

# Facilitating Technology Transfer Among Engineering Community Members

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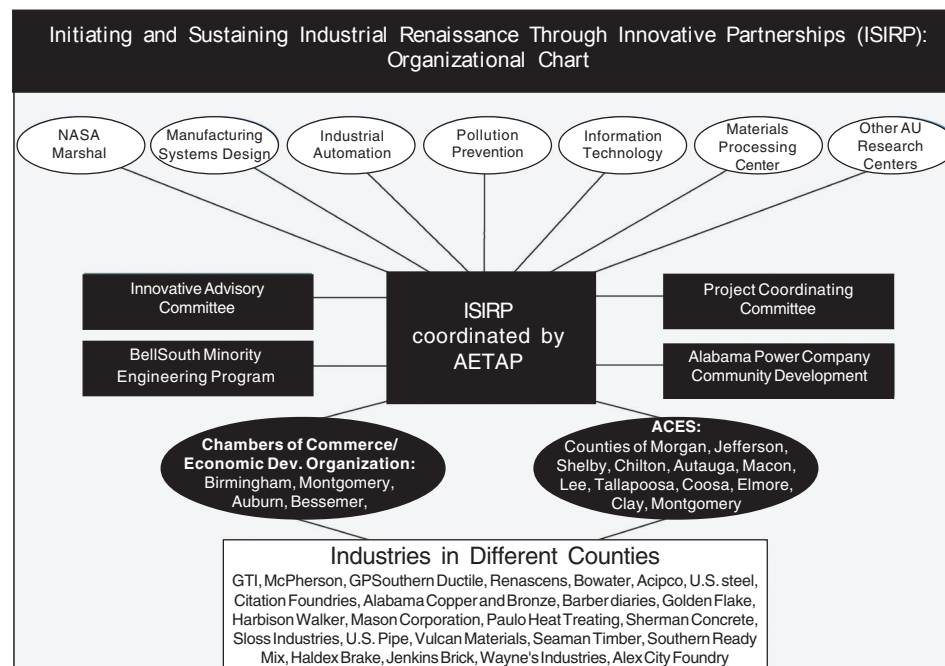
## INTRODUCTION

A report, entitled “Benchmarking University-Industry Technology Transfer in the South and the EPSCoR States,” by Waugaman and Tornatzky (1998) found that universities in Alabama have a poor technology-transfer record when compared to their counterparts in other states. Not a single university was listed among the “best-in-class” universities that produced significant economic impact among the 72 universities that were analyzed in this report. This report notes that those universities that emphasize technology development as an essential

extension of basic research will generally also be more competitive in research. This problem of a poor technology-transfer seems strange given the enormous effort put forth by many individuals and organizations at state and local levels. The problem seems to arise not from any one group’s deficiencies, but rather from the fragmentation of effort across a wide spectrum. Better communication among non-affiliated groups could increase the effectiveness of technology transfer, thus potentially creating a significant positive economic impact in Alabama.

To change this trend and position, the Auburn University College of Engineering, as a leader in

Figure 1. ISIRP organization chart



technology transfer, formed a partnership among Auburn University, NASA Marshall Space Flight Center, state agencies, local governments, and owners of industries in targeted counties (Figure 1). Such a partnership has become yet more critical as Alabama has lost approximately 48,000 jobs from over 273 plant layoffs and closings since 1998 (State Dislocated Worker Unit, 2002; Vision of Alabama, 1994; Whittington, 2002). In addition, the partnership has the ability to address the strong need to incorporate technology development and transfer into engineering education (Wyckoff & Tornatzky, 1998; National Science Board, 2000; Fox, 1984; Tornatzky, Lovelace, Denis, George & Eliezer, 1999).

By establishing partnerships across the groups of the community, all members will be aware of what the others are doing so that efforts are not duplicated and a greater impact is achieved. The infrastructure of this community will consist of people—county agents of the Alabama Cooperative Extension System (ACES), students, and researchers—and an information system component described as a knowledge sharing system (KSS). Auburn's Engineering Technical Assistance Program (AETAP) has taken the leadership role in forging community ties and developing the KSS as the centerpiece of the community.

The next section will describe the organizations that comprise the engineering community, followed by a profile of the community members. Subsequent sections will describe opportunities for improvement within the community, and how the KSS addresses these opportunities by creating a supportive virtual community and enacting a knowledge management (KM) strategy. The next section then discusses the relationship between communities of practice and the KSS. The last section reports the current status and looks toward the future of the KSS, and is followed by definitions of key terms.

## **BACKGROUND**

### **Engineering Community Organizations**

AETAP ([www.eng.auburn.edu/aetap](http://www.eng.auburn.edu/aetap))

During 1997, the Auburn Engineering Technical Assistance Program, originally a part of the Auburn

Industrial Extension System (AIES) and later designated as AETAP in 2000, was conceived as a unit of the College of Engineering to help increase Alabama's industrial competitiveness in the rapidly changing world of international commerce. The infrastructure used by AETAP for technology transfer consists of identifying industry needs and fulfilling them through technical assistance and technology-transfer projects performed by researchers. The unit also maintains a Web site that provides information on the services offered by this unit. Since its inception, this unit has undertaken 716 projects providing technical assistance to industries. More than 40 researchers participated in these projects. During 1997-2003, a total of \$1.2 million was generated to support this program through a combination of company-specific projects and funding from NASA, NIST, and other sponsoring agencies. AETAP was also involved in managing NASA technology-transfer programs to industries. At present, most of AETAP's efforts are focused on mobilizing the College of Engineering's resources to form new partnerships to provide technical assistance to industries.

During 2003, AETAP received a grant from the National Science Foundation and other funding sources totaling \$1.3 million to improve Alabama's economic outlook by improving technology transfer, and to create and sustain innovative partnerships among members of the region's engineering community. The title of this project is Initiating and Sustaining Industrial Renaissance through Innovative Partnerships (ISIRP). AETAP manages and supports this project and the community by implementing the KSS.

ACES ([www.aces.edu](http://www.aces.edu))

The Alabama Cooperative Extension System (ACES) is a statewide continuing education and technical assistance network that links the land-grant university campuses at Alabama A&M University and Auburn University to people and communities throughout Alabama. Alabama A&M University is a historically black college, and Auburn University is the state's 1862 land grant university. ACES serves as the outreach arm for both universities. Throughout the system of county offices, ACES personnel are accustomed to working with their local community and business leaders. This relationship places

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