

**NetWorks Annual Report**

**DUE-0501626**

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## **I. PARTICIPANTS**

The major change in project participants has been the addition of two ATE centers, the National Center for Telecommunications Technologies (NCTT) and the National Center for Optics and Photonics Education (OP-TEC). These centers are in collaboration with NetWorks to jointly produce the SAME-TEC national conference as a major dissemination activity.

## **II. ACTIVITIES AND FINDINGS**

### **Section 1: Research and Education Activities**

#### **A. Executive Summary**

##### Overview:

The MATEC NetWorks ([www.matecnetworks.org](http://www.matecnetworks.org)) national resource center is in its fourth and final funding year. NetWorks is part of the Maricopa Advanced Technology Education Center (MATEC), a member of the Division of Academic and Student Affairs at the Maricopa Community Colleges. The Maricopa County Community College District strongly supports the resource center through facilities, infrastructure, and the donation of part of the time of two employees.

The focus of the center is to provide venues for creating, sharing, and promoting a premier collection of materials, services, and programs for technical training, education, and faculty development. This directly supports learning environments and quality instruction.

##### Major Accomplishments:

In the prior years of the grant, the center's infrastructure was created and refined. This allowed significant emphasis in this reporting year (year four) in three major areas:

- A significant increase in the digital library collection of resources and services,
- A significant increase in the web seminar programs, and
- A significant increase in the use and users of the center.

In addition, three other major accomplishments involved:

- Development of a broad based 46 member faculty advisory board representing 33 colleges and organizations in 21 states,
- Collaboration with the ATE centers to form a group to produce effective dissemination activities including a major national conference called HI-TEC
- Under supplemental funding the production of the third edition of the outreach document titled *ATE Centers Impact*

One major area was de-emphasized with a significant reduction in the emphasis on the faculty externship program.

##### Impact:

In June 2007, there were 240 resource entries; in February 2008, 675 and in February, 2009 there were 1251 entries. For the NetWorks digital resource library this represents a major accomplishment in providing a genuinely significant amount of resources to attract users.

Use of the resource center can be gauged in three different ways (see the attached graphs.) The center's web site continues to have about 4,000 visits per month, holding steady over the past year. For this metric we use "visits" as opposed to "hits" to give a more realistic idea of the actual usage of the site. The numbers are filtered to remove hits initiated by automated search engines and web robots which can artificially inflate the numbers. "Full Record Visits" tell how many times a resource was sought for and found on the site. It is a good indicator of the use of the digital library aspect. For February 2009, the number of full record visits was 1,529. Roughly 1/3 of the number of "visits" results in a record access. The number of visitors to our community-building "TechSpectives" blog is another indicator of use and interest with 1147 visits in the month of February 2009.

The center believes the integrated marketing and communications effort that ties every center activity such as web seminars back into the resource center is significantly and positively influencing these use numbers.

The third method is the professional development activities. In the series of 13 webinars (up from eight last year) in the period March 2008 through February 2009, there were a total of 915 registered participants (this is a duplicated count). By any means this is a stunning number for a workshop/seminar type of outreach activity. At the SAME-TEC national conference, there were 359 registered attendees and 218 of them attended one or more of the 10 pre-conference workshop activities. Although there is some duplication, the webinar and conference attendee totals of 1274 faculty members (up from 686 from last year) give a strong impression of the resource center's impact. Although it is very approximate, participants in professional development activities indicated (90%) that they would use the information in a classroom setting. Assuming 50% duplication or 637 faculty members per year, if a faculty member teaches 26 unduplicated students in a course and effectively impacts 50% of them, then that would yield a student impact of  $637 \times 13 = 8,281$ .

#### Effectiveness:

Although the impact measures are fairly well established, the center has little direct evidence to support its effectiveness. In order to gauge effectiveness, the resource center had to first build its infrastructure, its services, and its digital repository. Now that those three aspects are in hand, the center can make genuine attempts to quantify its impact.

The center made a conscious decision in its first phase not to require log-on information for the users of the website and associated services. This was done to avoid placing any barriers in the way of the initial users and contributors. As a result, the use data for the center is focused on the number of visitors and the number of requests for "full record" access. For example, in January 2009 there were 6,595 visitors and 1,529 requests for full record access in that one month (comparable to 2008 numbers.) Both of these are substantial numbers, but we can not tell how many unique visitors there were or which visitor requested which record. This is now changing. Beginning in February 2008, users could freely browse the digital library and see descriptions of items but are now required to log in to download resources. As of February 2009, one year later, there are over 950 registered users, increasing at 50 -70 per month. This sets the stage for surveys of users to determine effectiveness. The center is working with the external evaluator to refine these effectiveness processes.

