

Approved: January 26, 1996  
date

MINUTES OF THE SENATE COMMITTEE ON COMMERCE.

The meeting was called to order by Chairperson Alicia Salisbury at 8:00 a.m. on January 25, 1996 in Room 123-S of the Capitol.

Members present: Senators Salisbury, Burke, Downey, Feleciano, Gooch, Harris, Hensley, Jordan, Petty, Ranson, Reynolds, Steffes and Vidricksen.

Committee staff present: Lynne Holt, Legislative Research Department  
Jerry Donaldson, Legislative Research Department  
Bob Nugent, Revisor of Statutes  
Betty Bomar, Committee Secretary

Conferees appearing before the committee:  
Rich Bendis, President, KTEC  
Ralph Lagergren, Agri-Technology, Winfield  
Christopher Coburn, Vice President, Technology Partnership Practice, Battelle  
Memorial Institute Cleveland, OH  
Dan Berglund, Executive Director, State Science and Technology Institute,

Others attending: See attached list

Ralph Lagergren, Vice President, Agri-Technology, Winfield, related the process of taking the vision of a combine with a simpler, more efficient thresher and few working parts to its completion. Mr. Lagergren shared his frustration in obtaining capital to build the prototype, and how, with the assistance of KTEC, and Ad Astra funding, the Bi-Rotor combine was completed. Through the process of collaboration with engineers and designers recruited to help build and test the product, came a machine which has surpassed the original concept. The patent and design rights have recently been purchased by John Deere, Inc.; consequently, the loans received from KTEC have been repaid. Attachment 1.

Mr. Lagergren stated, the process from an idea to the completed product is long and costly. However, with the assistance provided by KTEC many ideas of Kansans can be realized creating new technology and a number of additional jobs; whereas, without the assistance of KTEC, many ideas would never be commercialized and would be lost to the detriment of the state as a whole.

Christopher M. Coburn, Vice President, Technology Partnership Practice, Battelle Memorial Institute, Cleveland Ohio, stated Kansas is in a transition of its economic core from agrarian to technology. Other states have and are experiencing the same transition. Kansas has acknowledged this transition and the need for the formations of partnerships between industry, universities and the state, by establishing KTEC which is a model throughout the United States. The federal government recognized the fast growing transition to a technology era and recently formed The State-Federal Technology Partnership Task Force. The Task Force issued its Report and made recommendations that federal and state governments take specific steps to improve the effectiveness and expand the benefits of the national science and technology system. Mr. Coburn stressed the necessity for the formation of partnerships between the federal government, state government, academia and industry. Mr. Coburn stated there are new opportunities to develop dialogue between government levels and reap benefits of increased partnerships on technology programs. Attachment 2

Dan Berglund, Executive Director of the State Science and Technology Institute, stated initiatives involving government, industry and universities to sponsor the development and use of technology, stimulates economic growth. Kansas, in 1994, was 32nd in population, 31st in gross state product (19.2% in manufacturing), 12th in spending on cooperative technology programs, and 8th in spending per capita. Kansas is one of the three most forward and progressive states in the area of the formation of partnerships to assist companies in the development, financing and commercialization of products. Mr. Berglund emphasized the importance of a continuum of programs contained in the KTEC structure. Attachment 3

Mr. Berglund, co-author of *Partnerships: a Compendium of State and Federal Science and Technology Programs I*, a comprehensive description of cooperative technology programs, is on file in the Legislative

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON COMMERCE, Room 123-S Statehouse, at 8:00 a.m.on  
January 25, 1996.

Research Department.

The meeting was adjourned at 9:00 a.m.

Lou Higgs, Sr., Fellow, Center for New West, *What a State Needs To Do To Be An Effective Partner With Federal Agenices* was at the KTEC offices from noon to 1:30 p.m. to share information with members of the Committee.

Gail Brinkman, Impact Dynamics, Wichita, a recipient of State Economic Development Programs was at the KTEC offices from noon to 1:30 p.m. and shared her experience of working with KTEC.

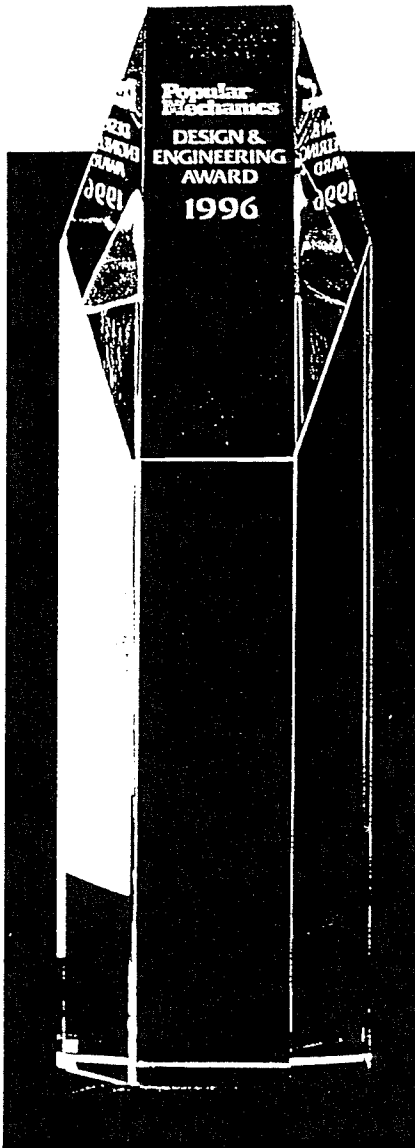
The next meeting is scheduled for January 26, 1996.



# 1996 DESIGN & ENGINEERING AWARDS

• The Design & Engineering Awards program is our yearly homage to great invention, clever innovation and just plain terrific ideas. It's our chance to salute the brightest people, in the smartest organizations, who originated the best thinking of the year in the fields that we cover editorially—automobiles, home improvement, boating, outdoors, electronics, photography, science, technology and telecommunications. A POPULAR MECHANICS Design & Engineering Award is our recognition that you, if you're a recipient, are among the best of the best, truly one of the great innovators of the year.

