, if appropriate	x
c) Institutional Support	x
d) Revised Curriculum Commitment	x
e) Copy of existing curriculum if proposing alteration	x

### **Proposal Submission:**

Proposals must be submitted electronically via the CITI website ([www.citi.mass.edu](http://www.citi.mass.edu)) as a single Word or PDF document by 5 pm February 9, 2007.

**Formatting Instructions:** Proposals should be no smaller than 11 point font (please use Palatino) and should follow the page limits above. A premium will be placed on clear and concise proposals.

**Letter of Intent:** A letter of intent is required. Letters should be sent to Isa Zimmerman at [izimmerman@umassp.edu](mailto:izimmerman@umassp.edu) by 5 pm on January 15, 2007. Your letter should include a paragraph summarizing your proposed project.

### **Deliverables**

Grantees must submit a mid-grant report, a final report and evaluation (including a case study), be available to present at CITI showcase conference on October 17, 2007 and be available for one

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year from the end of the grant period to answer questions on the model/materials they have developed for those who may be replicating.

**Timeline:** See page 2, please

The CITI website will have any addenda to the RFP. It is the responsibility of proposal writers to access RFP changes on the CITI site. Proposals are to be submitted electronically through the CITI website ([www.citi.mass.edu](http://www.citi.mass.edu)). Proposals must be uploaded in a single document. Proposal writers are asked to minimize file size for easy uploading and distribution to reviewers.

A RFP briefing session will be held on January 4, 2007 at 3 pm in the Berkshire Room at the University of Massachusetts Collaborative Services Center in Shrewsbury, MA (directions available on the CITI website). While the briefing session is not mandatory, we encourage all interested parties to attend to receive updated materials and RFP clarification. Notes from the briefing session will be available on our website. RSVP to Isa Zimmerman at [izimmerman@umassp.edu](mailto:izimmerman@umassp.edu). Attendees must RSVP to be on the security list for entry.

Questions not addressed by the briefing session can be submitted by calling Isa Zimmerman at 617-642-4733 by January 10, 2007 at 5 pm. Questions and answers will be posted on the website ([www.citi.mass.edu](http://www.citi.mass.edu)).

## CITI RFP for High and Vocational Schools

The Partnership for 21<sup>st</sup> Century Skills (<http://www.21stcenturyskills.org/>) defines 21<sup>st</sup> Century skills as follows. Please visit the site to view greater detail.

**1. 21st Century Content.** Several significant, emerging content areas are critical to success in communities and workplaces. These content areas typically are not emphasized in schools today:

- Global awareness**
- Financial, economic, business and entrepreneurial literacy**
- Civic literacy**
- Health and wellness awareness**

**2. Learning and Thinking Skills.** As much as students need to learn academic content, they also need to know how to keep learning - and make effective and innovative use of what they know - throughout their lives. Learning and Thinking Skills are comprised of:

- Critical Thinking and Problem Solving Skills**
- Communication Skills**
- Creativity and Innovation Skills**
- Collaboration Skills**
- Information and Media Literacy Skills**
- Contextual Learning Skills**

**3 ICT Literacy.** Information and communications technology (ICT) literacy is the ability to use technology to develop 21st century content knowledge and skills, in support of 21st century teaching and learning.

**4. Life Skills.** Good teachers have always incorporated life skills into their pedagogy. The challenge today is to incorporate these essential skills into schools deliberately, strategically and broadly. Life skills include:

- Leadership**
- Ethics**
- Accountability**
- Adaptability**
- Personal Productivity**
- Personal Responsibility**
- People Skills**
- Self Direction**
  
- Social Responsibility**