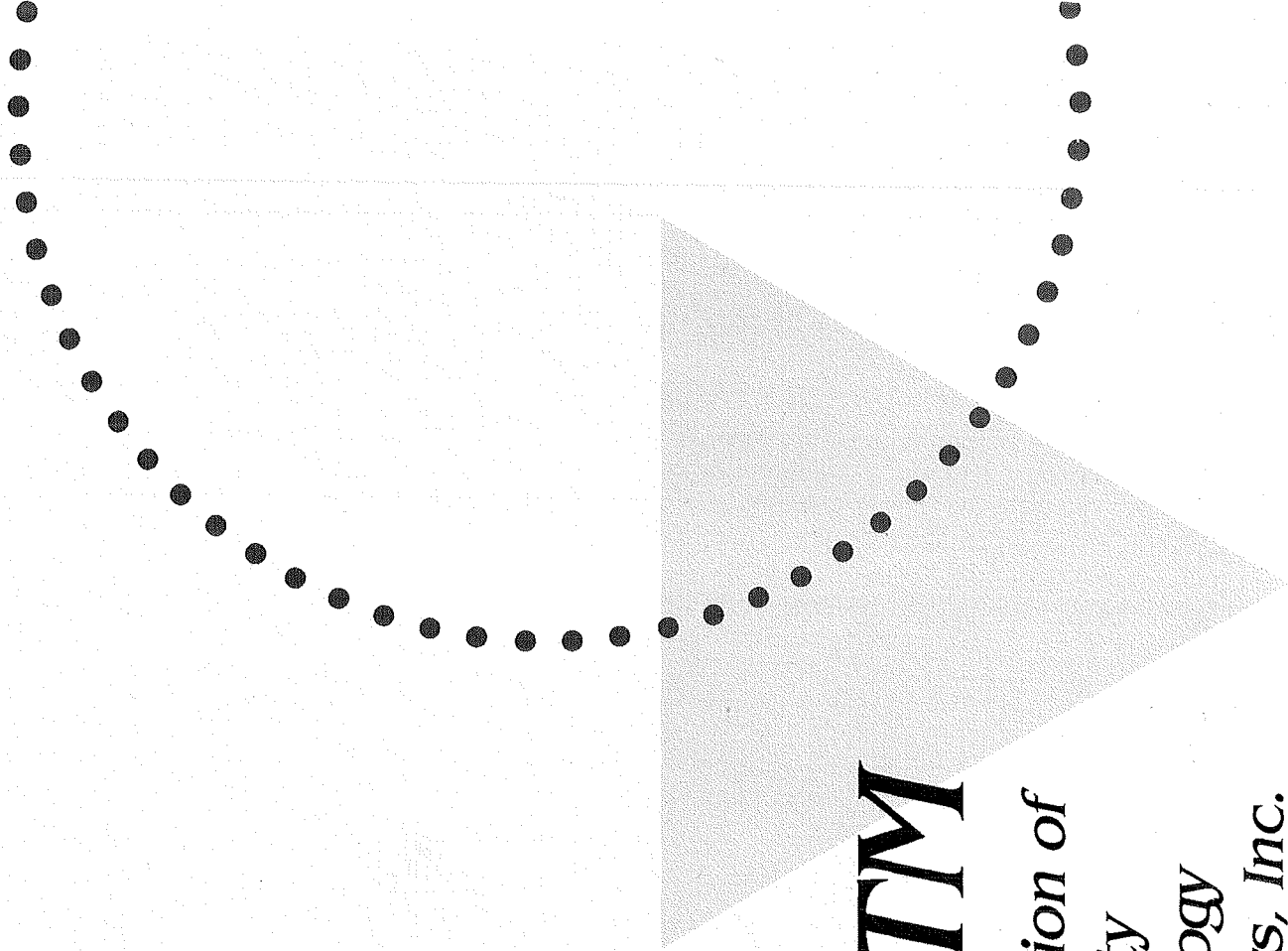


*AUTM  
Public Benefits Survey  
Summary of Results*



**AUTM**  
Association of  
University  
Technology  
Managers, Inc.



***AUTM Public Benefits Survey  
Summary of Results***

**Prepared for and Submitted to  
The Association of University Technology Managers, Inc.**

**April 1994**

**Conducted by:**

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**FOREWORD**

We are pleased to provide you with the results of the AUTM Public Benefits Survey. This survey was a follow-up to the AUTM Licensing Survey, which provided quantitative data on our programs. The AUTM Public Benefits Survey was forwarded to the respondents of the AUTM Licensing Survey (130 institutions), and requested data for products on the market and startups.

This report describes the products reported that have been protected and licensed through our technology transfer programs and are on the market today, and presents licensing data relevant to those products. It also summarizes the total number of startup companies founded by the participating institutions since 1980 for which initiation was dependent upon the licensing of these institutions' technologies.

Recognizing the effort that was required in completing the AUTM Licensing Survey, the follow-up campaign for the AUTM Public Benefits Survey was intentionally less aggressive, resulting in an overall response rate of 35% (45 institutions). On behalf of AUTM, we thank these institutions for providing additional data, without which this report would not have been possible.

For information on the price and availability of additional copies of this report, contact Ms. Penny Dalziel, AUTM, 71 East Avenue, Suite S, Norwalk, CT 06851-4903, Phone: (203) 852-7168 or Fax: (203) 838-5714. Questions regarding the material summarized in this report should be directed to our attention.

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## EXECUTIVE SUMMARY

### Introduction

The AUTM Public Benefits Survey was commissioned by the Association of University Technology Managers, Inc. (AUTM) as a follow-up to the AUTM Licensing Survey. The AUTM Licensing Survey was designed to gather data from U.S. and Canadian institutions on the licensing activities of their technology programs. The survey covered a large range of topics, including staffing levels, sponsored funding, gross royalties received, expenditures and reimbursements for legal fees, and statistics on invention disclosures and patent filings.<sup>1</sup>

The goal of the AUTM Public Benefits Survey was to illustrate, with concrete examples, that technology transfer programs are carrying out the mandate of the Bayh-Dole Act and achieving the goals it envisioned. To meet this objective, the survey requested the following:

1. Up to five licensable discoveries or inventions per respondent that are on the market today, generating sales.
2. The number of startup companies established (since 1980)<sup>2</sup> that were dependent upon licensing the institution's technology for initiation, even if the startups did not currently have products on the market.
3. Information on licensing activities with small and large business.<sup>3</sup>

### Survey Coverage

The survey population consisted of the 130 institutions that responded to the AUTM Licensing Survey. The response rate for the AUTM Public Benefits Survey was 35%, reflecting 45 participating institutions.<sup>4</sup>

### Summary of Results

The results of the AUTM Public Benefits Survey provide a *sampling* of products on the market and information on the licensing activities relevant to those products. It also offers the first aggregate reporting of a number of startups initiated since 1980 that were dependent upon the licensing of our institutions' technologies. Although the products and data described in this report are of interest, they do not account for the entire benefit that technology transfer programs bring to the community.

**Table 1**

**AUTM PUBLIC BENEFITS SURVEY**

**LICENSES GRANTED**

**177 PRODUCTS**



**440 LICENSES GRANTED**



**Nonexclusive**

**Exclusive**

**302**

**138**



**Small  
Business**

**Large  
Business**

**Small  
Business**

**Large  
Business**



**174  
(58%)**

**128  
(42%)**

**90  
(65%)**

**48  
(35%)**

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## SELECTED PRODUCTS ON THE MARKET AND PUBLIC BENEFITS

### Table of Contents

<b>ARIZONA</b> .....	<b>7</b>
Research Corporation Technologies	
University of Arizona	
<b>CALIFORNIA</b> .....	<b>9</b>
Name Confidential	
Stanford University	
University of Southern California	
<b>COLORADO</b> .....	<b>12</b>
National Jewish Center	
University of Colorado	
<b>CONNECTICUT</b> .....	<b>14</b>
University of Connecticut	
<b>DELAWARE</b> .....	<b>15</b>
University of Delaware	
<b>FLORIDA</b> .....	<b>17</b>
University of Miami	
<b>ILLINOIS</b> .....	<b>18</b>
Name Confidential	
Name Confidential	
University of Illinois @ Chicago	
<b>INDIANA</b> .....	<b>20</b>
Ball State University	
Indiana University	
<b>LOUISIANA</b> .....	<b>22</b>
Tulane University	
<b>MARYLAND</b> .....	<b>24</b>
Johns Hopkins University/Applied Physics Lab	
University of Maryland, College Park	
<b>MASSACHUSETTS</b> .....	<b>26</b>
Harvard University	
Name Confidential	
<b>MICHIGAN</b> .....	<b>28</b>
University of Michigan	

(By State and Institution)

**ARIZONA****Research Corporation Technologies****1. PSA Immunoassays**

Blood Test for Prostate Cancer.