What are the criteria for winning a POPULAR MECHANICS Design & Engineering Award? There are none. Anyone can nominate anything for a Design & Engineering Award. Then,



it's up to our editors, all experts in their own fields, to meet to discuss the nominees and select the winners.

No, there are no written rules for selection, no published criteria, no rules for judging. But with so many years of experience in their fields, so much expertise, trust me, POPULAR MECHANICS editors know innovation when they see it. And this year they saw it 23 times.

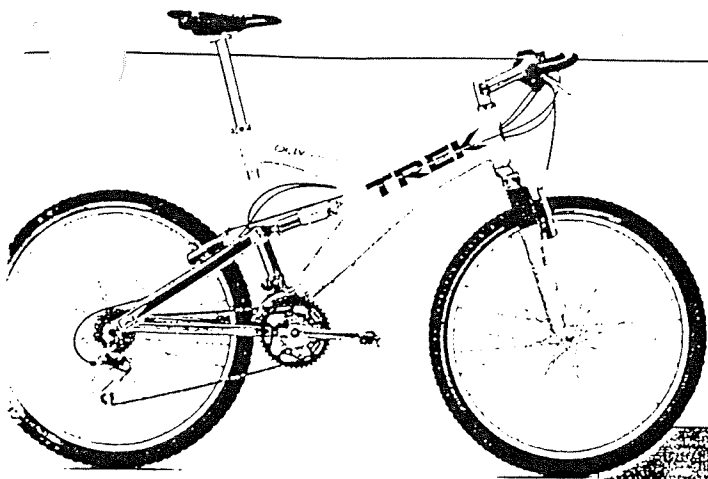
This year's Design & Engineering Awards recognize innovations that run the gamut from a simple joystick handle that puts a new spin on the way to polish your car, to the docking system used to link up the U.S. Space Shuttle *Atlantis* and the orbiting Russian *Mir* Space Station. Our winners have created products that are unique and significant. In short, the best of 1996.

—Joe Oldham

*Senate Commerce Committee  
January 25, 1996*

*(over)*

*Attachment 1 thru 1-3*

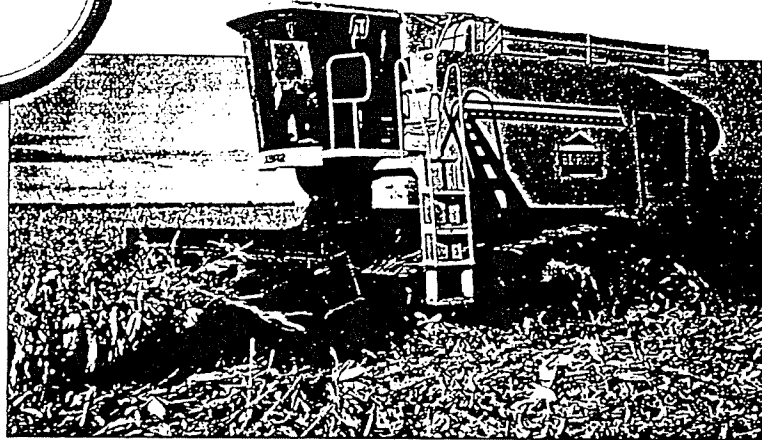
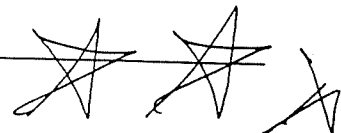


**TREK Y-33 COMPETITION BIKE**

**Trek USA**  
 Mountain bikes with suspension systems front and rear have been around for quite a while. But frankly, they haven't worked very well. Now, the third-generation Trek Y-33 establishes the ultimate standard for these systems. Compared to rear suspension systems that use two and three pivot points, the Y-33 uses only one. Since it's on a transverse tube—not a downward one—there's no power lost while pedaling. The unique Y-shaped, carbon-fiber frame is also the lightest in a fully suspended mountain bike, so riders have twice the competitive edge over their rivals.

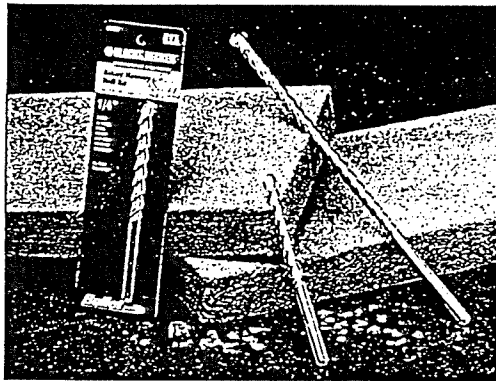
**BI-ROTOR COMBINE**  
**Agri-Technology LP**

Combine harvesters haven't reaped a cornucopia of new technology in recent years. But a new combine with a unique high-speed threshing chamber—where the grain and chaff are separated—is a significant development. The Bi-Rotor provides a much greater separating surface, so the threshing area can be half the normal size. And the design uses half as many moving parts as more conventional harvesters. This, in turn, provides room for a double-size grain tank, allowing the combine to carry 400 bushels. Now that's the way to separate the wheat from the chaff.



**BLACK & DECKER**  
**BULLET SPEED TIP**  
**MASONRY DRILL BIT**

**The Black & Decker Corp.**  
 Bits that drill through masonry are nothing new. But the Bullet Speed Tip will do the job twice as fast as any other masonry bit in history. The new bit is a rotary type and does not use the hammer mode. It's also sharper than competitive bits and uses a new grade of carbide steel. That's what provides its speed and resistance to breakage. The Bullet Speed Tip features an unusual flute design that helps it quickly eject debris, increasing performance and reducing user fatigue. And when driven by a cordless drill, this efficiency allows more holes on a single charge. And, after all, holes are what drill bits are all about.