In the case of web seminars, there is more information on effectiveness. When asked if participants found the overall presentation and content of this webinar valuable enough to share with their friends and/or colleagues, more than 94% (308 responses) responded yes or strongly

yes. When given the following statement, “the information and resources that I obtained from this webinar will directly impact my students, colleagues, and/or my own professional development,” 41% strongly agreed and 47% agreed to this statement for a 88% impact metric (308 responses.) As of yet there has not been a follow up effort to gauge true effectiveness.

## **B. Proposed effort:**

In this reporting period, the center’s objectives were to build the digital library collection, substantially increase use and user base, and focus on dissemination activities. Progress has been made in all of these areas; the digital library collection use and user base has exceeded expectations as have the results of our marketing and dissemination efforts. The faculty externship results in prior years fell short of expectations. In the original grant, it was anticipated that up to 80 faculty members would participate in some way in the externship/resource development aspect of the project. With less than 20 participants to date, and with the advice and support of the National Visiting Committee, the program was discontinued at the national level. The center now acts to resource local implementation of externship programs done by others.

The center, over the years, has modified its approach to the creation of the resource center’s infrastructure. Originally a tri-partite arrangement with two sister resource centers (MERC and NETEC) was envisioned to jointly develop approaches to common methods of collection and distribution of resources. That collaborative effort proceeded to a small extent in year one and then ended. New approaches began and NETEC withdrew from its status as a resource center in 2007. A more extensive collaborative effort replaced the original planned effort as the NetWorks center took on a leadership role with the consortium of resource centers then known as ATERC. This successfully led to a formalized agreement on common compatibilities between resource centers, which have paved the way for future collaborative efforts across the ATE spectrum. Subsequently a project was funded at the University of Wisconsin, [www.atecentral.net](http://www.atecentral.net) which NetWorks strongly supports, to carry on the joint center activities.

In this process of the infrastructure creation, the center took a somewhat different approach to development than was originally proposed. The original proposal had called for funds for collaborative development, consultants for issues such as taxonomies and an outside firm to develop a secure online asset repository. The center instead built its own internal capability in infrastructure and software programming, leveraging the contributed support from the Maricopa Community Colleges and elected to work closely with the AMSER project to adopt their CWIS open source software to create the digital library. This insured captivity with the National Science Digital Library and modeled the approach for other centers and projects. The resulting reallocation of funds from external collaborators and consultants was an efficient and cost effective approach that gave the center better control and access to its infrastructure.

The digital library opened in the summer of 2006 and underwent modest growth through July 2007. Today in February 2009, the library asset growth and use expanded substantially and it appears the strategy for creation and advocacy for the digital library has given results beyond expectations.

Now that the library has a critical mass of resources, the center can expand its services around those resources. That will be the major effort in the later half of year four. Lagging at this stage is the execution of the process to review, rate, and rank the asset collection. For example only 96 of the over 1200 resources have been peer ranked to date. Plans are now being executed

to utilize the 45 member faculty advisory board, internal staff, and others, including supported faculty, to make progress on this objective.

The center's enhancement and development activities for faculty and teachers are focused on two major activities: 1) the annual SAME-TEC national conference extensively supported by the NetWorks and sister centers and 2) a series of web seminars for professional development and community building. The SAME-TEC national conference offers an unparalleled opportunity to disseminate NetWorks information and also serves as a source of assets collected for or contributed to the library. The web seminar series directly addresses faculty needs in delivery formats that suit their requirements. In addition, the web seminars provide a rich set of resources to the center as well as build use and the user base for the center's services. The web seminar infrastructure and software license is supported by the Maricopa Community Colleges and the faculty participation in the series has dramatically increased through effective promotion and community-building efforts.

## **Section 2: Major Findings**

### **NetWorks Goals:**

Goal 1: Expand involvement of the education community in contributing to national knowledge about technician preparation. This goal is focused on developing a *Collection* of resources and services.

- The objectives under this goal all focus on building the number of resources in the digital library, expanding the use of the resources, and expanding the user base.