<b>Date First Licensed:</b>	1993	Assay to assess level of prostate specific antigen circulating in the blood stream. (Source of Invention: Roswell Park Health Research).
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	
<b># of Companies Licensed:</b>	16	
<b># of Licenses to Small Companies:</b>	8	
<b># of Licenses to Large Companies:</b>	8	

**2. Cardiolite - Myoview**

Cationic Radiopharmaceuticals

<b>Date First Licensed:</b>	1983	Radiopharmaceuticals for heart imaging. (Source of Invention: University of Cincinnati).
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	
<b># of Companies Licensed:</b>	3	
<b># of Licenses to Small Companies:</b>	0	
<b># of Licenses to Large Companies:</b>	3	

**3. Avagen**

PEG-Polyethyleneglycol

<b>Date First Licensed:</b>	1983	PEG-Polyethyleneglycol reduces immunogenicity of enzyme therapies and increases the circulating half-life of the enzyme or drug. (Source of Invention: Indiana University).
<b>Type of License:</b>	E (by field)	
<b>Status of Patent Protection:</b>	P	
<b># of Companies Licensed:</b>	6	
<b># of Licenses to Small Companies:</b>	3	
<b># of Licenses to Large Companies:</b>	3	

<b>Was a Startup Company Formed as a Result of this Product?</b>	YES
--	-----

**4. Helicomax**

GMCSF

<b>Date First Licensed:</b>	N. Avail.	GMCSF - Granulo Macrophage Colony Stimulating Factor--An adjuvant to bone marrow transplantation.
<b>Type of License:</b>	E	

(By State and Institution)

**4. Chem Bred**

Chemical treatment to sterilize cotton plants.

**Date First Licensed:** 1987  
**Type of License:** E  
**Status of Patent Protection:** P

Compound is used in breeding hybrid cotton to produce higher yields, thereby lowering crop costs.

**Licensed to Large/Small Company:** Large**5. C 60 Fullerene**

A new class of carbon (method for making)

**Date First Licensed:** 1990  
**Type of License:** E  
**Status of Patent Protection:** PP

Potential public benefits are myriad: drug delivery, diamond films, optical material, superconducting materials, semiconductors, catalysts, lubricants and even sunglasses to list a few.

**Licensed to Large/Small Company:** Small

**Was a Startup Company Formed  
as a Result of this Product?** YES

**CALIFORNIA****Name Confidential****1. DNA Sequencer**

DNA Sequencer

**Date First Licensed:** 1983  
**Type of License:** E  
**Status of Patent Protection:** P

DNA Sequencer.

**Licensed to Large/Small Company:** Small

**Was a Startup Company Formed  
as a Result of this Product?** YES

**2. Peptide/Protein Sequencer**

Peptide/Protein Sequencer

**Date First Licensed:** 1983  
**Type of License:** E  
**Status of Patent Protection:** P

Peptide/Protein Sequencer.

**Licensed to Large/Small Company:** Small



(By State and Institution)

**2. Amplification of Genes**

Use of dhfr for Amplification.

<b>Date First Licensed:</b>	1984	Amplification of proteins produced in CHO cells.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	
<b># of Companies Licensed:</b>	7	
<b># of Licenses to Small Companies:</b>	0	
<b># of Licenses to Large Companies:</b>	7	

**3. V System Software**

Software (S83-041)

<b>Date First Licensed:</b>	1984	Software: Distributed real time operating system.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	C	
<b># of Companies Licensed:</b>	5	
<b># of Licenses to Small Companies:</b>	0	
<b># of Licenses to Large Companies:</b>	5	

**4. Anti Leu 12 Ma b**

Antibody (983-007)

<b>Date First Licensed:</b>	1983	Antibody against T cell antigen.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	UP	
<b>Licensed to Large/Small Company:</b>	Large	

**5. CHEF Electrophoresis**

Instrument (S86-049)

<b>Date First Licensed:</b>	1987	Electrophoresis Instrument.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	
<b>Licensed to Large/Small Company:</b>	Large	

**University of Southern California****1. Antigen (1978)**

Hybridoma Cell Lines

<b>Date First Licensed:</b>	1985	Histopathology.
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(By State and Institution)

**2. Anti-Mouse Alpha/Beta TCR**

Monoclonal Antibody

<b>Date First Licensed:</b>	1989	Used to study T-cell activation, characterize T-cell subpopulations, and examine immunological functions of T-cells from mice.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	UP	
<b># of Companies Licensed:</b>	3	
<b># of Licenses to Small Companies:</b>	2	
<b># of Licenses to Large Companies:</b>	1	

**3. Anti-V Beta TCR**

Monoclonal Antibody

<b>Date First Licensed:</b>	1990	Diagnostic: for the identification and study of diseases, such as toxic shock.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	UP	
<b>Licensed to Large/Small Company:</b>	Small	

**University of Colorado****1. Vitamin B12 Assay**

No Description Given.

<b>Date First Licensed:</b>	1979	B12 assay and No-Boil Method - used as a diagnostic test for B12 deficiency.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	
<b># of Companies Licensed:</b>	9	
<b># of Licenses to Small Companies:</b>	5	
<b># of Licenses to Large Companies:</b>	4	

**2. Sulfhydryl Amino Acid Assay**

Method for detecting Cobalamin and Folic Acid Deficiency.

<b>Date First Licensed:</b>	1988	Assays to determine cobalamin and folic acid deficiency, which is used as a diagnostic test.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	
<b># of Companies Licensed:</b>	1	
<b># of Licenses to Small Companies:</b>	1	
<b># of Licenses to Large Companies:</b>	0	

(By State and Institution)

**3. Cell-Tak**

Bioadhesive isolated from marine mussels.

**Date First Licensed:** 1986  
**Type of License:** E  
**Status of Patent Protection:** P

This adhesive promotes cell adhesion and growth during cell culture procedures. Other applications are under development.

**Licensed to Large/Small Company:** Small

**Was a Startup Company Formed as a Result of this Product?** YES

**4. Vinca flower varieties**

Series of vinca of varied colors.

**Date First Licensed:** 1986  
**Type of License:** E  
**Status of Patent Protection:** UP

Seeds are sold by distributors throughout the U.S. for use by home gardeners. Three of these varieties were chosen as All-America Selections in 1991.

**Licensed to Large/Small Company:** Large

**5. Plastic Filter Drain**

No Description Given.

**Date First Licensed:** 1983  
**Type of License:** NE  
**Status of Patent Protection:** P

Filter drain products for use in residential, commercial building, and road construction projects.

**# of Companies Licensed:** 2  
**# of Licenses to Small Companies:** 0  
**# of Licenses to Large Companies:** 2

**DELAWARE****University of Delaware****1. ProteinGenesis**

Industrial Enzymes

**Date First Licensed:** None  
**Type of License:** None  
**Status of Patent Protection:** UP

Protein engineering company formed for the creation of novel improved industrial enzymes.

**Was a Startup Company Formed as a Result of this Product?** YES

License Negotiations in Process.

(By State and Institution)

**FLORIDA****University of Miami****1. No Trade Name Given.**

Mononucleosis Diagnostic Test

Date First Licensed: 1987 Easy diagnostic test for mononucleosis.  
 Type of License: E  
 Status of Patent Protection: P

Licensed to Large/Small Company: Small

**2. No Trade Name Given.**

Microvial Kit

Date First Licensed: 1980 Diagnostic Kits.  
 Type of License: E  
 Status of Patent Protection: P

Licensed to Large/Small Company: Small

**3. No Trade Name Given.**

Monoclonal Antibody

Date First Licensed: 1983 Diagnostic Tests.  
 Type of License: E  
 Status of Patent Protection: P

Licensed to Large/Small Company: Large

**4. BSMP**

Bottom Shear Modulus Profiler

Date First Licensed: 1990 Public Benefits Not Described.  
 Type of License: E  
 Status of Patent Protection: P

Licensed to Large/Small Company: Small

**5. No Trade Name Given.**

Plasmid

Date First Licensed: 1991 Research.  
 Type of License: NE

(By State and Institution)

**3. SAW technology**

Hi-tech acoustic filter

<b>Date First Licensed:</b>	1992	New technology; gives high quality and performance at low cost.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	
<b># of Companies Licensed:</b>	1	
<b># of Licenses to Small Companies:</b>	0	
<b># of Licenses to Large Companies:</b>	1	

**4. Cybernetic potentiostat**

Analytical chemical measurements

<b>Date First Licensed:</b>	1983	New device.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	UP	

Licensed to Large/Small Company: Small

**5. Touch panel**

Computer I/O device

<b>Date First Licensed:</b>	1985	New technology.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	

<b># of Companies Licensed:</b>	12
<b># of Licenses to Small Companies:</b>	10
<b># of Licenses to Large Companies:</b>	2

**University of Illinois at Chicago****1. TICE BCG Vaccine**

Cell line &amp; trademark

<b>Date First Licensed:</b>	1986	Vaccine use in the treatment of transitional cell carcinoma of the bladder and immunization for tuberculosis.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	UP	

Licensed to Large/Small Company: Large

**2. NAPRALERT**

Database &amp; trademark

<b>Date First Licensed:</b>	1991	Natural products database of compounds derived from plants for medicinal purposes; containing bibliographic
<b>Type of License:</b>	E	

(By State and Institution)

# of Companies Licensed: 1  
 # of Licenses to Small Companies: 0  
 # of Licenses to Large Companies: 1

## 2. American Government Videotapes

No Description Given.