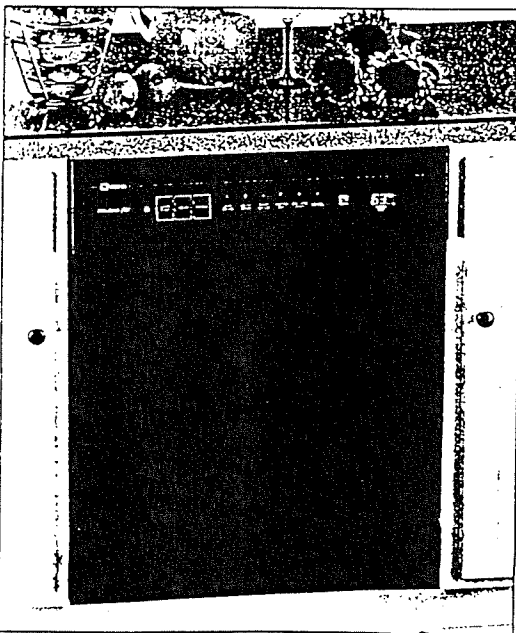


**PORTER-CABLE SANDER KIT**  
**Porter-Cable Corp.**

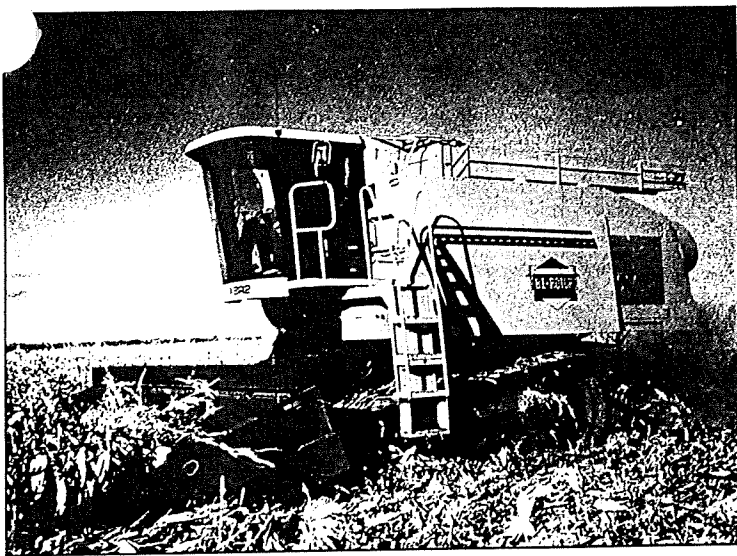
In a perfect world, you'd never have to sand moldings because routers and shapers would cut them flawlessly, and chemical strippers would peel paint off them perfectly. Too bad that world doesn't exist. The fact is that contoured areas and corners often do need sanding. And now there's a kit to make the job easier and more accurate. The power tool can move a contoured or flat sanding pad at 6000 linear strokes per minute. You cut and apply adhesive-backed sandpaper to any of the convex or concave pads that come in the kit, and you instantly have the perfectly shaped sander for whatever job you're working on. There's nothing easier. The Porter-Cable Sander Kit—because we live in the real world.

**MAYTAG INTELLISENSE**  
**DISHWASHER**

**Maytag and Admiral Products**  
 Advanced technology prompts some dishwasher manufacturers to pack in so many features to impress consumers that the simple act of washing dishes takes on the complexity of docking the space shuttle. Maytag's new intelligent dishwasher senses the amount of food soil in the dishwasher, the presence of detergent and rinse aid, wash-arm rotation and water temperature. It also tracks the amount of time between loads so it can adjust for dried-on food soil, and it even takes into account the number of times you open its door—assuming you're probably loading more dishes each time. Based on all of this, the washer chooses the right cycle to get your dishes clean. So the newest idea in an automatic dishwasher is to make it, well, automatic.



1-2



Kansans' prototype Bi-Rotor combine.

## 77th Annual Meeting / Tap November 16 - 18

Plans are in full swing for the 77th KFB annual meeting to be held in Wichita, November 16 - 18, 1995.

This year's meeting, with the theme "Remembering the Past, Forging Our Future," will feature a scheduled appearance by House Agriculture Committee Chairman Pat Roberts and an evening of patriotism commemorating the anniversary of World War II.

Tentatively scheduled mini-conferences include: Beef Imagery; Captive Supply; Farm Bureau Image and the Media; Wheat Breeding; Kansas Environmental Issues; Being Sold on Farm Bureau Policy; and International Opportunities for Ag Producers.

## Deere Buys Rights to Kansans' Combine

What began as one farmer's dream in the late '70s has emerged as a revolutionary force in grain harvesting equipment.

Burr Oak farmer Mark Underwood had a vision of a combine with a simpler, more efficient thresher and fewer working parts. With the help of his cousin, Ralph Lagergren, who's background is in marketing, a company called Agri-Technology L.P. was formed to cultivate Underwood's dream.

A team of six engineers and designers was recruited to help build and test Underwood's invention — the Bi-Rotor combine, winner of the American Farm Bureau Federation's Farmer Idea Exchange Contest in 1992.

What emerged from the collaboration was a machine surpassing Underwood's original concept. The combine Agri-Tech developed is not only simpler and more efficient, but it also has a larger storage bin, a shorter frame and the ability to be used in wet, muddy conditions.

John Deere Inc. saw the machine's potential and recently purchased the patent and design rights from Agri-Tech. Deere and Agri-Tech will be conducting ongoing testing of the technology. As Lagergren explains it, the partnership will complete the process of "building the entrepre-

neurial spirit with outstanding resources and engineering."

Lagergren hopes others will unleash their entrepreneurial spirits as they learn more about the Bi-Rotor project. A large portion of the recently

released book, *Dream Reaper*, is dedicated to the future of grain harvesting equipment and Mark Underwood, the man who visualized the future more than 15 years ago.

"I am pleased with the deal made with Deere and hope to see this technology on the market in the future," Lagergren said. "It has been a long, hard road, but it will be a proud day if this technology is put in the hands of the farmer. That has been the driving force of why we pursued this mammoth project."

