PURDUE

TAP

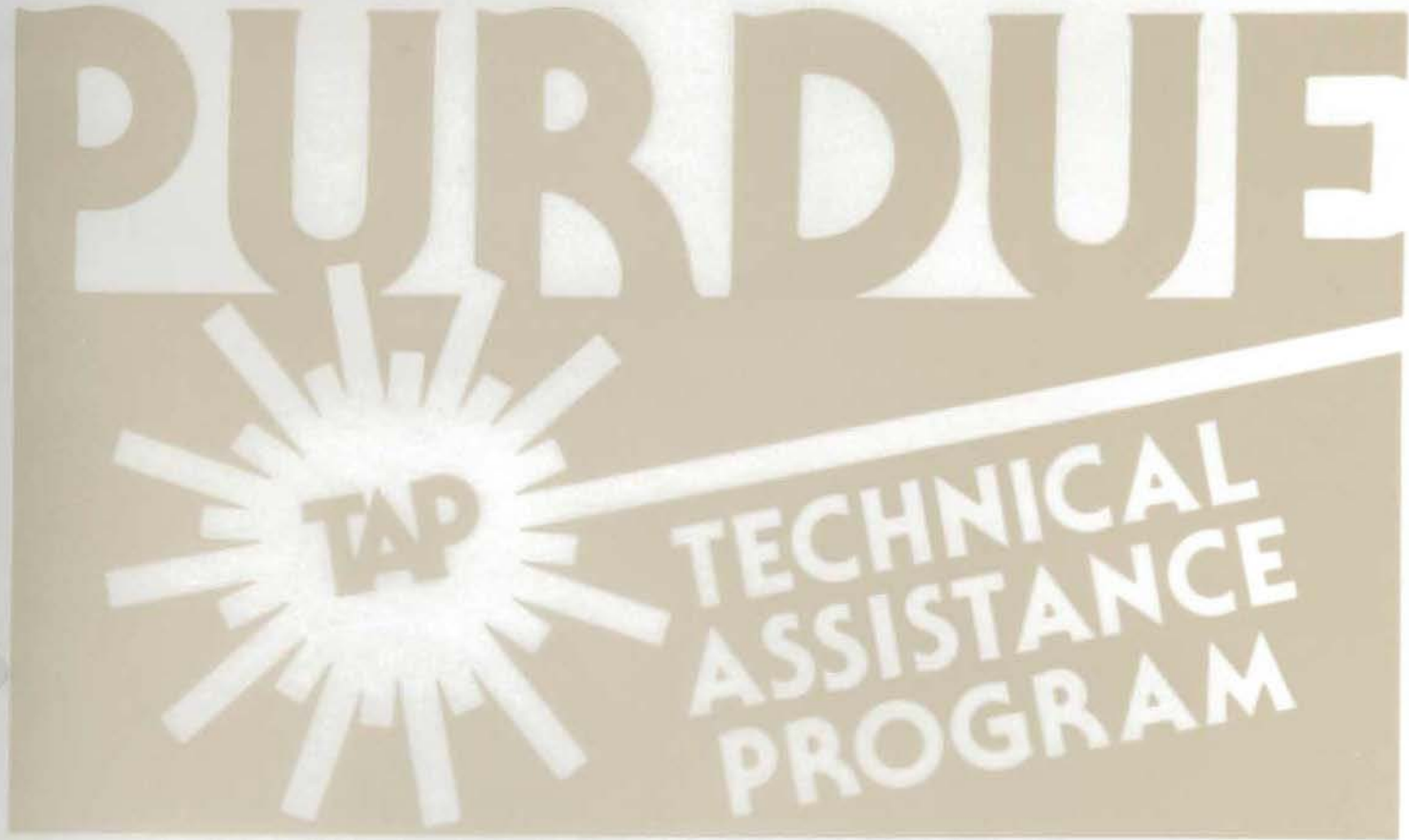
TECHNICAL ASSISTANCE PROGRAM

FIRST YEAR

ANNUAL REPORT

YEAR ENDING
JUNE 30, 1987

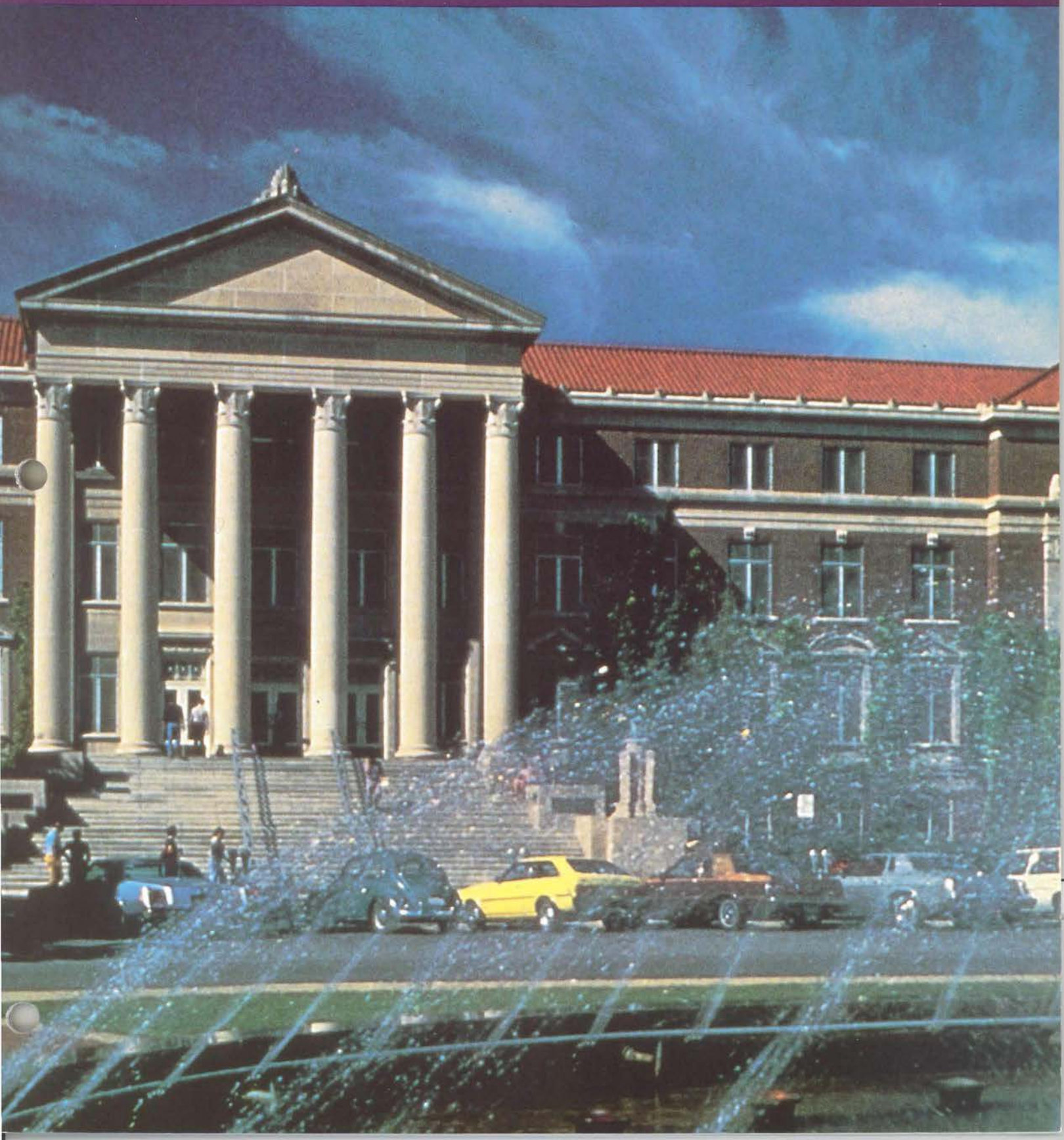
The Technical Assistance Program is administered by the Purdue University Schools of Engineering and is supported by the Indiana Economic Development Council.


PURDUE
TAP
TECHNICAL
ASSISTANCE
PROGRAM

For the First 12 Months Ending June 30, 1987

ANNUAL REPORT

The TAP program utilizes the technical resources of Purdue University to assist Indiana businesses and industries.



PURDUE TAP TECHNICAL ASSISTANCE PROGRAM

Ben Hillberry

From the Director

I am privileged to introduce this first annual report of the Purdue University Technical Assistance Program. It has been an exciting year for all concerned. Since TAP was created 14 months ago to facilitate the transfer of Purdue's technical resources to the service of Indiana businesses, industries, and governmental institutions, the TAP faculty and technical specialists have worked on more than 170 projects.