Date First Licensed: 1989  
 Type of License: E  
 Status of Patent Protection: C

Four videotapes depicting governmental processes and institutions for use in college and secondary school political science courses.

Licensed to Large/Small Company: Large

## 3. Project Direction

Videotape and Written Materials.

Date First Licensed: 1992  
 Type of License: NE  
 Status of Patent Protection: C

Information for peer-led college-age groups for anti-substance and alcohol abuse activities.

# of Companies Licensed: 1  
 # of Licenses to Small Companies: 1  
 # of Licenses to Large Companies: 0

## Indiana University

### 1. BioNeb

Bionebulizer

Date First Licensed: 1992  
 Type of License: E  
 Status of Patent Protection: P

Enables cost effective cell breakage for recovery of protein and/or genetic materials. Also provides efficient and novel means to insert genes into cells with applications to gene therapy and plant development.

Licensed to Large/Small Company: Small

### 2. Diabetic Rat Model

No Description Given.

Date First Licensed: 1991  
 Type of License: E  
 Status of Patent Protection: UP

Highly sensitive and effective animal model resembling human diabetes, which will be used to evaluate new diabetic drugs and the mechanism of action.

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
 as a Result of this Product? YES

(By State and Institution)

Licensed to Large/Small Company: Small

**2. Integrity Hip System**

Anatomical Hip Prosthesis

<b>Date First Licensed:</b>	1985	Total hip replacement system with curved anatomical stem. (The curvature of the primary item is patented, other components are not patented.)
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	

Licensed to Large/Small Company: Large

**3. Animal Model for the Study of Lyme Disease**

Non-Human Primate Model

<b>Date First Licensed:</b>	1993	A non-human primate model that mimics the symptoms of Lyme disease. Provides a model to study the efficacy of vaccine candidates.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	UP	

<b># of Companies Licensed:</b>	1
<b># of Licenses to Small Companies:</b>	0
<b># of Licenses to Large Companies:</b>	1

**4. PACAP**

Pituitary Adenylate Cyclase Activating Polypeptide

<b>Date First Licensed:</b>	1992	Hypothalamic polypeptide with adenylate cyclase stimulating activity. Licensed as a research reagent. Compound stimulates growth of neurites and acts as a nerve growth factor.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	

<b># of Companies Licensed:</b>	4
<b># of Licenses to Small Companies:</b>	4
<b># of Licenses to Large Companies:</b>	0

**5. Helixx<sup>TM</sup> Breast Localization Wire**

Helical Lesion Marker

<b>Date First Licensed:</b>	1991	A device for marking small, radiologically discovered lesions in the breast. The device is visible under ultrasonic imaging, whereas other tumor markers are not.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	

Licensed to Large/Small Company: Small

(By State and Institution)

5. AID

Recorder w/ Patient Alarm and Service Request for Automatic Implantable Defibrillator.

Date First Licensed: 1990

Type of License: E

Status of Patent Protection: P

Real-time recording of fibrillation activity, automatic alerting of the patient, and storage of all events.

Licensed to Large/Small Company: Small

Univ. of Maryland, College Park1. Bursa Vac PLUS

Poultry Vaccine

Date First Licensed: 1989

Type of License: E

Status of Patent Protection: P

A new vaccine for the poultry industry was developed. It protects poultry from an immuno suppressant virus that attacks the bursa. The product is estimated to have saved hundreds of millions of dollars in the poultry industry.

Licensed to Large/Small Company: Large

2. XLT4

Salmonella detection media

Date First Licensed: 1991

Type of License: NE

Status of Patent Protection: P

New media formulation improves speed and accuracy of detection of salmonella in medical and agricultural environments.

# of Companies Licensed: 5

# of Licenses to Small Companies: 3

# of Licenses to Large Companies: 2

3. Colta<sup>TM</sup>

Monoclonal antibody for vibrio cholerae.

Date First Licensed: 1992

Type of License: E

Status of Patent Protection: UP

This very specific monoclonal antibody allows for detection of cholerae within 5 minutes when combined with SMART<sup>R</sup> technology of the licensee (test kit).

Licensed to Large/Small Company: Small



(By State and Institution)

**3. CHARMM**

Computer Software

<b>Date First Licensed:</b>	1985	Computer software used for
<b>Type of License:</b>	E	chemical analysis and design.
<b>Status of Patent Protection:</b>	UP	

**Licensed to Large/Small Company:** Small

**4. GP120**

Antigen for use in diagnostics &amp; vaccines for AIDS.

<b>Date First Licensed:</b>	1987	Incorporated in several diagnostic tests for AIDS: In
<b>Type of License:</b>	E	development are several AIDS vaccines based in
<b>Status of Patent Protection:</b>	P	this technology. The master licensee sublicenses

widely.

**Licensed to Large/Small Company:** Small

**5. Autograf**

Replacement Skin

<b>Date First Licensed:</b>	1987	Methods for growing sheets of skin from
<b>Type of License:</b>	E	small samples from patient. Provides
<b>Status of Patent Protection:</b>	P	replacement skin for treatment of burn

victims.

**Licensed to Large/Small Company:** Small

**Was a Startup Company Formed  
as a Result of this Product?** YES

**Name Confidential****1. DePuy Profile Hip**Profile<sup>R</sup> Hip

<b>Date First Licensed:</b>	1992	Hip Prosthesis Design.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	

**Licensed to Large/Small Company:** Large

**2. Radionics-X-knife**

Radiologic software

<b>Date First Licensed:</b>	1990	Software tool for stereostatic radiological treatments.
<b>Type of License:</b>	E	

(By State and Institution)

**2. Cold-adapted Influenza Virus**

No Description Given.

<b>Date First Licensed:</b>	1993	Stable temperature sensitive human flu vaccine
<b>Type of License:</b>	E (by territory)	administered intranasally.
<b>Status of Patent Protection:</b>	PP	
<b>Licensed to Large/Small Company:</b>	Large	

**MINNESOTA****Mayo Foundation****1. ANALYZE**

Software

<b>Date First Licensed:</b>	1988	Multidimensional Biomedical Image
<b>Type of License:</b>	NE	Visualization and Analysis.
<b>Status of Patent Protection:</b>	UP	

<b># of Companies Licensed:</b>	4
<b># of Licenses to Small Companies:</b>	2
<b># of Licenses to Large Companies:</b>	2

<b>Was a Startup Company Formed as a Result of this Product?</b>	YES
--	-----

**2. Genesis Knee**

Knee Prosthesis

<b>Date First Licensed:</b>	1986	Modular Total Knee System.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	

<b>Licensed to Large/Small Company:</b>	Large
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**University of Minnesota****1. Autoscope**

Vehicle Detection System

<b>Date First Licensed:</b>	1991	Vehicle Detection System.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	

(By State and Institution)

**MISSOURI****University of Missouri System****1. Ceretec**

Radiopharmaceutical

Date First Licensed: 1983

Type of License: E

Status of Patent Protection: P

Radiopharmaceutical used to image the brain.

Licensed to Large/Small Company: Large

**2. ENDOVAC- Bovi<sup>R</sup> -Porci<sup>TM</sup> -Equi<sup>R</sup>  
and ENDOSERUM. Veterinary Vaccine.**

Date First Licensed: 1987

Type of License: E

Status of Patent Protection: PP

Salmonella Typhimurium Antiserum, Equine Origin;  
Salmonella Typhimurium Bacterin-Toxoid.

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
as a Result of this Product? YES**3. CAPD**

Dialysis Solution.

Date First Licensed: 1979

Type of License: E

Status of Patent Protection: P

Portable peritoneal dialysis solution.

Licensed to Large/Small Company: Large

**4. Swan Neck Catheter  
Catheter**

Date First Licensed: 1989

Type of License: E

Status of Patent Protection: P

A peritoneal catheter comprises a flexible catheter  
tube carrying porous cuff means to facilitate permanent  
securance of the catheter to the abdominal wall.

Licensed to Large/Small Company: Small

(By State and Institution)

**4. Receptor**

Computer-Aided Drug Design

<b>Date First Licensed:</b>	1991	Software for the improvement in computer assisted design of pharmaceuticals.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	UP	
<b>Licensed to Large/Small Company:</b>	Large	

**5. Digital Switch**

No Description Given.