Goal 2: Establish unique model programs for creating and broadly disseminating reusable learning material. This goal is focused on *Dissemination*.

Goal 3: Accelerate the ability of the national technician education community to adapt as technologies and learner needs change. This goal is focused on *Advancement* of technician education.

### **Externships:**

With the advice and support of the National Visiting Committee, the national externship program has been discontinued and the effort redirected to the very successful web seminar series for professional growth.

## **Section 3: Training and Development**

**Method:** SAME-TEC Conference

**Frequency:** Annually

**Target Audience:** Technology Education and Industry Professionals

**Impact:** At the SAME-TEC 2008 national conference, there were 359 registered attendees (up from 263 in the prior year) and 208 of them attended one or more of the 10 pre-conference workshop activities. See details below.

**Description:** The Semiconductors, Automated Manufacturing, Electronics - Training and Education Conference (SAME-TEC), is a major outreach activity for the center. In July 2007, 359 people attended matching NetWorks' target audience: two-year and technical colleges (50%), four-year universities (15%), industry (15%), K-12 (18%), and other (2%). NetWorks presented three different workshops offered at multiple times for a total of eight separate

workshops. The significantly expanded numbers of participants was due to the tri-partite production of the conference with the NCTT and OP-TEC national centers bring an expanded audience to all.

The services offered by NetWorks at the conference address the following attendees and their goals:

- Faculty in technology programs who want to learn about new technology and how to expand their existing program
- Administrators and counselors who are interested in creating a more robust technology education program and strategies for recruiting students
- K-12 teachers who want to learn how to integrate advanced technology concepts into their existing science and math curriculum
- Industry trainers and learning managers who want to gain insight into the future training needs
- Workforce development professionals from government, labor, business, and education who are involved in shaping workforce development programs
- Professionals involved in issues related to skill standards and employability

#### Networks Visibility:

SAME-TEC is promoted through direct mail, email, newsletters, listservs, national publications, the SAME-TEC web site, the conference program, personal contact, and other venues. As a conference co-sponsor and co-host, NetWorks was prominently featured in all conference promotional materials.

#### Workshops and Sessions:

SAME-TEC provided a valuable dissemination route for NetWorks information and was integral to NetWorks success. The 2008 conference featured three separate NetWorks-focused workshops and a NetWorks session on program challenges. They explained the functions and purpose of NetWorks by identifying the need for a streamlined search engine that provides classroom ready resources in technology fields, elaborating on the definition and value of "classroom ready resources," and providing instructions on how to best utilize the NetWorks website.

#### Repository Additions:

One of the main benefits that NetWorks planned to attain from SAME-TEC is the addition of repository resources. Each conference presenter was required to provide his or her content for inclusion into the NetWorks collection. In addition, NetWorks' Learning Resources and Fully Charged workshop participants were all asked to bring, learn how, and actually submit their favorite resources to the site during their workshop. This generated 55 (up from 31 in the prior year) resource contributions from the conference alone.

In addition to individual resource submissions, the greater goal was to build a cadre of loyal resource contributors. By educating conference attendees of the value associated with the content, applications, and reach of the NetWorks digital library, and by walking them through the submission process, they will be more likely to submit subsequent resources that they have either harvested or self-created.

**Method:** Web Seminars (Webinars)

**Frequency:** one to two per month

**Target Audience:** Technology Education and Industry Professionals

**Impact:** A total of 915 (duplicated count) participants in 13 workshops in the March 2008 through February 2009 timeframe.

**Description:** 13 webinars were produced with numbers of participants that ranged from 28 to 114. In the case of web seminars, there is more information on effectiveness. When asked if participants found the overall presentation and content of this webinar valuable enough to share with their friends and/or colleagues, 94% responded yes or strongly yes. When given the following statement, “the information and resources that I obtained from this webinar will directly impact my students, colleagues, and/or my own professional development,” 41% strongly agreed and 47% agreed to this statement for a 88% impact metric. In this example, 308 participants responded to the survey. As of yet there has not been a follow up effort to gauge true effectiveness.

#### **Section 4: Outreach Activities**

**Method:** TechSpectives Blog

**Frequency:** Weekly

**Target Audience:** Technology Education and Industry Professionals

**Impact:** Blog visitor statistics showed an increase from 16 visitors in April 2007 to 1,147 visitors in February 2009. Builds community.