## HOME GROWN!

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1-3



# The State-Federal Technology Partnership Task Force

Presentation to the  
**Kansas Senate  
Commerce Committee**

**Chris Coburn**

**Staff Director, State Federal Technology Partnership Task Force  
Vice President, Battelle Technology Partnership Practice**

**January 25, 1996**

Christopher M. Coburn  
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Fax: (216) 734-0686  
E-mail: [coburnc@battelle.org](mailto:coburnc@battelle.org)

*Senate Commerce Committee  
January 25, 1996*

*Attachment 2 New 2-19*



## Origins

- **Carnegie Commission report *Science, Technology, and the States in America's Third Century* (1992)**
- **State-Federal Partnership established to implement report's recommendations (1993)**
  - **Colloquium - Airlie House, Virginia, September 1993**
  - ***Partnerships: A Compendium of State and Federal Cooperative Technology Programs* (1995)**
- **State-Federal Technology Partnership Symposium - Washington, D.C., January 1995**
  - **Dr. John Gibbons announces Task Force to develop recommendations for the President**

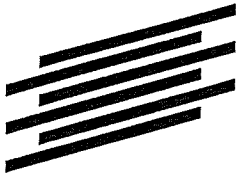




# Mission Statement

**To make recommendations that lead federal and state governments to take specific steps to improve the effectiveness and expand the benefits of the national science and technology system.**

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## Membership - Task Force

- **Co-chaired by former Governors Celeste (Ohio) and Thornburgh (Pennsylvania)**
- **Four sitting Governors**
  - **Gov. Arne Carlson (Minnesota), Gov. Jim Geringer (Wyoming), Gov. James B. Hunt, Jr. (North Carolina), Gov. Ben Nelson (Nebraska)**
- **Two State Senators**
  - **Sen. Janet B. Johnson (Minnesota), Sen. Dave Kerr (Kansas)**
- **Seven industry Presidents/CEOs**
- **Five university Presidents/Directors**



## Participating Organizations

- **American Society of Mechanical Engineers**
- **Carnegie Commission on Science, Technology, and Government**
- **National Conference of State Legislators**
- **National Governor's Association**
- **White House Office of Science and Technology Policy**



## Task Force Activities

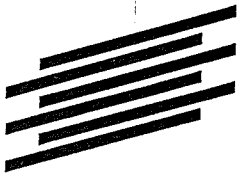
- **Three meetings in Washington, D.C.**
  - April 25, May 26, July 14
- **Targeted research and drafting efforts into four primary working groups:**
  - Principles
  - Case Studies
  - Recommendations
  - Implementation
- **Entire Task Force created final report and is now engaged in implementation process**



# Principles

- **Examined the underlying principles of successful partnerships**
- **Collected and assessed over 70 principles, concepts, and ideas**
- **Consolidated and focused list down to nine key principles of success**
  - **Three Overarching principles**
  - **Six Operational principles**

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## **Principles** (continued)

- **Overarching Principles**
  - **Shared Ownership**
  - **Broad Participation/Diversity of Interests**
  - **Champions/Advocates**
- **Operational Principles**
  - **Partnership Formalization**
  - **Merit-Based Decisions**
  - **Flexibility**
  - **Cost-Sharing**
  - **Evaluation**
  - **Stability/Long-Term Commitment**

8-2



## Case Studies

- **Eleven case studies were conducted on current and past state-federal partnerships**
  - **Eight “successful” partnerships**
  - **Three “unsuccessful” partnerships**
- **Standardized assessments**
  - **Goals and achievements**
  - **State and federal partners involved**
  - **Mechanisms of partnership governance**
  - **Success Principles used or neglected**

6-2



## Case Studies (continued)

### “SUCCESS” PARTNERSHIPS CASE STUDIES

1. Agricultural Cooperative State Research, Education, and Extension Service (CSREES)
2. Building Energy Standards Program (BESP)
3. Experimental Program to Stimulate Competitive Research (EPSCoR)
4. Interstate Oil and Gas Compact Commission (IOGCC) State Review Process
5. National Rural Development Program (NRDP)
6. National Spatial Data Infrastructure (NSDI)
7. Transportation Research Board (TRB)
8. State/Industry/University Cooperative Research Centers (S/IUCRC)

### “FAILURE” PARTNERSHIPS CASE STUDIES

9. Civilian Industrial Technology Program (CITP)
10. State Science Engineering and Technology (SSET) Program
11. State Technical Services (STS) Program





# Recommendations

## 1 Renewing the National Science and Technology System

- Science and technology critical to national growth
- Establish a joint high-level state-federal policy advisory mechanism focused on science and technology issues
  - Established by a Presidential directive
  - Built upon defined shared goals of the Office of Science and Technology Policy (OSTP), the Office of Management and Budget (OMB), and the Science and Technology Council of the States (STCS)
  - Supported by a national forum on state-federal technology partnership held by OSTP and STCS

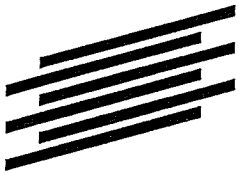
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## **Recommendations** (continued)

### **2 Building the Role of the States in the National Science and Technology System**

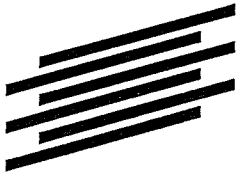
- State governments, individually and collectively, should work to engage the federal government in partnership**
- Governors encouraged to establish state-unique science and technology strategies**
- Governors, through the NGA, encouraged to create a gubernatorial-level mechanism to represent states at the highest national policy level on science and technology issues**



## **Recommendations** (continued)

### **3 Catalyzing Private Sector Investments in Technology**

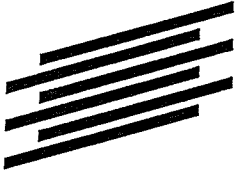
- Nation should maintain stimulation of research and development in small businesses through the fixed proportions of federal R&D budgets**
- Nation should ensure benefits of applied research by stimulating market-related technology development**
- State-federal partnerships in both above objectives should recognize unique roles and capabilities of each partner**



