REQUEST FOR PROPOSALS

Commonwealth Information Technology Initiative:

Request for Proposal to Prepare Teachers to Implement Information Technology Across the Curriculum In Middle and High School Classrooms

Proposals must be submitted electronically by October 17, 2005, 5:00 p.m.

A Project of the Commonwealth Information Technology Initiative (CITI) funded through the Massachusetts Mathematics, Science, Technology & Engineering Grant Fund (Pipeline Fund) which is administered by the Board of Higher Education

Commonwealth Information Technology Initiative (CITI)
University of Massachusetts Donahue Institute
September 6, 2005

Request for Proposal to Prepare Teachers to Implement Information Technology Across the Curriculum In Middle and High School Classrooms

The goal of this RFP is to distribute funds to support programs for in-service teacher professional development and pre-service teacher curriculum development that prepare and equip teachers to create and teach Information Technology Across the Curriculum (ITAC). In order to achieve this goal, teachers must be both IT fluent and confident with teaching students technology as a "new fundamental" skill. Programs need to be developed that will serve as models for replication by other partnerships.

Proposals should contain sustainable, high quality programs for the integration of information technology throughout existing curriculum. Successful programs will provide students with an understanding of technology systems, the impact of technology and the skills necessary to utilize technology within the context of existing subjects. Simply teaching a computer application or a computer science course does not meet the goals of this proposal. Information technology must be integrated across the curriculum to provide a quality technology learning experience for students.

CITI will fund grants within the seven regions identified through the Board of Higher Education Pipeline Fund's PreK-16 Regional Networks.   These Networks bring together K-12 school districts, higher education institutions, and business and non-profit organizations in regional partnerships targeted at improving science, technology, engineering, and mathematics education. (For more information go to www.mass.edu/pipeline.)

CITI encourages (but does not require) the lead partners of the PK-16 Regional Networks to coordinate responses to this grant competition, including informing members of other submittals and providing opportunities for groups to combine proposals as appropriate. All submitted proposals must provide evidence that they have notified the lead partner of the PreK-16 Network of their intent to apply for these grants.

There are three categories of grants available:

A. Team Professional Development Grants to allow partnerships to develop programs to provide professional development to in-service teachers in information technology (IT) skills, IT understanding and the integration of IT education throughout the existing curriculum.

B. Continuing Professional Development Grants to allow partnerships currently executing CITI grants to continue working with their teachers or to bring their professional development program to a new group of teachers.

C. Pre-Service ITAC Integration Grants to allow pre-service teacher training institutions to adapt current courses to reflect the goals of ITAC and IT fluency.

The full proposal and supporting documents will be available on the CITI website (www.citi.mass.edu) on September 6, 2005. A full timeline appears below.

Timeline:

RFP Released	September 6, 2005
RFP Briefing Session	September 19, 2005
Final Date for Questions	October 7, 2005
Letter of Intent	October 10, 2005
Proposals Due	October 17, 2005 by 5 pm
Awards Announced	November 1, 2005
Project Activities	November 1 to February 28 (2006)
Mid-Project Report	January 27, 2006
Final Project Report	March 15, 2006
Showcase Conference	March 23, 2006

Background

Technology as the "New Fundamental" Skill

The continuing growth of computers in society makes it necessary to rethink the way technology is integrated into teaching in secondary schools. Students require a new set of technology 'life skills'. In an information age, teaching students in secondary schools to use digital tools (often called "educational technology" or "ed tech") is only the first step. Students will benefit much more from an "information technology across the curriculum" (or ITAC) approach, through which **they learn not only to use, but to design, create, and assess digital tools and electronic information**. ITAC ensures K-12 students think critically and creatively about information and technology in all their classes. In this way, learning and using technology become a centerpiece of all school activity from mathematic, the sciences, to English, history and the arts and computers.
Several reports have been published recently 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."[1]

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. In addition to traditional computer-science graduates, the workplace increasingly requires IT 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 succeed in an increasingly technology oriented workforce.

What is Information Technology Fluency?

The National Research Council, in its report titled Being Fluent with Information Technology defines IT fluency by describing three types of IT knowledge: Skills, Concepts and Capabilities.

- o **Skills** refers to proficiency with contemporary computer applications such as email, word processing and web searching. Skills give students practical experience upon which to base other learning.

- o **Concepts** refers to the fundamental knowledge underpinning IT, such as how a computer works, digital representation of information, assessing information authenticity. Concepts are the principles on which students will build new understanding as IT evolves.
- o **Capabilities** refers to higher-level thinking processes such as problem-solving, reasoning, complexity management etc. Capabilities embody modes of thinking that are essential to exploiting IT which students apply broadly. [2]

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[1] 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.
[2] Taken from Fluency with Information Technology, Lawrence Snyder, Pearson Education, 2005.

We recommend those considering applying for grants read the Massachusetts Recommended PreK-12 Instructional Technology Standards (www.doe.mass.edu/edtech/standards.html). While they 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 technology skills, concepts and capabilities. This is not simply to provide teachers with technology skills (or knowledge of a particular application), but to equip them to integrate active technology learning across all curriculum areas.