Requests for assistance have come from areas including food processing, pharmaceuticals, automotive, heavy machinery, electronics, and fabricated metal products and from every economic region in the state. TAP's analyses and recommendations have in turn led to new or improved methodologies, projected increases in profits, the saving of jobs, and the opening of new jobs. Benefits have accrued in almost every area. A closer association has also developed between

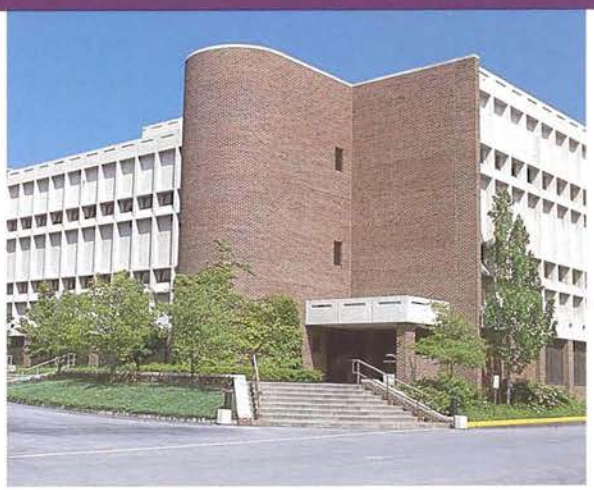
and to adapt and extend the use of technology to make them more competitive.

the University and the Indiana private and public sectors.

I congratulate the TAP personnel and the companies they have worked with, and invite you all to share in this brief overview of TAP's collective efforts to enhance productivity in the state and to help increase Indiana competitiveness in national and world markets.

PURDUE RESOURCES

This broad range of experience allows us to assist the Indiana business community by helpin



Research

The Technical Assistance Program has access to Purdue's state-of-the-art laboratories in Civil Engineering, Electrical Engineering, Food Science, Information Retrieval, Industrial Engineering, Management, Mechanical Engineering, Pharmacy and Health Science, and in other areas of the University as well.

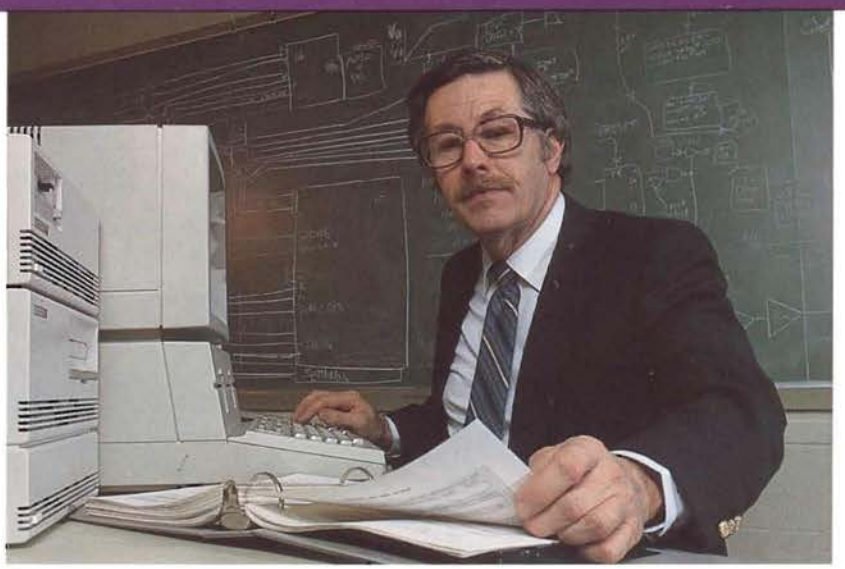
Faculty and Staff

Led by its director, the TAP faculty is made up of ten distinguished teachers and researchers whose accomplishments lie in the technical disciplines. TAP personnel also includes ten outstanding graduate students who serve as technical specialists and a support staff of three. In addition, TAP can draw on the resources and skills of other Purdue faculty and staff as the need arises. All of the TAP faculty and staff are experienced at working with business and industry in implementing new technological developments that fit the needs of each organization.

to define and analyze its technical needs and undertaking solutions to current problems.