## **Recommendations** (continued)

### **4 Building National Excellence in Manufacturing**

- States, the federal government, and industry should jointly undertake a national manufacturing excellence initiative**
  - Close cooperation between all state and federal manufacturing related programs**
  - A state-federal program built on NIST's Manufacturing Extension Partnership (MEP) targeted at small and medium sized manufacturers**



## Implementation

- **The time is right for prompt engagement of all parties (State and Federal) necessary to reap synergistic benefits**
  - **Tight federal budgets for R&D**
    - Overall budget restrictions and shrinking programs
  - **Tight industrial budgets for R&D**
    - Increasing focus on near-term bottom-line
  - **Increasing interest from industry for partnering with governments and universities**
    - Survey of over 400 fastest growing companies shows 60% higher productivity for those using university partnerships\*

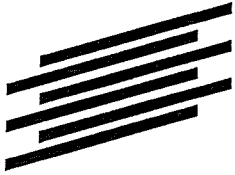
\* Coopers and Lybrand

2-15



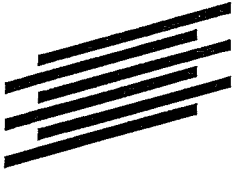
## **Implementation** (continued)

- **Phase I complete**
  - **Drafting and transmittal of Task Force report**
- **Phase II progressing**
  - **Action plan engaged for each key participant in technology partnerships**
    - **White House/Federal Executive Branch**
      - **Anticipating Presidential Executive Order soon**
      - **Top-level advisory committee to be announced in next 60 days**
    - **Congress**
      - **Engaging members and staff**



## Implementation (continued)

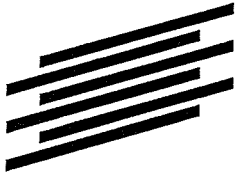
- **State Governments**
  - **Task Force members engaging States**
    - **Visits planned to many states by Co-Chairs and other members**
      - **Address technology forums**
      - **Meet with governors, legislators, and business leaders**
    - **Governors**
      - **Task Force visits**
      - **Activity at NGA winter meeting**
    - **Legislatures**
      - **Task Force visits**
      - **Seeking to identify individual legislative leaders in each state that can participate in the national science and technology partnering process**



## Implementation (continued)

- **Task Force final report**
  - Continuing wide distribution of Task Force report
    - Nearly 1,500 delivered to date
  - Reprint of 1,500 additional copies underway
  
- **Home Page created on the World-Wide Web**
  - State-Federal Technology Partnership site established for:
    - Obtaining Task Force report
    - Reading recent science and technology news
    - Linking to other federal, state, and industrial science and technology sites
  - <http://www.csn.net/~sue/sftp.html>





## Summary

- **Task Force Phase I complete**
  - **Broad-based assessment conducted**
  - **Final report released with wide distribution to an enthusiastic audience**
- **Task Force Phase II underway**
  - **New opportunities nationally and within each state to develop dialogue between government levels and reap benefits of increased partnering on technology programs**

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*Attachment 3 thru 3 -*

State Science & Technology Institute

*Donate Comm. see Committee  
January 25, 1996*

# Briefing on State Cooperative Technology Programs

Presentation by:

Dan Berglund

Executive Director

State Science and Technology Institute

January 25, 1996

# Definition

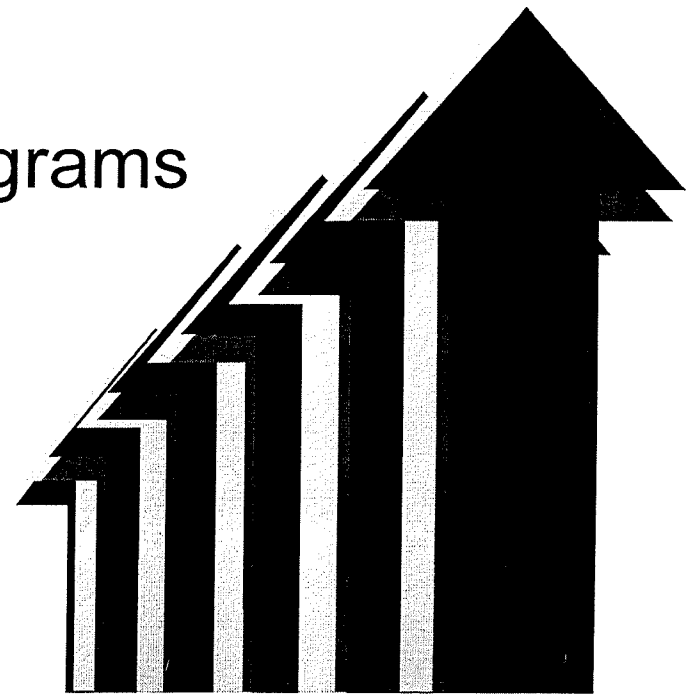
State Science & Technology Institute

- ❑ Initiatives involving government & industry, often universities
- ❑ Sponsor development and use of technology and improve practices
- ❑ Primary goal economic growth

# Status

State Science & Technology Institute

- ❑ Programs sponsored by all 50 states
- ❑ Greater diversity in programs
- ❑ Spending is increasing



2-6

# Evolution

State Science & Technology Institute

- ❑ **1960s:**
  - Investment in Research Triangle in NC
  - Creation of industrial extension programs in GA & PA
  
- ❑ **Late 1970s, early 1980s:**
  - Recession devastates Rust Belt
  - Multi-faceted programs created in PA, OH & NY
  - Focus on tapping into university expertise

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## Evolution cont'd

State Science & Technology Institute

- ❑ **Early 1990s**
  - Widespread acceptance of programs
  - Increased federal involvement in programs
  - Greater focus on technology extension
  
- ❑ **Mid 1990s**
  - Potential for decreased federal activity
  - Continued state growth

# Purposes

**A. Technology Development**

*Research and applications for products and processes*

**B. Industrial Problem Solving**

*Identifying and resolving company needs through technology and best-practice applications*