Students must be actively learning technology skills, concepts and capabilities. This is not simply to provide teachers with technology skills (or knowledge of a particular application), but to equip them with the ability to integrate active technology learning across all curriculum areas.

Background/CITI

The Commonwealth Information Technology Initiative (CITI) is a public private partnership whose mission is to increase the number of "information technology fluent" workers available for the Massachusetts' knowledge-based economy. CITI seeks to develop "informational technology 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.

With current funding, CITI will build on early successes by institutionalizing and disseminating higher education ITAC programs and extending the model into the K-12 environment. CITI's current projects, funded by the Massachusetts Pipeline Fund and an anonymous private-sector sponsor, bring together industry and public education institutions to improve information technology (IT) education at the K-12 and postsecondary levels. During the 2004-2006 school years CITI will maintain a specific focus on promoting information technology across the curriculum programs. The CITI K-12 program is managed by the University of Massachusetts Donahue Institute.

CITI is relatively new to the world of K-12 education. Our 2004 funding allowed us to bring the concepts that are successful in higher education to K-12. With respect to ITAC in the school context, we have the following two goals:

Pipeline – To create a broad exposure to technology and technology-related career possibilities. It is especially important to reach student groups currently under represented in technology and computer science fields such as women and minorities.

Technology Fluency – Realizing the world is evolving into a place where technology skills and understanding are necessary for most jobs and to functioning in society, beginning the process of building those skills at the K-12 level is crucial.

We want to integrate technology throughout the K-12 curriculum and produce graduates fluent in technology as well as having an impact on existing teacher licensure, student testing standards and to reflect technology as "the new fundamental".

Additional information on CITI and its programs is available on the CITI website at www.citi.mass.edu.

Request for Proposals

Goals: There are two goals of this RFP. The first is to develop Information Technology Across the Curriculum (ITAC) programs across Massachusetts public schools. In order to achieve this goal, it is essential that teachers be IT fluent and confident in their teaching of technology as the "new fundamental" skill.

The second goal of the RFP is to develop replicable models of K-12 teacher professional development through PreK-16 partnerships. Teachers will receive training in district teams to provide a mechanism for ongoing support after training is completed. The pre-service teacher grants will help new teachers understand the ITAC concept and prepare them to integrate it in their own classrooms. (How does the industry match fit into the goals? Should this be a separate paragraph and have some context attached to it?) By encouraging industry matches, we also hope to help spur fundraising to produce sustainable programs.

Types of Grants: There will be three types of grants.

A. <u>Team Professional Development Grants</u> – Available to partnerships with higher education or education collaboratives as lead partners, to conduct professional development for teachers in IT skills, IT understanding and the integration of IT education throughout the existing curriculum in middle and high schools throughout Massachusetts. These educational institutions will work with school districts (and show evidence of inclusion of high needs districts) to recruit teams of three participants from within each district (including teachers and no more than one administration or technology support person) to attend professional development events. The training will need to have at least one follow up event for teachers to share their classroom experiences, troubleshoot issues and provide support. Partnerships should be comprised of public higher education or educational collaborative institutions, industry, and public school districts within the PreK-16 STEM networks. Lead partners must notify network leaders of their intent to propose in order for the network leaders to coordinate possible efforts within the network region. *Up to $30,000 each*

B. <u>Continuing Professional Development Grants</u> – These grants may go to programs currently funded by CITI to continue the efforts, either by enrolling a new group of teachers for professional development (*up to $20,000 each*) or for continued follow up on previous professional development activities (*up to $5,000 each*).

C. <u>Pre-Service ITAC Integration</u> – These grants are available to pre-service teacher training institutions (or partnerships which include pre-service teacher training institutions) to adapt an existing course to reflect the goals of ITAC and IT fluency. This may be providing an understanding of technology, an understanding of the implications of technology, or methods of integrating Information Technology Across the Curriculum in the classroom. Pre-Service institutions may wish to partner with other departments or institutions that have previously developed ITAC courses. A list of non-computer science/engineering ITAC courses is available on the CITI website (www.citi.mass.edu). Applicants are encouraged to consider offering the course online to enhance the technology aspects of the course and allow a wider audience. *$3,000 to $8,000 each.*

Grant Priorities: Proposals will be prioritized using the following criteria:
- Understanding of the ITAC concept and capacity to deliver a long term and quality professional development experience for teachers and administrators from multiple school districts. (Applicable to applications for A and B grants.)
- Future impact on student learning.
- Expertise and knowledge in promoting the skills, concepts and capabilities that support IT fluency for teachers and students.
- Participation of low-income schools/districts. (Applicable to application for A and B grants.)
- 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.
- Adequate, efficient and reasonable budget to support the project.
- Plan to disseminate information for greatest possible impact.

Proposals that fail to meet these criteria will not complete the review process.