<b>Date First Licensed:</b>	1990	Asynchronous transfer mode (ATM) switch for digital communications in computer workstations.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	
<b># of Companies Licensed:</b>	2	
<b># of Licenses to Small Companies:</b>	0	
<b># of Licenses to Large Companies:</b>	2	

**NEBRASKA****University of Nebraska - Lincoln****1. Soy Pass**

Ruminant Feed

<b>Date First Licensed:</b>	1987	A ruminant feed that causes the animal to utilize the protein in the feed more efficiently.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	
<b>Licensed to Large/Small Company:</b>	Large	

**2. "609" Buffalograss**

Buffalograss cultivar

<b>Date First Licensed:</b>	1991	A buffalograss that requires less water, less fertilizer, and less mowing.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	PP	
<b>Licensed to Large/Small Company:</b>	Small	

(By State and Institution)

Licensed to Large/Small Company: Small

**2. Diogenes**

Enhancer for the chemiluminescence of luminol.

<b>Date First Licensed:</b>	1991	Diagnostic kit which is used to
<b>Type of License:</b>	E	diagnose and monitor the progress
<b>Status of Patent Protection:</b>	PP	of treatment of various diseases.

Licensed to Large/Small Company: Small

**3. Mab 1808**

Antibody to Dystrophin

<b>Date First Licensed:</b>	1991	Research reagent.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	UP	

<b># of Companies Licensed:</b>	2
<b># of Licenses to Small Companies:</b>	1
<b># of Licenses to Large Companies:</b>	1

**4. Macscope**

Computerized oscilloscope.

<b>Date First Licensed:</b>	1988	Extensively used for educational
<b>Type of License:</b>	E	purposes.
<b>Status of Patent Protection:</b>	UP	

Licensed to Large/Small Company: Small

**5. Interleukin-2 Mab**

Interleukin-2 Monoclonal Antibody

<b>Date First Licensed:</b>	1984	Diagnostics and research products,
<b>Type of License:</b>	NE	kits.
<b>Status of Patent Protection:</b>	P	

<b># of Companies Licensed:</b>	2
<b># of Licenses to Small Companies:</b>	1
<b># of Licenses to Large Companies:</b>	1

(By State and Institution)

**5. Nanocarb**

Spray Conversion Nanophase Composites

**Date First Licensed:** 1990  
**Type of License:** E  
**Status of Patent Protection:** PP

**Licensed to Large/Small Company:** Small

**Was a Startup Company Formed  
as a Result of this Product?** YES

**NEW YORK****Columbia University****1. Macromodel**

Molecular Modeling Software

**Date First Licensed:** 1987  
**Type of License:** NE  
**Status of Patent Protection:** UP

Software for modeling complex chemical and biochemical molecules.

**# of Companies Licensed:** 30  
**# of Licenses to Small Companies:** 22  
**# of Licenses to Large Companies:** 8

**2. Tissue Plasminogen Activator (TPA)**

Drug for Heart Attack Victims

**Date First Licensed:** 1988  
**Type of License:** NE  
**Status of Patent Protection:** P

Process is for insertion of genes into mammalian cells.

**# of Companies Licensed:** 1  
**# of Licenses to Small Companies:** 0  
**# of Licenses to Large Companies:** 1

**3. Erythropoieian (EPO)**

Drug for Anemia

**Date First Licensed:** 1990  
**Type of License:** NE  
**Status of Patent Protection:** P

Process is for insertion of genes into mammalian cells.

(By State and Institution)

Licensed to Large/Small Company: Large

3. Fibriscint™, NYB-"MoAbs"

Monoclonal antibodies to fibrinogen/fibrin

Date First Licensed: 1986  
 Type of License: E  
 Status of Patent Protection: P

In-vivo Miagnostic for imaging blood clots; in-vitro reagent for monitoring progression of clot formation and/or dissolution. There is an exclusive license for each of these uses.

Licensed to Large/Small Company: Large

## NORTH CAROLINA

Name Confidential1. Easy Eggs/Simply Eggs

Ultra pasteurized liquid whole egg product.

Date First Licensed: 1988  
 Type of License: E  
 Status of Patent Protection: P

Aseptically packaged liquid whole egg product to extend refrigerated shelf-life.

If Non-Exclusively Licensed:

Licensed to Large/Small Company: Small

2. No Trade Given.

High strength, ultra-oriented polyester fibers.

Date First Licensed: 1991  
 Type of License: NE  
 Status of Patent Protection: P

A process for producing high strength, light weight, Kevlar<sup>®</sup>-like polyester fibers.

# of Companies Licensed: 2  
 # of Licenses to Small Companies: 0  
 # of Licenses to Large Companies: 2

3. No Trade Name Given.

Root-specific gene promoter

Date First Licensed: 1992  
 Type of License: E  
 Status of Patent Protection: P

A well-characterized gene promoter for the promotion of exogenous genes in plant roots. It has numerous and varied applications in a variety of fields from medical to agricultural.

(By State and Institution)

**TENNESSEE****St. Jude Children's Research Hospital****1. SJ25-C1 (CD-19)**

Monoclonal Antibody.

<b>Date First Licensed:</b>	1990	Immunophenotyping for acute leukemia.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	UP	

<b># of Companies Licensed:</b>	10
<b># of Licenses to Small Companies:</b>	6
<b># of Licenses to Large Companies:</b>	4

**2. SJ5-1B4 (CD-10)**

Monoclonal Antibody.

<b>Date First Licensed:</b>	1992	Immunophenotyping for acute leukemia.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	UP	

<b># of Companies Licensed:</b>	2
<b># of Licenses to Small Companies:</b>	2
<b># of Licenses to Large Companies:</b>	0

**3. Hybridoma (CSF-1R)**

Monoclonal Antibodies.

<b>Date First Licensed:</b>	1988	Detection of expression of CSF receptors in human tissue.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	UP	

<b>Licensed to Large/Small Company:</b>	Large
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**TEXAS****Baylor College of Medicine****1. No Trade Name Given**

Small Particle Aerosol Generator

<b>Date First Licensed:</b>	1984	Used to administer Ribavirin <sup>TM</sup> . Device enables aerosol administration of Drug to treat RSV in babies.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	



(By State and Institution)

**University of Texas Southwestern****1. Citracal**

Tablet for prevention of osteoporosis.

**Date First Licensed:** 1985**Type of License:** E**Status of Patent Protection:** P

Over-the-counter calcium preparation for prevention for osteoporosis. Advantages over the other preparations include smaller tablet size and increased bioavailability.

**Licensed to Large/Small Company:** Small**2. Stone Risk/Stone Track**

Kit for measurement of kidney stone formation risk.

**Date First Licensed:** 1985**Type of License:** E**Status of Patent Protection:** P

Method of preservation, processing, analysis and reporting of risk factors associated with kidney stone formation from urine specimens.

**Licensed to Large/Small Company:** Small**3. Urocit-K**

Treatment of calcium renal stones.

**Date First Licensed:** 1982**Type of License:** E**Status of Patent Protection:** P

Use of Urocit-K (potassium citrate) causes an increase in urinary citrate which decreases calcium stone formation.

**Licensed to Large/Small Company:** Small**4. Thiola**

Orphan drug for treatment of cystinuria.

**Date First Licensed:** 1985**Type of License:** E**Status of Patent Protection:** UP

Decreases cystine stone formation. Mode of action similar to that of penicillamine, however, fewer side effects.

**Licensed to Large/Small Company:** Small**5. Calcibind**

Orphan drug for treatment of hypercalciuria.

**Date First Licensed:** 1982**Type of License:** E**Status of Patent Protection:** UP

Decreases effects of absorptive hypercalciuria by binding calcium in the gut to reduce calcium absorption.

(By State and Institution)

**4. Supercritical Fluid Chromatography**

Analytical Chemistry Instrument.

<b>Date First Licensed:</b>	1985	A unique separation technique for analytical chemistry.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	

<b>Licensed to Large/Small Company:</b>	Small
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<b>Was a Startup Company Formed as a Result of this Product?</b>	YES
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**5. Moxtek**

X-ray optics

<b>Date First Licensed:</b>	1988	X-ray detection windows and other x-ray optical technology.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	

<b>Licensed to Large/Small Company:</b>	Small
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<b>Was a Startup Company Formed as a Result of this Product?</b>	YES
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**University of Utah****1. Radiolabeled Technitium Chelates**

Imaging agent

<b>Date First Licensed:</b>	1986	Renal function determination.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	

<b>Licensed to Large/Small Company:</b>	Large
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**2. Per-Q-Cath**

Catheter

<b>Date First Licensed:</b>	1983	Drug delivery.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	UP	

<b>Licensed to Large/Small Company:</b>	Large
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(By State and Institution)

**VIRGINIA****University of Virginia Patents Foundation****1. Adenocard<sup>TM</sup>**

Pharmaceutical

**Date First Licensed:** 1985**Type of License:** E**Status of Patent Protection:** P

Therapeutic drug to treat and diagnose atrio-ventricular conduction disturbances in the ischemic heart.