**C. Technology Financing**

*Public capital or help in gaining access to private capital*

**D. Start-up Assistance**

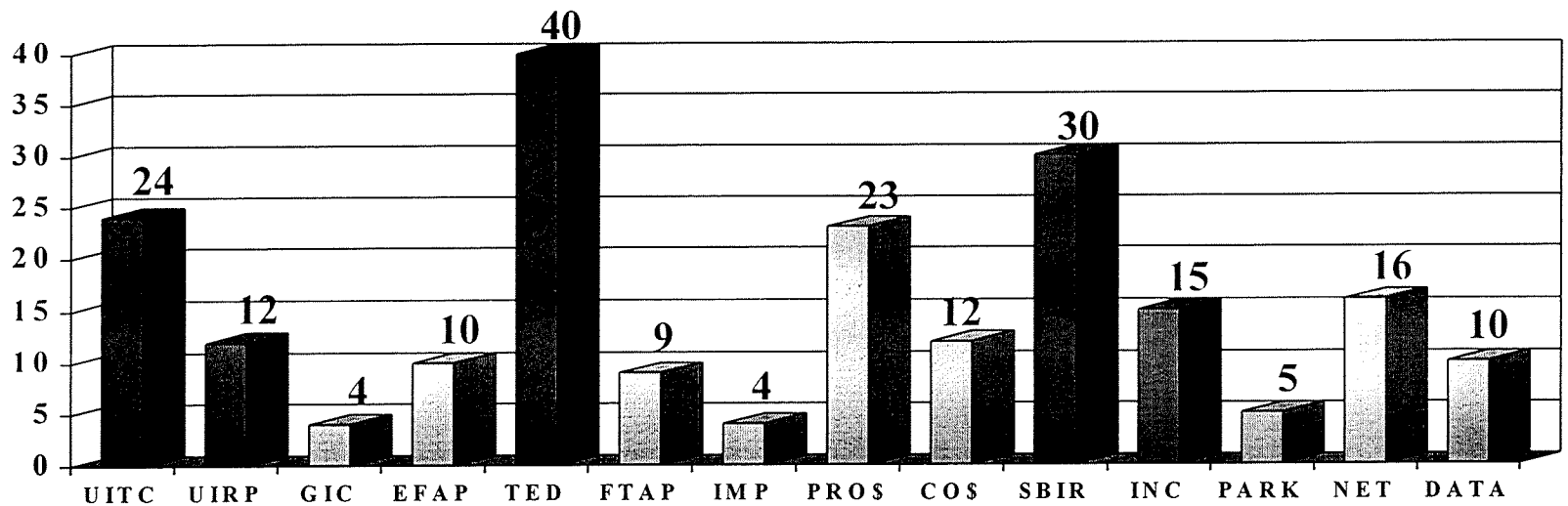
*Aid to new small technology-based businesses*

**E. Teaming**

*Help in forming strategic partnerships*

# Distribution of Program Activities

State Science & Technology Institute



Key to programs:

UITC - University-Industry Technology Centers  
 UIRP - University-Industry Research Partnerships  
 GIC - Government-Industry Collaborations  
 EFAP - Equipment/Facility Access Programs  
 TED - Technology Extension/Deployment Programs  
 FTAP - Federal Technology Application Programs  
 IMP - Industrial Modernization Programs

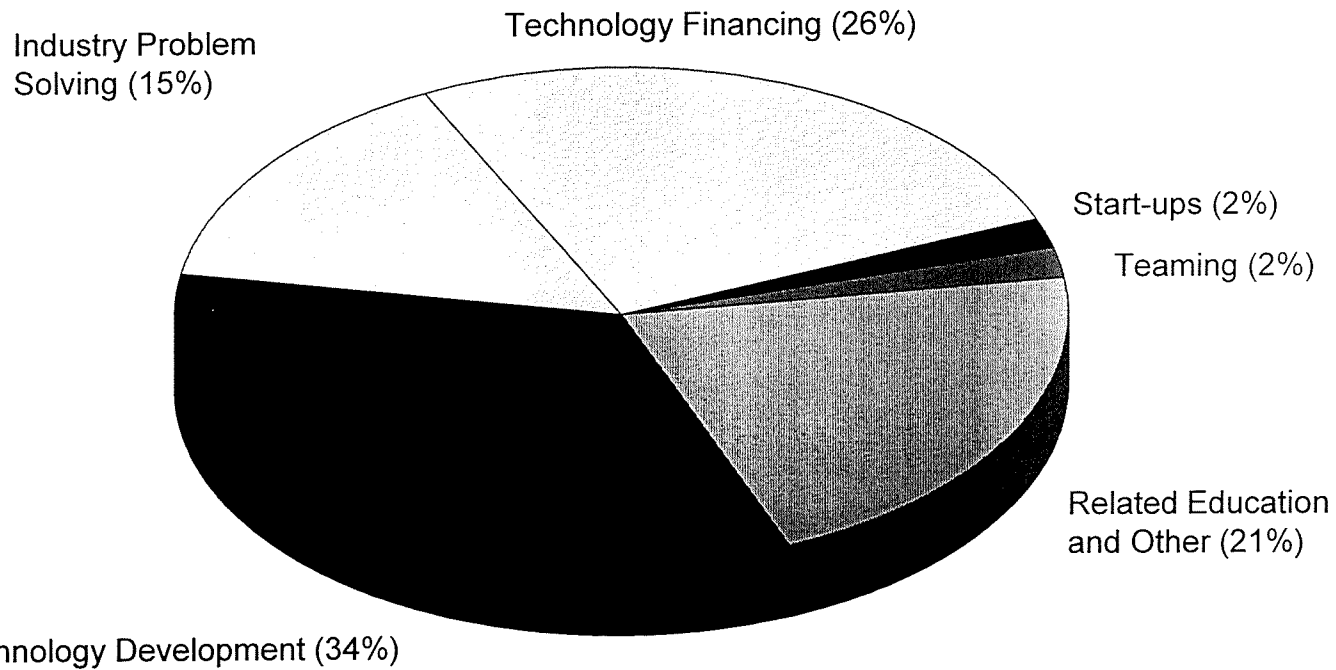
PRO\$ - Project Financing Programs  
 CO\$ - Company Financing Programs  
 SBIR - State SBIR Assistance Programs  
 INC - State Incubator Programs  
 PARK - Research Parks  
 NET - Networks & Regional Technology Programs  
 DATA - State Database Programs