Information

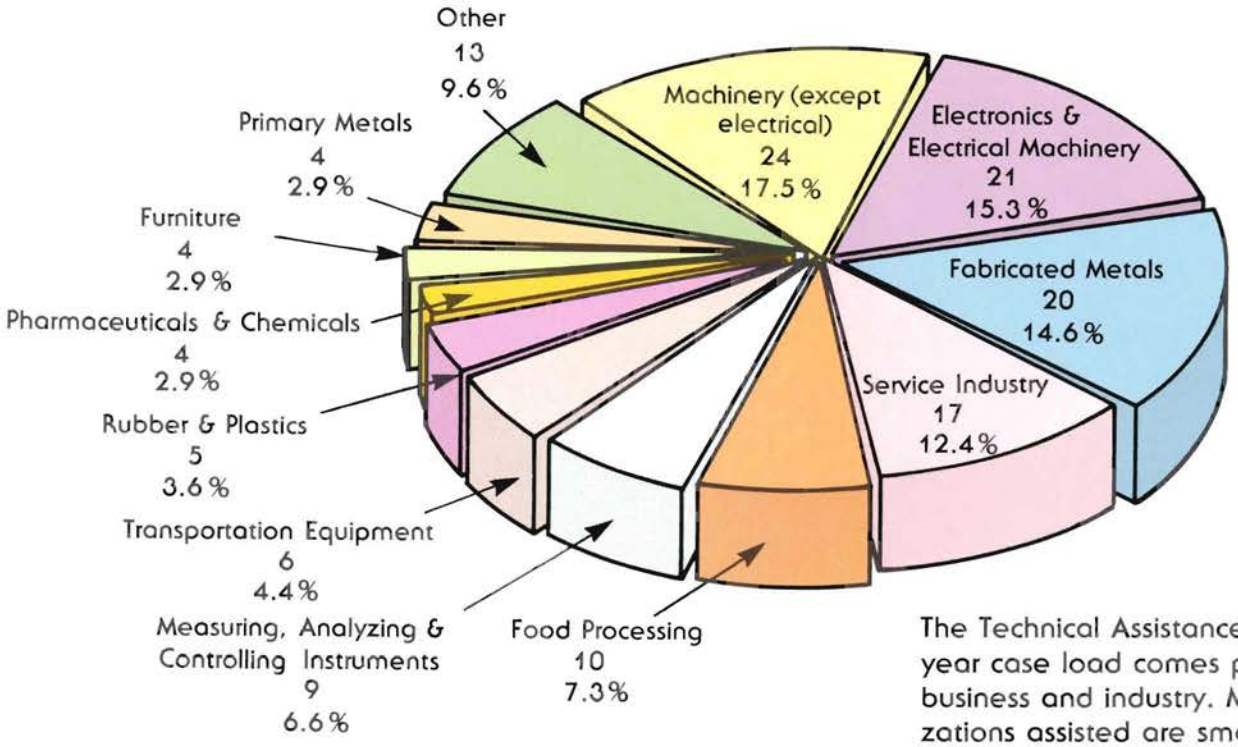
TAP resources include the Siegesmund Engineering Library in Purdue's Potter Engineering Center, with its over 42,000 volumes, and access to major technical data bases worldwide.