**Licensed to Large/Small Company:** Small**2. SAF-T-CLIK and Shamrock**

Medical Devices

**Date First Licensed:** 1987**Type of License:** E**Status of Patent Protection:** P

Redesigned syringes and phlebotomy devices to avoid accidental needlestick injuries.

**Licensed to Large/Small Company:** Small**Was a Startup Company Formed  
as a Result of this Product?** YES**3. pp60<sup>src</sup>**

Monoclonal Antibodies

**Date First Licensed:** 1992**Type of License:** E**Status of Patent Protection:** UP

Antibodies to study the properties of individual protein tyrosine kinases and their substrates.

**Licensed to Large/Small Company:** Small**4. 6G9**

Monoclonal Antibodies.

**Date First Licensed:** 1990**Type of License:** NE**Status of Patent Protection:** UP

Antibody to detect and quantitate phospho-tyrosine containing proteins.

**# of Companies Licensed:** 2**# of Licenses to Small Companies:** 1**# of Licenses to Large Companies:** 1

(By State and Institution)

**4. Anti-integrins**

## Monoclonal Antibodies

<b>Date First Licensed:</b>	1989	Anti-integrin monoclonal antibodies for research on
<b>Type of License:</b>	NE	cell adhesion.
<b>Status of Patent Protection:</b>	UP	
<b># of Companies Licensed:</b>	6	
<b># of Licenses to Small Companies:</b>	3	
<b># of Licenses to Large Companies:</b>	3	

(By State and Institution)

Licensed to Large/Small Company: Large

**5. SPME Sampling Technique**

Solid phase microextraction

Date First Licensed: 1992

Type of License: E

Status of Patent Protection: P

SPME fibers and holders provide direct, solvent-free extraction of organic compounds from aqueous samples.

Licensed to Large/Small Company: Large

**Queen's University****1. O'Straint**

Wheelchair Restraint System

Date First Licensed: 1983

Type of License: E

Status of Patent Protection: P

A wheelchair tie-down system which has captured the major market share in buses for the handicapped. System offers a safe and effective way of securing wheelchair and occupant.

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
as a Result of this Product? YES**2. Flower Preservation**

Process for Preserving Flowers.

Date First Licensed: 1986

Type of License: E

Status of Patent Protection: P

Company sells preserved flowers for decorative and novelty markets. Process accommodates a wide range of flowers for many different markets.

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
as a Result of this Product? YES**3. O'Nial**

New Computer Language

Date First Licensed: 1984

Type of License: E

Status of Patent Protection: C

NIAL is a general purpose, interactive programming language.

**Suggested Citation**

The Association of University Technology Managers, Inc. report entitled, *AUTM Public Benefits Survey Summary of Results*, April 1994.

**Availability of Publication**

For information on the price and availability of the *AUTM Public Benefits Survey Summary of Results* or other AUTM publications footnoted in this report, contact Ms. Penny Dalziel, AUTM, 71 East Avenue, Suite S, Norwalk, CT 06851-4903, Phone: (203) 852-7168, Fax: (203) 838-5714.

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**(By State and Institution)**

**Licensed to Large/Small Company:** Small

**Was a Startup Company Formed  
as a Result of this Product?** YES

(By State and Institution)

**CANADA****Name Confidential****1. Maple**

Symbolic Mathematics Software

**Date First Licensed:** 1989**Type of License:** E**Status of Patent Protection:** UP

Maple V is an easy-to-learn computer algebra system for both symbolic and numeric computation. It offers superior mathematical functionality, speed, and accuracy as well as 3D color graphics, programmability, and efficient memory management.

**Licensed to Large/Small Company:** Small**Was a Startup Company Formed as a Result of this Product?** YES**2. Dantec Electronics Limited**

Optimized solids drying processes.

**Date First Licensed:** 1985**Type of License:** E**Status of Patent Protection:** UP

Dantec supply optimized drying solutions for a wide range of particulate drying procedures including grains, food, plastics, pharmaceuticals, rubber, etc.

**Licensed to Large/Small Company:** Small**Was a Startup Company Formed as a Result of this Product?** YES**3. Ash Monitoring System**

Monitoring the ash build-up in large coal-fired steam boilers.

**Date First Licensed:** 1984**Type of License:** E**Status of Patent Protection:** P

Signals from heat flux meters installed on the fire side of heat exchange surfaces in large coal-fired boilers provide a graphic picture of the extent and location of ash fouling to allow efficient and effective soot blowing sequences and programs.

**Licensed to Large/Small Company:** Large**4. Tornac Rubber**

Catalyst for high nitrile rubber

**Date First Licensed:** 1986**Type of License:** E**Status of Patent Protection:** P

A catalyst system developed allowed for the economic production of a high heat and oil resistant rubber and the construction of a new plant.

## (By State and Institution)

5. Adenosine Antagonists

Pharmaceutical

<b>Date First Licensed:</b>	1990	A drug to treat cardiac rhythm disturbances, mechanical dysfunction and hypotension.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	
<b>Licensed to Large/Small Company:</b>	Small	

## WASHINGTON

Fred Hutchinson Cancer Research Center1. Ceprate LC Laboratory Cell Separation System

Cell Separation Device

<b>Date First Licensed:</b>	1989	(1) Laboratory cell separation system, and (2) Clinical cell separation system for selection of cells for therapeutic and diagnostic application.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	

**Licensed to Large/Small Company:** Small

**Was a Startup Company Formed as a Result of this Product?** YES

2. Nested Deletion Kits

DNA Sequencing Method

<b>Date First Licensed:</b>	1990	Kits for efficient sequence analysis of large DNA fragments.
<b>Type of License:</b>	NE	
<b>Status of Patent Protection:</b>	P	

<b># of Companies Licensed:</b>	5
<b># of Licenses to Small Companies:</b>	3
<b># of Licenses to Large Companies:</b>	2

3. Leu M9

Monoclonal Antibody

<b>Date First Licensed:</b>	1987	(1) Purified reagent; (2) Leukemia Immunophenotyping Kit.
<b>Type of License:</b>	E (by field)	
<b>Status of Patent Protection:</b>	UP	

**Licensed to Large/Small Company:** Large

## (By State and Institution)

**3. Iontophoresis device**

For drug delivery

**Date First Licensed:** 1976/1993 Drug delivery.  
**Type of License:** E  
**Status of Patent Protection:** P

**Licensed to Large/Small Company:** Small

**Was a Startup Company Formed  
as a Result of this Product?** YES

**4. DNA Identification Probes**

No Description Given.

**Date First Licensed:** 1991 Forensic science and paternity.  
**Type of License:** E  
**Status of Patent Protection:** P

**Licensed to Large/Small Company:** Small

**Was a Startup Company Formed  
as a Result of this Product?** YES

**5. Air Sparged Hydrocyclore**

Flotation Device

**Date First Licensed:** 1987 Deinking recycled paper, minerals flotation,  
**Type of License:** E (by field) environmental application.  
**Status of Patent Protection:** P

**# of Companies Licensed:** 5

**# of Licenses to Small Companies:** 4

**# of Licenses to Large Companies:** 1

**Was a Startup Company Formed  
as a Result of this Product?** YES

(By State and Institution)

Licensed to Large/Small Company: Small

**UTAH****Brigham Young University****1. DSEARCH**

Software

Date First Licensed: 1985

Type of License: NE

Status of Patent Protection: P

Search and retrieval for document text management.

# of Companies Licensed: 5

# of Licenses to Small Companies: 5

# of Licenses to Large Companies: 0

Was a Startup Company Formed  
as a Result of this Product? YES**2. 2-CDA**

2'-Chlorodeoxyadenosine

Date First Licensed: 1991

Type of License: E

Status of Patent Protection: P

Chemotherapy treatment of hairy-cell leukemia.  
Net sales of approx. \$4 Million realized in the first  
five months after FDA approval. Company projects  
sales of \$20 million.

Licensed to Large/Small Company: Large

**3. M-9 Vaccine**

Turkey Cholera Vaccine

Date First Licensed: 1984

Type of License: NE

Status of Patent Protection: UP

Vaccine - Decreased turkey mortality rate from  
35-40% to 5-10%.

# of Companies Licensed: 8

# of Licenses to Small Companies: 3

# of Licenses to Large Companies: 5

Was a Startup Company Formed  
as a Result of this Product? YES



(By State and Institution)

Licensed to Large/Small Company: Small

**2. Abbacus**

Instrument

Date First Licensed: 1987

Type of License: E

Status of Patent Protection: P

Process/device to manufacture synthetic oligonucleotide.

Device not sold, but service company uses patented technology.