4-8



# State Spending by Category

State Science & Technology Institute



Technology Development	\$127,499	Industrial Problem Solving	\$59,506
Technology Financing	101,811	Start-ups	7,238
Related Education and Other	82,635	Teaming	5,907

8-8

# Technology Development

State Science & Technology Institute

Technology  
Development

University-Industry  
Technology Centers

Government-Industry  
Consortia

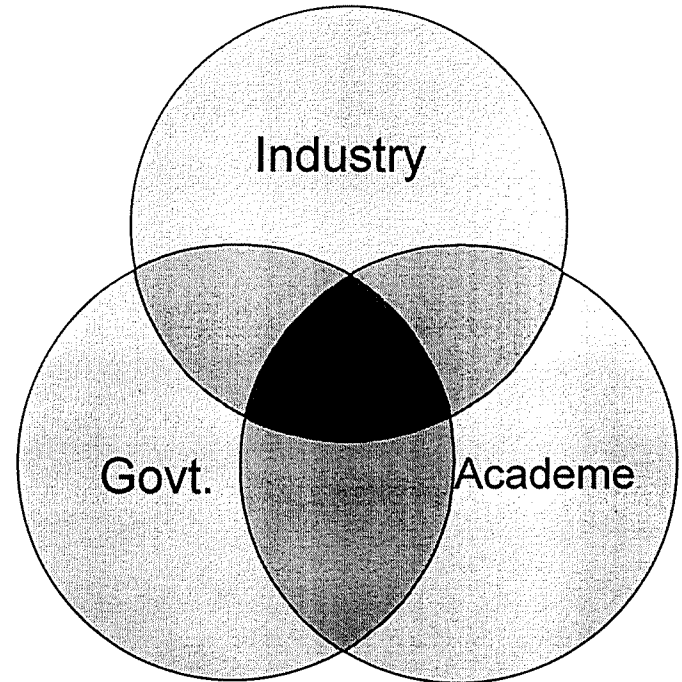
University-Industry  
Research Partnerships

Equipment & Facilities  
Access Program

# Industrial Problem Solving

State Science & Technology Institute

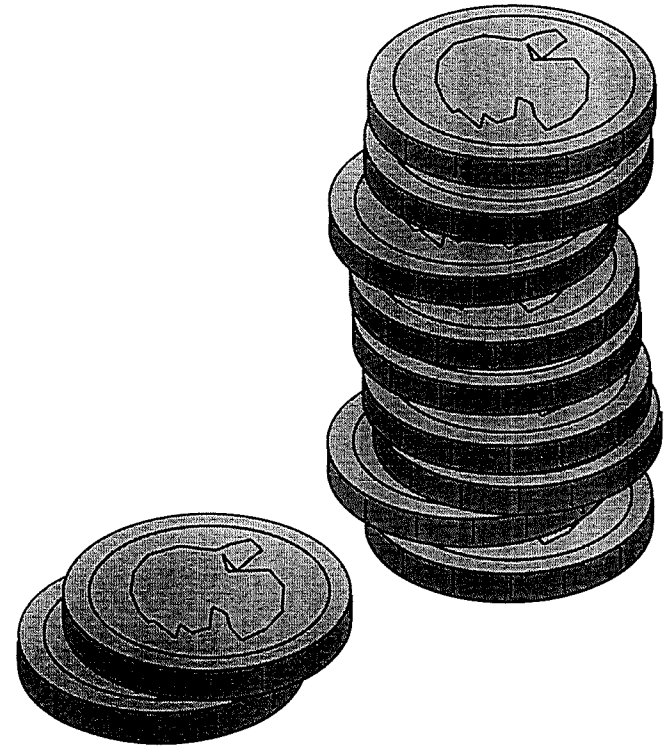
- ❑ Technology Extension/  
Deployment
- ❑ Federal Technology  
Applications Programs
- ❑ Implementation Grants



# Technology Financing

State Science & Technology Institute

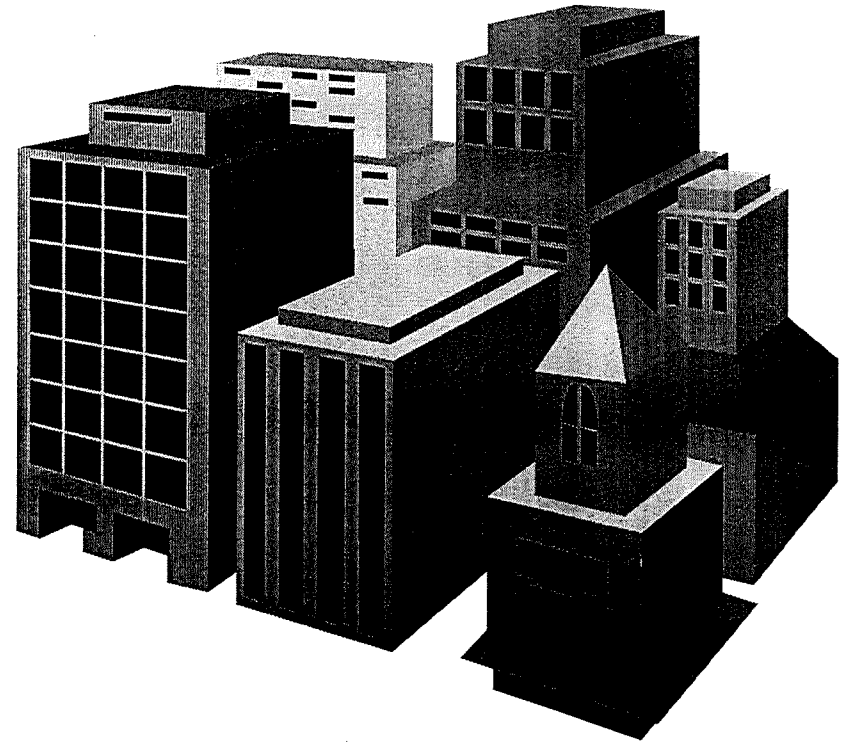
- ❑ State-sponsored Federal Outreach
- ❑ Company Financing
- ❑ Project Financing