This exciting new program represents a commitment to enh

BUSINESSES AND INDUSTRIES ASSISTED

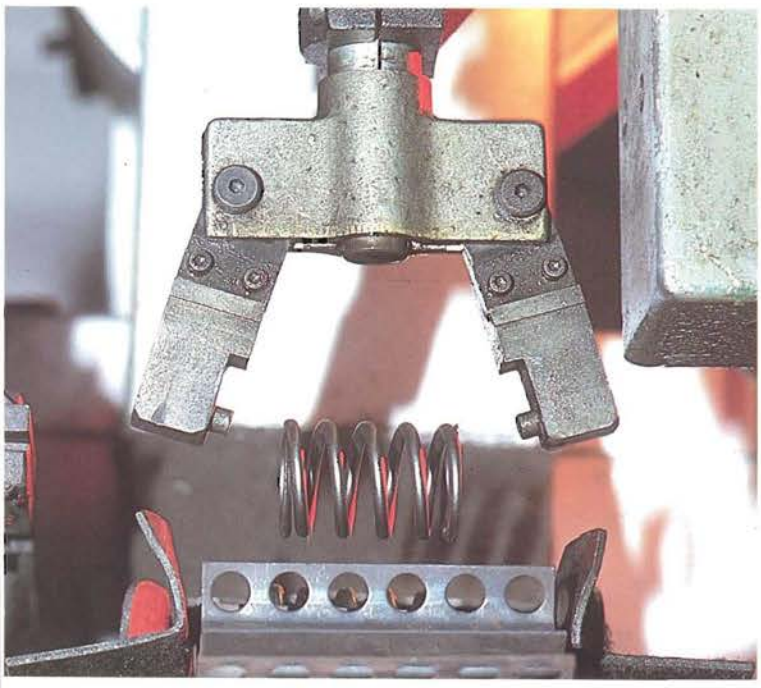
Total 137



Schools, Governme & Private Institution
10
5.6%

Other
7
4.0%

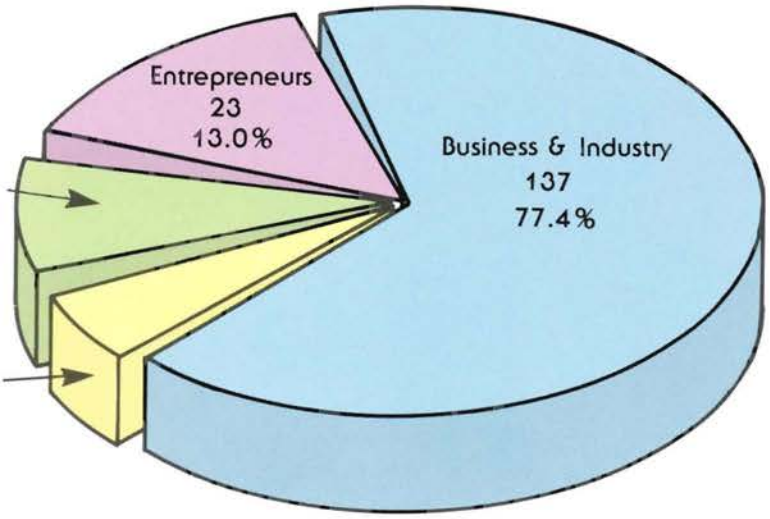
The Technical Assistance Program's first-year case load comes primarily from business and industry. Most of the organizations assisted are small; 85% had under 250 employees and 60% had 100 or less.



ce cooperation between the University, industry, and government.