**Description:** TechSpectives is an online community dedicated to the latest topics in technology and education, specifically focused in the semiconductor, automated manufacturing, and electronics industries. Access to this blog is available through the NetWorks website. It invites readers to share their comments or request to post a new blog topic for open discussion to build the NetWorks community.

**Method:** Mass Emails

**Frequency:** Monthly

**Target Audience:** MATEC database of over 2,000 contacts, the Engineering Technology Listserv of nearly 4,000 two-four year technology faculty, administrators, and industry professionals, as well as nearly 11,000 employees of the Maricopa County Community College District

**Impact:** 17,000+ email recipients, informs of Networks products and services

**Description:** An email message that features news and announcements from various MATEC related projects. A NetWorks topic in the email such as upcoming webinars or new resources added to the digital library is included with direct links into the library.

**Method:** What Is It? Postcards

**Frequency:** Monthly

**Target Audience:** MATEC database of over 2,000 contacts of two-four year technology faculty, administrators, and industry professionals

**Impact:** 2,000+, excites interest in new technologies

**Description:** This is a physical postcard that gets mailed to the entire MATEC database. It features an emerging technology related image and invites readers to submit their guesses as to what the image is. By capturing the readers' interests with the technology featured on the postcard, it ultimately offers search suggestions to related resources in the NetWorks digital library.

**Method:** @matec Newsletter Articles and Advertisements

**Frequency:** Monthly

**Target Audience:** MATEC database of over 2,000 contacts and the Engineering Technology Listserv of nearly 4,000; each targets two-four year technology faculty, administrators, and industry professionals

**Impact:** 6,000+, results in significant increase in resource views and access

**Description:** Each month, the newsletter features a "Focus on NetWorks" article, among others, upcoming webinar details, recent TechSpectives blog postings, and advertising opportunities. The theme is related to resources added to the digital library collection and references for readers to obtain those resources from the NetWorks website. These referenced resources tend to be among the top ten resources accessed each month.

**Method:** Joint ATE Conference Exhibits

**Frequency:** periodic

**Target Audience:** Technology education and industry professionals

**Impact:** See details on the below for each conference

### **American Association of Community Colleges (AACC)**

*April 5-7, 2008 in Philadelphia, PA*

The premiere event for community college leaders, AACC's Annual Convention offers unprecedented professional development as well as the opportunity to network, share, and learn from professionals in the fields of education, business and industry, and the government sector. The Academic Marketplace offers a variety of services and products to bring innovation to your campus.

NetWorks exhibited jointly in a 10' x 60' booth with 13 other ATE Centers: BATEC, RCNGM, MCIT, NCTT, CyberWatch, FLATE, NBC2, NCME, CNEU, SC ATE, CTC, OP-TEC, and KIT Center.

### **SAME-TEC**

*July 28-31, 2008 in Austin, TX*

SAME-TEC is a unique event that provides national networking and collaboration between education and industry partners, to promote the viability of our high tech industries, through the development of a highly skilled and knowledgeable workforce. The SAME-TEC Technology Showcase is a great opportunity to discover the latest products and services related to the advanced technology training and education environments. Conference attendees visit the exhibit hall frequently throughout the day for valuable products, services, and networking opportunities. NetWorks exhibited independently in 10' x 10' booth.

### **ATE PI Conference**

October 29-31, 2008 in Washington DC

This national ATE PI conference, which is cosponsored by the American Association of Community Colleges (AACC) and NSF, brings together approximately 800 people to focus on critical issues related to advanced technological education.

NetWorks exhibited independently in a 10' x 20' booth.

### **III. PUBLICATIONS AND PRODUCTS**

The center's main publications and products are its digital library and associated services available at [www.matecnetworks.org](http://www.matecnetworks.org). The center maintains the outreach website [www.atecenters.org](http://www.atecenters.org).

### **IV. CONTRIBUTIONS**

With supplemental funding the center managed the creation of *ATE Centers Impact 2008-10*, [WWW.ATECENTERS.ORG](http://WWW.ATECENTERS.ORG). This 100 page brochure features the 36 ATE centers and over 25,000 copies will be distributed nationally

### **V. SPECIAL REQUIREMENTS AND NOTIFICATIONS**

None

#### **Attachments:**

1. NVC report May 2008
2. Networks Resources, Use and User Data