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
as a Result of this Product? YES**3. "PLIO"**

Physical Therapy/Rehab. Device

Date First Licensed: 1992

Type of License: E

Status of Patent Protection: P

Device is a lower extremity orthotic device designed to provide early weight bearing to quadriplegic and some spinal cord injured patients.

Licensed to Large/Small Company: Small

**4. No Trade Name Given.**

Hearing diagnostic device

Date First Licensed: 1991

Type of License: E

Status of Patent Protection: PP

Distortion product audiometer used to detect hearing deficiencies.

Licensed to Large/Small Company: Small

**5. "BRAT Bowl"**

Blood Collection Bowl

Date First Licensed: 1988

Type of License: E

Status of Patent Protection: UP

Blood centrifugation bowl used in blood processing device in surgery.

Licensed to Large/Small Company: Small

## (By State and Institution)

Licensed to Large/Small Company: Large

4. No Trade Name Given.

Plasmid that protects bacterial cultures in the dairy industry.

Date First Licensed: 1987

Type of License: E

Status of Patent Protection: P

A plasmid which offers phage resistance to bacterial cultures used to make fermented dairy products, e.g., cheese.

Licensed to Large/Small Company: Large

5. No Trade Name Given.

Advanced electronic semiconductors.

Date First Licensed: 1987

Type of License: E

Status of Patent Protection: P

Technology for the manufacture of semiconductors for advanced electronics.

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
as a Result of this Product? YES

## OHIO

Ohio University1. Microinjection

Method to make transgenic animals

Date First Licensed: 1989

Type of License: E

Status of Patent Protection: P

This is the platform technology used to create transgenic animals. The animals receive an exogenous gene and express that gene. The process is used to make pharm. proteins, xenografts, and many other research models and products beneficial to society.

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
as a Result of this Product? YES

## (By State and Institution)

# of Companies Licensed: 3  
 # of Licenses to Small Companies: 0  
 # of Licenses to Large Companies: 3

**4. Colony Stimulating Factors (CSF)**

**Date First Licensed:** 1991  
**Type of License:** NE  
**Status of Patent Protection:** P

Process is for insertion of genes into mammalian cells.

# of Companies Licensed: 1  
 # of Licenses to Small Companies: 0  
 # of Licenses to Large Companies: 1

**5. Factor VIII**

Drug for Hemophilia

**Date First Licensed:** 1992  
**Type of License:** NE  
**Status of Patent Protection:** P

Process is for insertion of genes into mammalian cells.

# of Companies Licensed: 1  
 # of Licenses to Small Companies: 1  
 # of Licenses to Large Companies: 0

**New York Blood Center****1. Solvent/detergent (SID) Treatment**

A virus inactivation method for blood products.

**Date First Licensed:** 1985  
**Type of License:** NE  
**Status of Patent Protection:** P

This method is used to kill the AIDS and hepatitis virus in about 2/3 of all the blood plasma-derived products sold in the world today.

# of Companies Licensed: 51  
 # of Licenses to Small Companies: 36  
 # of Licenses to Large Companies: 15

**2. Hepaccine-B**

Plasma-derived Hepatitis B Vaccine

**Date First Licensed:** 1986  
**Type of License:** E  
**Status of Patent Protection:** P

This is a hepatitis B vaccine which is very inexpensive to produce and highly immunogenic. It has been supplied by its manufacturer to a number of WHO and national vaccination programs, mostly in Asia.

(By State and Institution)

**NEW JERSEY****Rutgers, The State University of NJ****1. Constellation Dogwood Variety**

Hybrid Dogwood Trees

**Date First Licensed:** 1991  
**Type of License:** NE  
**Status of Patent Protection:** P

**# of Companies Licensed:** 7  
**# of Licenses to Small Companies:** 7  
**# of Licenses to Large Companies:** 0

**2. Jersey Giant Asparagus**

No Description Given.

**Date First Licensed:** 1984  
**Type of License:** E  
**Status of Patent Protection:** P

**Licensed to Large/Small Company:** Small

**3. Suncrisp Dessert Apple**

Quality Dessert Apple

**Date First Licensed:** 1991  
**Type of License:** NE  
**Status of Patent Protection:** PP

**# of Companies Licensed:** 3  
**# of Licenses to Small Companies:** 3  
**# of Licenses to Large Companies:** 0

**4. Short Path Thermal Desorption**

Gas Chromatographic Thermal Device

**Date First Licensed:** 1990  
**Type of License:** E  
**Status of Patent Protection:** P

**Licensed to Large/Small Company:** Small

## (By State and Institution)

3. Rieke Metals

Highly reactive metal powders

Date First Licensed: 1992  
 Type of License: E  
 Status of Patent Protection: P

Finely divided metals and intermediates derived therefrom for use in the manufacture of chemicals, polymers, pharmaceuticals. Permit the manufacture of materials not readily made in other ways.

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
 as a Result of this Product? YES

4. Peptide synthesis

Economical synthesis of peptides.

Date First Licensed: 1986  
 Type of License: E  
 Status of Patent Protection: P

Using recombinant DNA technique, peptides have been made for: (1) analysis of mercury in water, lead in soil; (2) production of pharmaceuticals; (3) treatment of post-menopausal osteoporosis.

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
 as a Result of this Product? YES

5. DNA Sequencer

DNA Sequencer

Date First Licensed: 1984  
 Type of License: E  
 Status of Patent Protection: P

A DNA sequencer of lower cost and excellent performance for use in diagnostics, medical research.

Licensed to Large/Small Company: Small

## NEW HAMPSHIRE

Dartmouth College1. Aqua-Terr

Soil Moisture Sensor

Date First Licensed: 1992  
 Type of License: E (by field)  
 Status of Patent Protection: P

Very accurate measurement of moisture in the heterogeneous media. Products can be used for irrigation, can help save water and fertilizers, can be used in waste management, textile, food, paper, and many other industries.

(By State and Institution)

5. Therasphere<sup>R</sup>

Radiopharmaceutical

Date First Licensed:	1984	Radioactive glass microspheres for prevention of metastasized liver cancer.
Type of License:	E	
Status of Patent Protection:	P	
Licensed to Large/Small Company:	Small	

Washington University1. CK-MB

Monoclonal Antibody

Date First Licensed:	1988	Rapid Diagnostic Test for the Detection of Heart Attacks.
Type of License:	NE	
Status of Patent Protection:	P	
# of Companies Licensed:	8	
# of Licenses to Small Companies:	1	
# of Licenses to Large Companies:	7	

2. Confocal Microscope

Confocal Microscope

Date First Licensed:	1989	Single aperture confocal scanning EPI-illumination microscope for imaging biological materials.
Type of License:	NE	
Status of Patent Protection:	P	
# of Companies Licensed:	1	
# of Licenses to Small Companies:	0	
# of Licenses to Large Companies:	1	

3. No Trade Name Given.

Software for Ultrasound

Date First Licensed:	1986	Improved software for ultrasound imaging in cardiology.
Type of License:	E	
Status of Patent Protection:	UP	
Licensed to Large/Small Company:	Large	

(By State and Institution)

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
as a Result of this Product? YES**2. Dog Lyme Disease Vaccine**

Lyme Disease Vaccine

Date First Licensed: 1988  
Type of License: E  
Status of Patent Protection: PVeterinary vaccine against lyme disease which uses  
attenuated virus.

Licensed to Large/Small Company: Small

**3. THAIRapy Bronchial Drainage System**Pneumatic Device for Physical Chest Compression  
Therapy.Date First Licensed: 1988  
Type of License: E  
Status of Patent Protection: PPneumatic Device for Physical Chest Compression  
Therapy - Treatment of cystic fibrosis - aids patients in  
elimination of mucous from lungs.

Licensed to Large/Small Company: Small

**4. MRC-600 Confocal Laser Scanning System**

Confocal Laser Microscope

Date First Licensed: 1990  
Type of License: E  
Status of Patent Protection: PArgon-krypton laser attachment for a confocal  
microscope that enables simultaneous viewing of  
tissue sections that are labeled with two different  
fluorescent tags.

Licensed to Large/Small Company: Small

**5. HemoQuant**

No Description Given.

Date First Licensed: 1984  
Type of License: NE  
Status of Patent Protection: PLaboratory Method to Detect Blood in Feces as an  
Early Screen for Colon Cancer.# of Companies Licensed: 4  
# of Licenses to Small Companies: 3  
# of Licenses to Large Companies: 1

## (By State and Institution)

Status of Patent Protection: UP

Licensed to Large/Small Company: Small

3. **Ross Labs - Alitraq**

Alitraq Nutritional Solution

Date First Licensed: 1987 Nutritional supplement for enteral feedings.

Type of License: E

Status of Patent Protection: P

Licensed to Large/Small Company: Large

4. **Bard Alfenta Pump**

Alfenta Pump

Date First Licensed: 1987 Intravenous Narcotics Pump.