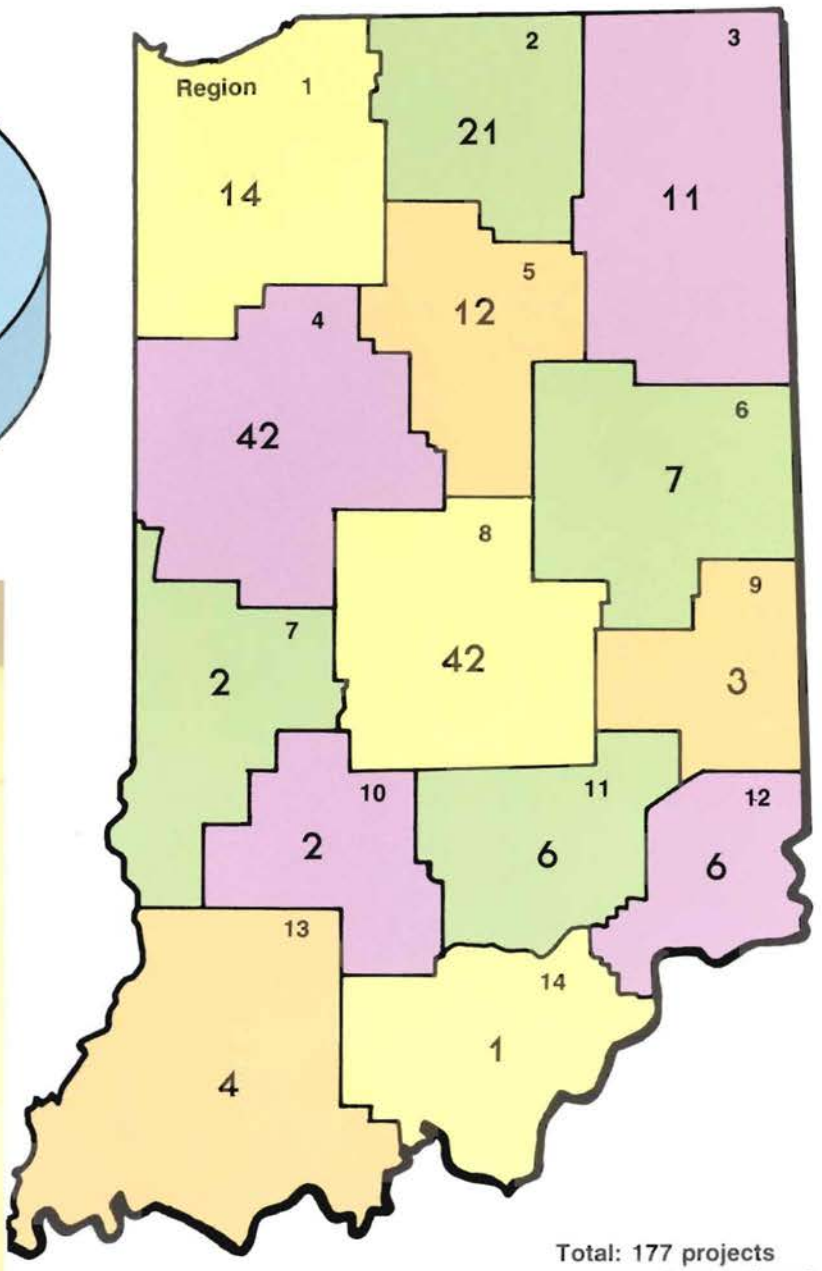
PROJECTS BY SECTOR

Total 177



PROJECTS BY ECONOMIC REGION

May 1986 through June 1987



Total: 177 projects
4 unassigned

Case Load by Indiana Economic Development Regions, Year Ending June 30, 1987.

THE TAP PROGRAM

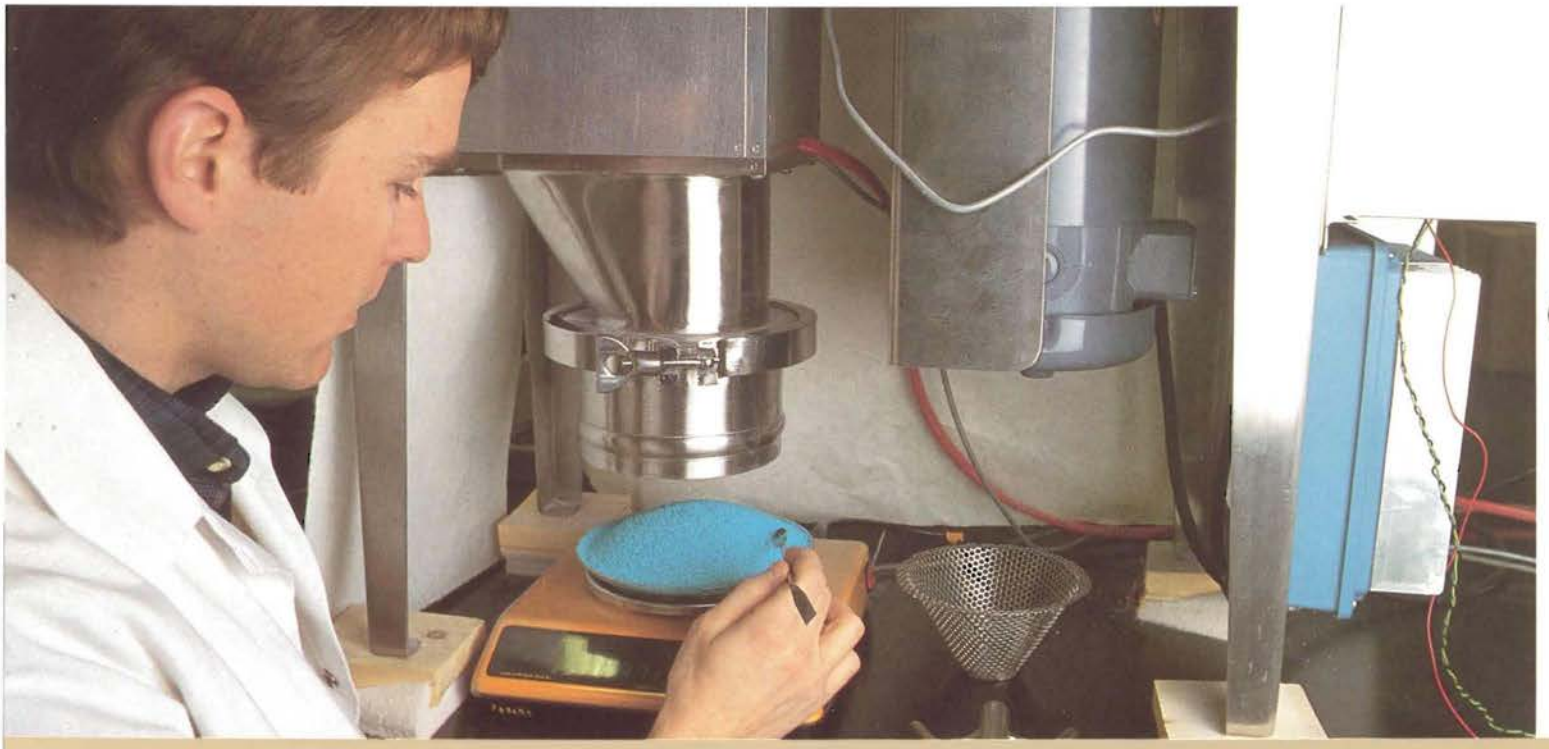
We are working to assist clients to move in directions that should,

The Purdue Technical Assistance Program was created fourteen months ago to provide a service to Indiana businesses, industries, and government institutions by helping them solve specific technical problems.