Proposal Requirements

I. Applicants must identify a lead partner (e.g., district, postsecondary institution, or collaborative) that will take responsibility for the partnership's regional activities under this grant. (A, B) For C grants (which don't require a partnership), a principal investigator and institution must be identified.

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. The category of grant for which you are applying.
   d. One paragraph providing an overall description of the project.

III. 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 a professional development experience for in-service educators and (optional) administrators to extend their knowledge and pedagogy of infusing information technology in core academic courses. (A, B)

   b. List of best practices from the PreK-16 Network region that will be featured as models in the professional development program, including contact information for each. (A, B)

   c. Activities that will enable the target group of educators to learn about and share existing promising practices (for IT integration in academic curriculum) in the partnership region. (A, B, C)

   d. Continuing follow-up activities for teachers to expand and replicate these promising practices after completion of the grant. (A, B)

   e. Capacity of the applicant partnership to develop and deliver high quality professional development training and follow-up activities that support identified grant priorities. (A, B, C)

f. Number of schools, teachers, and students that will be impacted by the proposal. Please make a special note of high need districts/schools involved in the project. (A, B) (Is there a standard for "high need"?)

g. Evaluation plan that is focused on outcomes. For many projects, the purpose of the evaluation should be to demonstrate that your project has had an impact on the project's participants, or attitudes toward information technology. Other projects, especially those incorporating professional development activities, may need to assess teachers' integration of information technology into their classes. Support for developing your evaluation plan, including suggested evaluation instruments, is available at the CITI website. (A, B, C)

h. Timetable indicating implementation and completion dates for the project to be funded. (A, B, C)

i. Dissemination plan that shows a broader impact and efforts to share your model. (A, B, C)

j. The history of the partnership working together. (A, B, C)

k. Indication of the impact of revisions on the course. (C)

l. Individual and institutional capacity and expertise in this area. (C)

The narrative should also demonstrate an understanding of information technology across the curriculum. (A, B, C)

IV. 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. Please note: Institution overhead is not allowable under these grants. (A, B, C)

V. Attachments
  a. Resumes of key project personnel (limited to two pages for each individual). (A, B, C)
  b. Evidence that the local Pipeline Fund Regional PreK-16 Network has been notified of this proposal. (A, B, C)
  c. Evidence of matching funds, if available. (A, B, C)
  d. Evidence of lead partner institutional support for the proposal. (A, B, C)
  e. Evidence of institutional administration support for revised course and commitment to begin using the revised course curriculum within one calendar year. (C)

Requirement	A - Team PD Grants	B - Continuing PD Grants	C- Pre-Service IT Integration
I - Lead Partner			
II - Abstract	x	x	x
III - Narrative			
a) Structured Plan for PD	x	x	
b) List of Best Practices	x	x	
c) Activities to Share	x	x	x
d) Follow-up for Teachers	x	x	
e) Capacity	x	x	x
f) Number Impacted	x	x	
g) Evaluation Plan	x	x	x
h) Timetable	x	x	x
g) Dissemination Plan	x	x	x
h) Partnership History	x	x	x
i) Impact of Course Revision			x
j) Expertise			x
Understanding of ITAC	x	x	x
IV - Budget	x	x	x
V - Attachments			
a) Resumes	x	x	x
b) Network Notification	x	x	x
c) Matching Funds	x	x	x
d) Institutional Support	x	x	x
e) Revised Course Commitment			x

Proposal Submission:
Proposals must be submitted electronically via the CITI website (www.citi.mass.edu) as a single Word or PDF document by 5 pm October 17, 2005.

Formatting Instructions: Proposals should be no smaller than 11 point font 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 Alana Wiens at awiens@citi.mass.edu by 5 pm on October 10. Your letter should include a paragraph summarizing your proposed project and indicate which type of grant you are submitting for.

Deliverables

Grantees must submit a mid-grant report, a final report and evaluation, be available to present at CITI showcase conferences and be available for one year from the end of the grant period to answer questions on the model they have developed for those who may be replicating the model.

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The CITI website will have suggested templates and resources for the budget, evaluation and dissemination plans for your proposal. The site will also have a FAQ and any addenda to the RFP. It is the responsibility of proposers to access RFP changes on the CITI site. Proposals are to be submitted electronically through our website. (www.citi.mass.edu) Proposals must be uploaded in a single document. Proposers are asked to minimize file size for easy uploading and distribution to reviewers.

A RFP briefing session will be held on September 19, 2005 in the Berkshire Room at the UMass Collaborative Services Center in Shrewsbury, MA (directions available on the CITI website). . While the bidder's conference is not mandatory, we encourage all interested parties to attend to receive updated materials and RFP clarification. Notes from the bidder's conference will be available on our website. RSVP to Alana Wiens at awiens@citi.mass.edu. Attendees must RSVP to be on the security list for entry.

Questions not addressed by the briefing session can be submitted in writing to Alana Wiens, Project Manager at awiens@citi.mass.edu by October 7 at 5 pm. Questions and answers will be posted on the website (www.citi.mass.edu).