Type of License: E

Status of Patent Protection: P

Licensed to Large/Small Company: Large

5. **IVAC**

Infiltration Detective Device

Date First Licensed: 1986 Public Benefits Not Described.

Type of License: E

Status of Patent Protection: P

Licensed to Large/Small Company: Large

## MICHIGAN

### University of Michigan

1. **Cystic Fibrosis Gene**

No Description Given.

Date First Licensed: N. Applic. Identification of gene responsible for Cystic Fibrosis

Type of License: N. Applic. leading to gene therapy and treatment applications.

Status of Patent Protection: PP (Not on the market yet).



(By State and Institution)

**4. Noise Cancellation**

Improved noise cancellation system

**Date First Licensed:** 1990**Type of License:** E**Status of Patent Protection:** P

The improved system removes background noise from many environments (e.g., office space, electronic, automobile mufflers) by providing real time feedback of antinoise wavelengths.

**Licensed to Large/Small Company:** Small**5. Improved U.V. Cure Lamp**

Improves photochemical airing system for printing.

**Date First Licensed:** 1992**Type of License:** E**Status of Patent Protection:** PP

This process improves an existing product that cures ink on such items as soft drink cans. It made a dramatic improvement in the quality of the equipment used.

**Licensed to Large/Small Company:** Small**MASSACHUSETTS****Harvard University****1. Sequenase**

Research product used in sequencing (DNA)

**Date First Licensed:** 1986**Type of License:** E**Status of Patent Protection:** P

Kits and reagents used to determine the genetic sequence of DNA.

**Licensed to Large/Small Company:** Small**2. Cardiolite**

Radio diagnostic--heart imaging

**Date First Licensed:** 1983**Type of License:** E**Status of Patent Protection:** P

Material and process to create a radio-diagnostic compound used to create heart images to diagnose forms of heart disease.

**Licensed to Large/Small Company:** Small

(By State and Institution)

**MARYLAND****Johns Hopkins University/APL****1. OPTIMATR**

Software

<b>Date First Licensed:</b>	1992	Software that calculates the optical properties of materials.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	UP	
<b>Licensed to Large/Small Company:</b>	Small	

**2. SC32 Microprocessor**

Microprocessor Chip

<b>Date First Licensed:</b>	1988	FORTH Microprocessor chip.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	UP	
<b>Licensed to Large/Small Company:</b>	Small	

**3. The Zapp Board**

Parallel Processor

<b>Date First Licensed:</b>	1992	Parallel processing board for personal computer.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	
<b>Licensed to Large/Small Company:</b>	Small	

**4. CorTemp**

Ingestible temperature capsule.

<b>Date First Licensed:</b>	1988	Ingestible thermometer monitors, records, and reports body temperature.
<b>Type of License:</b>	E	
<b>Status of Patent Protection:</b>	P	
<b>Licensed to Large/Small Company:</b>	Small	

<b>Was a Startup Company Formed as a Result of this Product?</b>	YES
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(By State and Institution)

**3. Spectroscopy Technology**

Spectroscopy Improvement

Date First Licensed: 1986  
 Type of License: E  
 Status of Patent Protection: UP

Job formation, local "support" business development and alliances.

Licensed to Large/Small Company: Small

Was a Startup Company Formed as a Result of this Product? YES

**4. Min Wu - Hieftje Spray Chamber**

Spray Chamber for Inductively Coupled Plasma Spectrometers.

Date First Licensed: 1993  
 Type of License: E  
 Status of Patent Protection: PP

Improved analytical performance over existing chamber types. Particularly useful where reduced memory effects are important. 2-3 times shorter sample clean out time. Lower cost and simpler construction than commonly used spray chambers.

Licensed to Large/Small Company: Large

**5. Cell Selection and Modulation**

No Description Given.

Date First Licensed: 1993  
 Type of License: E  
 Status of Patent Protection: P

Technology offers new technique for isolation, identification, and culturing cells removed from human patients with cell abnormalities or deleterious disease conditions. Especially useful for gene therapy.

Licensed to Large/Small Company: Small

**LOUISIANA****Tulane University****1. Decapeptyl**

LHRH Super Agonist

Date First Licensed: 1983  
 Type of License: E  
 Status of Patent Protection: P

LHRH super agonist for treatment of prostate cancer. Also approved for other hormonal dependent conditions such as uterine fibroids and endometriosis. (LHRH: Luteinizing Hormone Releasing Hormone).

## (By State and Institution)

- Status of Patent Protection: UP and factual data on natural products including information on the pharmacology, biological activity, etc.
- Licensed to Large/Small Company: Large
3. **Laser-Slit**  
Eye examination device
- Date First Licensed: 1991 Instrument which optimizes inner eye/retinal examinations.  
Type of License: E  
Status of Patent Protection: P
- Licensed to Large/Small Company: Small
4. **Applebaum Inducostapedial Joint/Prosthesis**  
Middle ear prosthesis
- Date First Licensed: 1992 Ear-bone joint prosthesis.  
Type of License: E  
Status of Patent Protection: PP
- Licensed to Large/Small Company: Large
5. **Antibodies 2C4 9AE10, RDR34**  
Monoclonal Antibodies
- Date First Licensed: 1992 Monoclonal antibodies to rabbit MHC Class II (Ia) molecules and T-cells.  
Type of License: NE  
Status of Patent Protection: UP
- # of Companies Licensed: 2  
# of Licenses to Small Companies: 2  
# of Licenses to Large Companies: 0

## INDIANA

**Ball State University**1. **CITE Materials**

Technology Education Activities

Date First Licensed: 1986 Curriculum ancillary materials of practical application  
Type of License: NE for technology education classroom instruction.  
Status of Patent Protection: C

(By State and Institution)

Status of Patent Protection: UP  
 # of Companies Licensed: 1  
 # of Licenses to Small Companies: 1  
 # of Licenses to Large Companies: 0

**ILLINOIS****Name Confidential****1. B. Megaterium**

Plasmidless strain cloning host

Date First Licensed: 1988 Diagnostic test for HIV-1/HIV-2.  
 Type of License: E  
 Status of Patent Protection: P  
 Licensed to Large/Small Company: Large

**Name Confidential****1. Order-disorder patent**

Chemical treatment of semiconductor devices.

Date First Licensed: 1989 New technology; more cost effective method of  
 Type of License: NE manufacturing.  
 Status of Patent Protection: P  
 # of Companies Licensed: 3  
 # of Licenses to Small Companies: 1  
 # of Licenses to Large Companies: 2

**2. Multiple exposure velocimeter**

Special measuring instrument

Date First Licensed: 1986 New technology.  
 Type of License: E  
 Status of Patent Protection: P  
 Licensed to Large/Small Company: Small

## (By State and Institution)

**2. CAV-DR-1**

Use of a variant strain of Bursal Disease.

**Date First Licensed:** 1986  
**Type of License:** NE  
**Status of Patent Protection:** UP

Useful in the production of vaccines important to the poultry industry.

**# of Companies Licensed:** 6  
**# of Licenses to Small Companies:** 1  
**# of Licenses to Large Companies:** 5

**3. Speech Synthesizer**

Computer Software

**Date First Licensed:** 1992  
**Type of License:** E  
**Status of Patent Protection:** UP

A synthetic voice developed to assist individuals with progressive diseases of the nervous system such as amyotropic lateral sclerosis.

**Licensed to Large/Small Company:** Small**4. Chromatography**

Process technology

**Date First Licensed:** 1992  
**Type of License:** E  
**Status of Patent Protection:** PP

An inexpensive process for protecting silica and strengthening it from attack; useful for a wide variety of silica-based products, such as optical fibers.

**Licensed to Large/Small Company:** Large**5. Monoclonal Antibodies Kit**

Monoclonal Antibodies

**Date First Licensed:** 1989  
**Type of License:** E  
**Status of Patent Protection:** UP

Pertaining to hybridomas for the production of monoclonal antibodies to determine the presence and/or concentration of certain lipoproteins in blood plasma.

**Licensed to Large/Small Company:** Small

(By State and Institution)

Was a Startup Company Formed  
as a Result of this Product? YES

3. **"Gene Machine"**

Synthesis of DNA

Date First Licensed: 1981  
Type of License: NE  
Status of Patent Protection: P

Synthesis of DNA, which is used to produce reagents  
and other biological materials.

# of Companies Licensed: 2  
# of Licenses to Small Companies: 0  
# of Licenses to Large Companies: 2

4. **Endoscopic Ligating Device**

No Description Given.

Date First Licensed: 1990  
Type of License: E  
Status of Patent Protection: P

Device affixes to standard flexible gastroscope and  
effects accurate ligation of mucosal and submucosal  
targets.

Licensed to Large/Small Company: Large

## CONNECTICUT

### University of Connecticut

1. **Orthodontic Wire**

No Description Given.

Date First Licensed: 1982  
Type of License: E  
Status of Patent Protection: P

Wires and related products made from titanium are  
sold to orthodontists.