To this end TAP's principal efforts have been

- To improve access to new technologies,
- To assist in adapting to new and existing technologies, and
- To serve as a resource center to help solve these technical problems and needs.

TAP's ultimate goal is to stimulate economic growth in Indiana, and to bring the University and Indiana industry and government closer together.



Samples of TAP Projects

One of the nation's largest processors of fresh poultry products observed a decrease in the shelf life of one of their product lines from 21 to 14 days. TAP was asked to identify the cause of the change. An on-site audit was conducted and process problems were discovered. A report detailing recommended process changes was prepared for the company.

A bottling facility requested advice on solving a wastewater discharge problem. TAP personnel visited the facility, presented alternative solutions, and recommended several engineering consulting firms that could design a treatment system.

A machine shop in northern Indiana, hard hit by foreign and domestic competition, had fallen to 30% of its capacity output. TAP personnel worked closely with the company to perform a detailed analysis of the company's costs, both fixed and variable, the price structure, and the relationship to capacity levels. A regression analysis and other tools were used to define the cost/price/volume relationships and recommend positive strategies to increase sales volume and profits. Recommendations are now being implemented.

over time, lead to some dramatic improvements in productivity.

An Indianapolis area state-of-the-art laser machining shop requested help in developing an industrial marketing plan. A team of TAP personnel reviewed their past and present marketing efforts, identified their key machining capabilities, and reviewed the target markets. An industrial marketing plan was developed including ten specific recommendations. The plan has been undertaken by the company and most of the recommendations have been implemented.

A start-up company in the energy savings business developed an electro-thermal storage system. To test this system for thermal efficiency required special environmentally controlled conditions which exist only at a few facilities including Purdue. TAP personnel tested the product, determined that it was highly efficient, and provided extensive detailed test data to the firm. Additional prototypes have been made and the product continues under development.

A small pharmaceutical company asked for TAP help in developing a one-way liquid dispensing valve needed for a unique new product. TAP analyzed their initial design, tested their prototypes, and identified the design problems. The company has ordered new prototypes and is proceeding with product development.

PROGRAM RESULTS

Purdue, with its strength in science, engineering, and technology, is in a key

The values given here are the benefits projected on evaluation forms prepared by the users of TAP's services. Many of the forms also include benefits for which no monetary value can be given.

EVALUATION SUMMARIES

	Year 1	Year 2	Total
Increased Sales	325,000	1,140,000	1,465,000
Dollars Saved	157,000	259,000	416,000
New Jobs Created	20	39	59
Jobs Saved	13	12	25

*In order to measure the effectiveness of the program, each user of TAP services is requested to complete an evaluation form one month after receiving assistance. The form includes questions of *protocol* (e.g., promptness and appropriateness of response, the time frame of the interchange, satisfaction provided) and *effectiveness* (e.g., benefits of the assistance received and how utilized, expected dollar impact, number of jobs affected by TAP actions). Approximately two-thirds of the companies served returned the evaluation form.

Evaluation Summaries

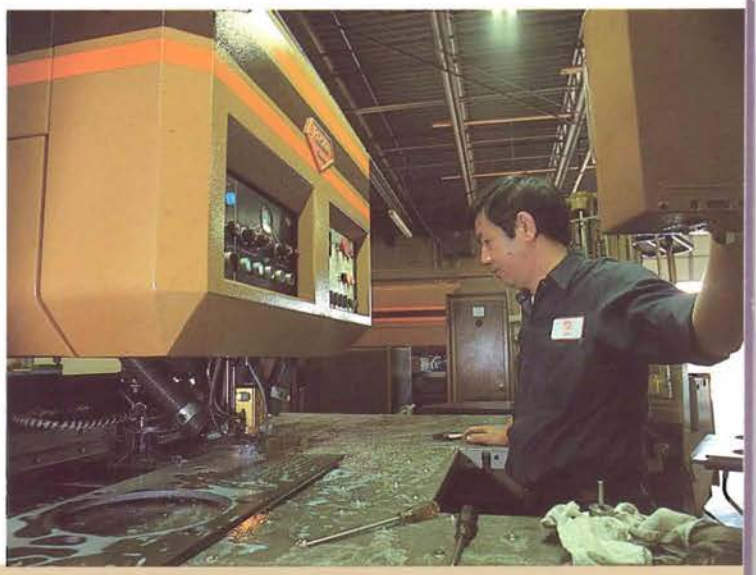
A large chemical manufacturer was helped in developing a plan for the security of their data processing system. They reported that TAP did an excellent job of clarifying the issues and recommending solutions. The recommendations have been implemented.