# Start-up Assistance

State Science & Technology Institute

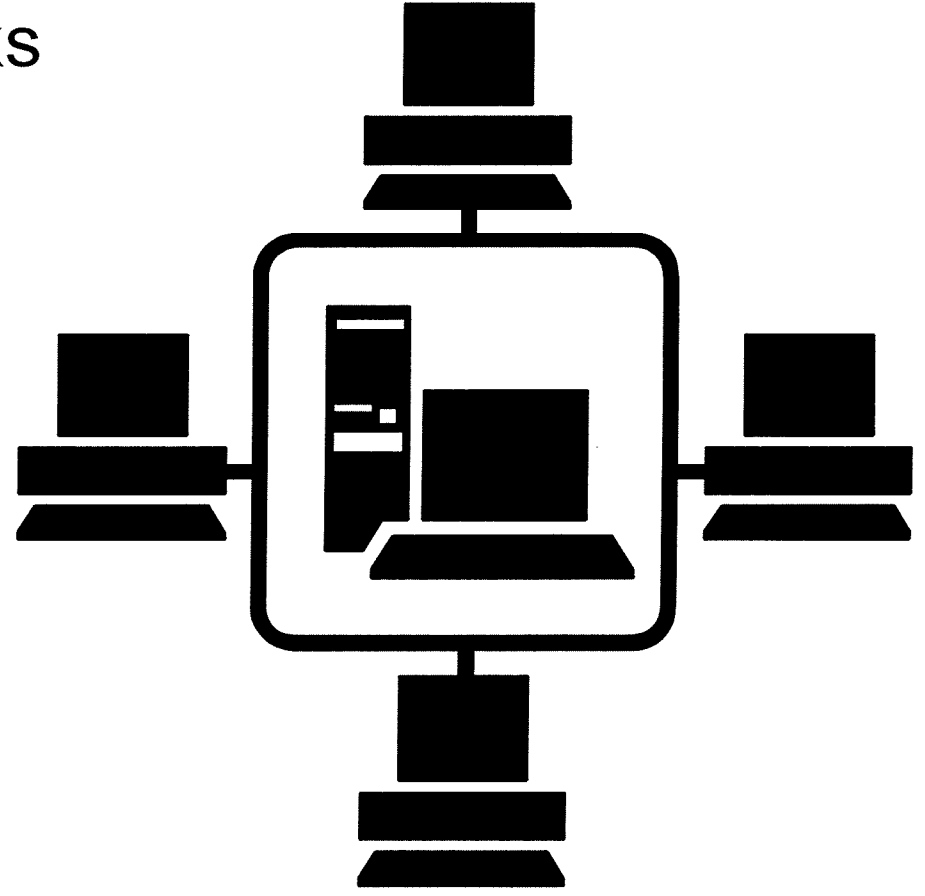
- ❑ Incubators
- ❑ Research parks



# Teaming

State Science & Technology Institute

- ❑ Industrial Networks
- ❑ Interactive Databases



# Key Kansas Statistics

State Science & Technology Institute

- ❑ 32nd in population
- ❑ 31st in gross state product
  - *largest sector is manufacturing (19.2% vs. 18.6% for US)*
- ❑ 12th in spending on coop tech programs
  - *\$11.1 million in FY94*
- ❑ 8th in spending per capita
  - *\$4.40 per person in FY94*

# Organization

State Science & Technology Institute

- ❑ **Centralization**
  - Minnesota
- ❑ **Central coordinating organization with regional delivery services**
  - Kansas and Ohio
- ❑ **Minimal central authority with highly autonomous local organizations**
  - North Carolina and Maryland
- ❑ **Decentralization**
  - Georgia

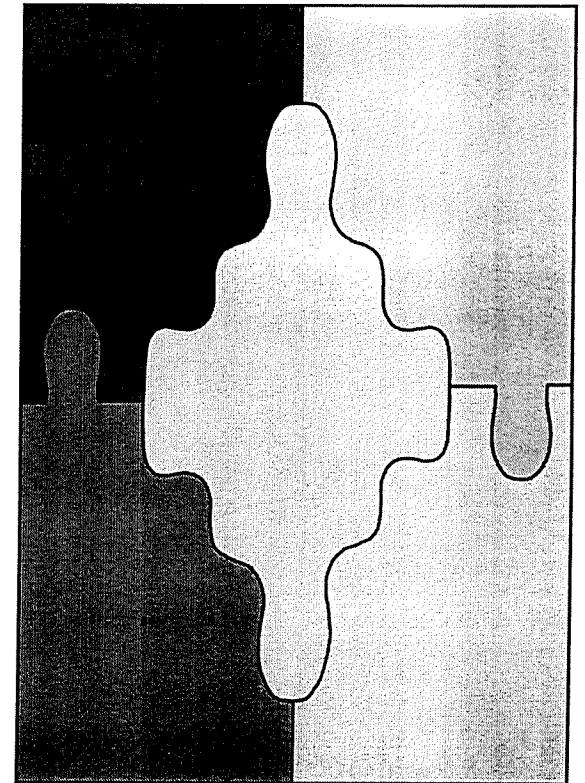
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# Kansas Activities

## State Science & Technology Institute

- ❑ University-Industry Technology Centers
- ❑ Equipment & Facility Access Program
- ❑ Technology Extension/Deployment
- ❑ State-sponsored Federal Outreach
- ❑ Project Financing
- ❑ Company Financing
- ❑ Industrial Network
- ❑ Database
- ❑ Related Educational Initiative



# Comparison with neighboring states

	KS	OK	MO
UITC	✓	✓	✓
UIRP			
EFAP	✓		
TED	✓	✓	✓
Project \$	✓	✓	
Company \$	✓		
SBIR	✓	✓	
Incubator			✓
Res Parks			✓
Databases	✓	✓	

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