Licensed to Large/Small Company: Large

2. **Lab-In-A-Bag**

Field Kit for Environmental Testing.

Date First Licensed: 1990  
Type of License: E  
Status of Patent Protection: P

Kits to facilitate evaluation of sites contaminated with  
organic materials. A typical example is a site  
surrounding a leaking underground gasoline storage  
tank.

Licensed to Large/Small Company: Small

## (By State and Institution)

Type of License: NE  
 Status of Patent Protection: PP

# of Companies Licensed: 2  
 # of Licenses to Small Companies: 2  
 # of Licenses to Large Companies: 0

2. BLA-36 Anti-Gen (2225)

Hybridoma Clones

Date First Licensed: 1992                      Histopathology.  
 Type of License: NE  
 Status of Patent Protection: PP

# of Companies Licensed: 4  
 # of Licenses to Small Companies: 4  
 # of Licenses to Large Companies: 0

3. Anti-Gen 57-15 (2293)

Hybridoma Clones

Date First Licensed: 1992                      Histopathology.  
 Type of License: NE  
 Status of Patent Protection: PP

# of Companies Licensed: 2  
 # of Licenses to Small Companies: 2  
 # of Licenses to Large Companies: 0

## COLORADO

National Jewish Center1. Azaquinone (formerly Gangamicin)

Synthetic Tuberculosis Antibiotic

Date First Licensed: 1991                      Assists in treatment of drug-resistant TB, and used  
 Type of License: E                                      to treat systemic infection in AIDS patients, especially  
 Status of Patent Protection: P                              microbacterium avium intracellulare.

Licensed to Large/Small Company: Large



(By State and Institution)

Was a Startup Company Formed  
as a Result of this Product? YES

3. **Optically Pumped Laser**  
Optically Pumped Laser

Date First Licensed: 1987 Optically Pumped Laser.  
Type of License: E  
Status of Patent Protection: P

Licensed to Large/Small Company: Small

Was a Startup Company Formed  
as a Result of this Product? YES

4. **GPS Receiver**  
GPS Receiver

Date First Licensed: 1992 Global Positioning Satellite Receiver.  
Type of License: E  
Status of Patent Protection: P

Licensed to Large/Small Company: Small

5. **GEL Electrophoresis**  
GEL Electrophoresis Apparatus

Date First Licensed: 1992 GEL Electrophoresis Apparatus.  
Type of License: E  
Status of Patent Protection: P

Licensed to Large/Small Company: Large

**Stanford University**

1. **Phycobiliproteins**  
Fluorescent Tag from Algae

Date First Licensed: 1982 Research and Diagnostic Reagents.  
Type of License: NE  
Status of Patent Protection: P

# of Companies Licensed: 49  
# of Licenses to Small Companies: 27  
# of Licenses to Large Companies: 22

## (By State and Institution)

- Status of Patent Protection: PP Concomitant use in cancer chemotherapy.  
(Source of Invention: Ludiig Cancer Institutes.)
- Licensed to Large/Small Company: Large
5. Helixx<sup>TM</sup>  
Helical Lesion Marker
- Date First Licensed: 1991 Breast Tumor Localization Needle.  
Type of License: E (Source of Invention: Tulane University).  
Status of Patent Protection: P
- Licensed to Large/Small Company: Small

University of Arizona

1. Meriflour Cryptosporidium/Giardia  
Monoclonal Antibody Diagnostic Kit
- Date First Licensed: 1987 This technology detects the presence of Cryptosporidium  
Type of License: E parvum and Giardia Lamblia. C. parvum may be life  
Status of Patent Protection: UP threatening, especially to children and AIDS patients.
- Licensed to Large/Small Company: Small
2. Group System V  
Decision Making, Planning Software
- Date First Licensed: 1989 The software has created new meeting environments  
Type of License: E conducive to high levels of group performance. Using  
Status of Patent Protection: UP networked personal computers and software products,  
people can have meetings more efficiently and produce  
higher quality results.
- Licensed to Large/Small Company: Small
- Was a Startup Company Formed  
as a Result of this Product? YES
3. Rotofor<sup>TM</sup> Cell  
Protein Purification Apparatus
- Date First Licensed: 1985 This apparatus is used to isolate proteins, such as DNA  
Type of License: E and hormones, for use as diagnostics to improve the  
Status of Patent Protection: P public health.
- Licensed to Large/Small Company: Large

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<b>MINNESOTA</b> .....	<b>29</b>
Mayo Foundation	
University of Minnesota	
<b>MISSOURI</b> .....	<b>31</b>
University of Missouri System	
Washington University	
<b>NEBRASKA</b> .....	<b>33</b>
University of Nebraska-Lincoln	
<b>NEW HAMPSHIRE</b> .....	<b>34</b>
Dartmouth College	
<b>NEW JERSEY</b> .....	<b>36</b>
Rutgers, The State University of NJ	
<b>NEW YORK</b> .....	<b>37</b>
Columbia University	
New York Blood Center	
<b>NORTH CAROLINA</b> .....	<b>39</b>
Name Confidential	
<b>OHIO</b> .....	<b>40</b>
Ohio University	
<b>TENNESSEE</b> .....	<b>41</b>
St. Jude Children's Research Hospital	
<b>TEXAS</b> .....	<b>41</b>
Baylor College of Medicine	
University of Texas Southwestern	
<b>UTAH</b> .....	<b>44</b>
Brigham Young University	
University of Utah	
<b>VIRGINIA</b> .....	<b>47</b>
University of Virginia Patents Foundation	
<b>WASHINGTON</b> .....	<b>48</b>
Fred Hutchinson Cancer Research Center	
<b>CANADA</b> .....	<b>50</b>
Name Confidential	
Queen's University	

Table 2**AUTM PUBLIC BENEFITS SURVEY****STARTUPS FORMED SINCE 1980**

<u>NAME OF INSTITUTION</u>	<u>NUMBER OF STARTUPS</u>
University of Minnesota	43
University of Arizona	40
University of Utah	29
Washington University	22
University of Michigan	21
Stanford University	19
Name Confidential	19
Baylor College of Medicine	15
Queen's University	13
Harvard University	12
Brigham Young University	11
Univ. of Illinois @ Chicago	11
University of Colorado	8
Columbia University	7
Name Confidential	7
Univ. of Texas Southwestern	7
Indiana University	6
Thomas Jefferson University	6
Name Confidential	6
Name Confidential	5
University of Miami	5
Univ. of Virginia Patents Fndtn.	5
Dartmouth College	4
Mayo Foundation	4
Name Confidential	4
Ohio University	4
Rutgers, The State University of NJ	4
University of Connecticut	4
Princeton University	3
Univ. of Maryland, College Park	3
Tulane University	2
Univ. of Missouri System	2
Univ. of Southern California	2
National Jewish Center	1
New York Blood Center	1
University of Arkansas	1
University of Delaware	1
Name Confidential	0
Name Confidential	0
	<u>0</u>
	<b>357</b>

Specifically:

- The forty-five (45) participating institutions reported 177 products on the market, which have been licensed exclusively (70%) and nonexclusively (30%) to 440 small and large businesses.
- Sixty-five percent (65%) of the exclusive licenses and 58% of the nonexclusive licenses were negotiated with small business, with the remaining 35%-42% going to large business. (See summary provided in *Table 1*.)
- Thirty-nine (39) respondents reported the formation of 357 startups (since 1980) that were dependent upon the licensing of their institutions' technologies. (See summary provided in *Table 2*.)
- Of the 177 products reported under this survey, 35 new companies were created in support of these discoveries or inventions. (See *Selected Products on the Market*.)

A comprehensive list of the selected products on the market and the public benefits derived from these products is included in this report. The following abbreviated references were used when developing this compilation:

E	-	Exclusive
NE	-	Nonexclusive
P	-	Patented
PP	-	Patent Pending
UP	-	Unpatented
C	-	Copyrighted

### Future Studies

The Association of University Technology Managers continues to monitor the activities of technology transfer programs through the administration of surveys to its members. Currently under way are a study on economic impact and the second annual AUTM Licensing Survey, the results of which will be made available this Fall 1994.

1. *Two reports have been developed that summarize the results of the AUTM Licensing Survey and are available for purchase. These reports include the "AUTM Licensing Survey Executive Summary and Selected Data" report and "The AUTM Licensing Survey Fiscal Years 1991 and 1992" full report. To order either report, contact Ms. Penny Dalziel, AUTM, (203) 852-7168.*
2. *The year of the passage of the Bayh-Dole Act.*
3. *A small business was defined as a company that has less than 500 employees and net sales less than \$100 million. A large business was defined as a company that has 500 or more employees or net sales of \$100 million or more.*
4. *The survey contained a provision for confidentiality. If a survey response was provided on a confidential basis, the institution's name has been noted as "Name Confidential."*



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