An automotive supplier who was helped in developing some specialized scheduling systems reported that the TAP services were excellent and more than was expected. The savings will be $50,000 in the first year and $100,000 in the second.

A successful foundry was helped with developing more efficient scheduling methods. They reported that the TAP assistance was very timely and above expectations, and that sales would be increased and costs decreased. In the next two years, $100,000 and 22 jobs will be saved and 8 new jobs will be added.

A manufacturer of material handling equipment was helped in the development of a capital expenditure proposal. The company reported that TAP assistance will result in reduced lead time, improved control and flexibility over schedules, and better control over quality. Dollar savings in this instance will be $75,000 in the first year and $85,000 in the second.

position to provide resources to industries and businesses throughout the state.



A small manufacturing company requested and received information on oil sample spectroscopic analysis for use in a preventive maintenance program. They reported that the information received is essential for their preventive maintenance program and that downtime of production equipment will be reduced by a significant amount. They projected savings of $2,000 per year.

A developing business in the wood products area received help in the market analysis of a specific product. They reported that the TAP services will help them expand by ten employees in each of the next two years.

A large transportation industry requested technical specifications and certification information on ultrasonic testing of welds. They reported that through TAP they were able to get the information quickly and that it is being used.

A manufacturer of control systems for heavy industry was helped in identifying potential markets in related industries. The company stated that they were very pleased with the quick TAP response and that they are using the information to increase sales.

TAP ASSISTANCE

We welcome the opportunity to serve Indiana industry, the state, and local government.

TAP services are tailored to the particular needs of the client company.

There are no charges for TAP services within the scope of the program, and the names of clients, the information provided by them, and the information generated by TAP remain confidential.

Typically, the client contacting the TAP office is asked to provide as much information as possible to help define the specific problem or need. Depending on the request, TAP's response will take one of several forms:

- Assist the client in finding the answer to a specific question;
- Provide the client with technical information from literature and library research;
- Undertake a project to study and analyze the need and assist the client in implementing the technology;
- Conduct experimental studies in the Purdue laboratories; or
- Refer the client to another organization or consultant who can better assist with the particular need.

To request assistance or to learn more about the Purdue University Technical Assistance Program, please call or write:

Technical Assistance Program
Engineering Administration Building
Purdue University
West Lafayette, Indiana 47907
Phone: (317) 494-6258

PURDUE

TAP TECHNICAL ASSISTANCE PROGRAM

FACULTY

David P. DeWitt
Professor, Mechanical Engineering

Charlotte A. Erdmann
Professor, Engineering Library

Bernard J. Liska
Professor, Food Science

Colin L. Moodie
Professor, Industrial Engineering

Lawrence L. Ogborn
Professor, Electrical Engineering

Garnet E. Peck
Professor, Pharmacy

Charles F. Scholer
Professor, Civil Engineering

Keith V. Smith
Professor, Management

Joe M. Tanchoco
Professor, Industrial Engineering

TECHNICAL SPECIALISTS

John E. Byers
Pharmacy

David J. Dougherty
Mechanical Engineering

Douglas R. Faux
Mechanical Engineering

Ellen J. Krulewich
Electrical Engineering

Mark P. Leksan
Management

Peter C. McKeighan
Mechanical Engineering

Kevin W. Metz
Management

Richard L. Nash
Industrial Engineering

Daniel F. Sandon
Management

"J. R." Steinem
Civil Engineering

STAFF

Ben M. Hillberry
Director
Professor, Mechanical Engineering

David R. McKinnis
Associate Director

Cindy L. Meadows
Administrative Assistant

Sherry L. Million
Secretary

PURDUE UNIVERSITY
WEST LAFAYETTE
INDIANA 47907