Washington Technology Center

2000–2001 ANNUAL REPORT

Building Technology Partnerships Statewide

Created in 1983 by the state's legislature, the Washington Technology Center's purpose is to positively affect the creation and retention of jobs in Washington-based companies

...by increasing the effectiveness and ability of those companies to adopt and deploy technology

...that leverages the investment made in research at the state's universities.

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At Washington Technology Center our role is to foster collaborative efforts among Washington companies and the state's institutions of higher education leading to economic growth. I am happy to once again report that we continued to enhance those relationships in a variety of ways, fulfilling our promises from the WTC 2000–2003 strategic plan.

Report highlights:

- Our 4th annual MEMS conference attracted 110 people, confirming the impact of our Initiative effort in promoting this groundbreaking technology here in Washington;
- We also launched a new Photonics Systems Initiative with 7 initial projects;
- Our research projects portfolio made a major shift into biotechnology—an increase of 10 percent, replacing microelectronics as our number one funded technical category;
- We installed a new Deep Reactive Ion Etching machine in our Microfabrication Laboratory—a $500,000 piece of equipment available for industry or university use, and jointly sponsored by a number of private companies and university departments and offices;
- Our second regional office was opened in Vancouver in partnership with the Columbia River Economic Development Council—increasing our regional satellite offices to two along with the Tri-Cities office through Energy Northwest;
- Our efforts at controlling costs paid off with a decrease in administrative and outreach expenses from over 34 percent of our budget to 29 percent of our budget during this last year, and;
- We applied for our first federal award in order to bring more services to industry through WTC and to diversify our funding base.

WTC also continued to document the impact of technology and innovation on Washington's economy with the publication of our second *Index of Innovation and Technology*. This groundbreaking report once again became the standard for examining Washington's progress during the last year.

As we move forward, there is an exciting future for us to grow into. We will continue our support of the MEMS industry through ongoing growth and improvements in our Microfabrication Laboratory, while expanding our support to the optics industry through an annual conference and funded partnership projects. Based on the success of our *Index of Innovation and Technology* report, we will be developing new methods for examining the future growth of Washington's technology base as information for policymakers.

This report documents our successes and progress over the last year—examining our approach to supporting unique partnerships among the state's industrial and academic community. Washington is a great place to start and expand a technology-based business—this report shows how WTC can help!

Lee Cheatham
WTC Executive Director

Industry & University Partnerships

WTC facilitates working relationships among Washington companies, individual university researchers and laboratories in a variety of ways. Our Marketing Managers help companies get the right answers quickly by instantly locating critical expertise inside Washington's universities. Using an open peer review process for selection, WTC financially underwrites individual collaboration efforts between companies and university researchers—projects that lead to relevant advances in product improvements.

In addition to projects with companies, WTC sponsors an annual student intern program, which matches students with WTC company partners. The interns bring their marketing, management and financial skills, and have an opportunity to work with companies on the leading edge of product development. WTC shares the cost of the interns with the companies. This year, interns were placed with Söliv in Seattle, Microvision in Bothell and MCD Technologies in Tacoma.

WTC manages the Microfabrication Laboratory—a unique regional resource for research, testing and development, specializing in surface design capabilities. The Microfab Lab is available to both academic and industry users.

WTC also is responsible for selecting the researchers, centers and laboratories that are located in Fluke Hall and who have very close links to industry through partnerships, funded research activities and specialized equipment.

As a result of WTC's efforts in 2001, we estimate a state impact of $44.73 million dollars. This impact is realized through additional research activity and outside investment in WTC partner companies, leveraging WTC's investment in time, expertise and funding on a 12-to-1 basis. This impact was spread across Washington State, as over 38 percent of the companies benefiting from these critical partnerships and relationships were outside the Puget Sound region.

Collaborative Research Activities

WTC's largest single program activity is funding specific collaborative efforts between companies and university researchers. A total of 66 projects were active during the year, new awards accounting for 37 of those projects.

During this past year, WTC initiated 8 Advanced Materials and Manufacturing projects. They encompass high frequency medical imaging, laser wafer production, exhaust gas filtration, hazardous waste conversion, and fuel cell technology. We present a summary of another project: testing properties of polysilicon rods that will enhance production of silicon crystals.

WTC funded 15 projects in the Biotechnology and Biomedical Devices area—a diverse group that includes the development of pest control devices, artificial bone structure models, augmented milk testing and pasteurization processes, ion exchange resin pellets that measure plant nutrients, piezo-electric ceramic transducers for drug delivery, microfluidics devices for chemical analyses, diagnostic genetic tools for lymphoma, and research on antioxidants and cattle sterilization vaccines. A representative project is described: development of a biocompatible/biodegradable medical ultrasound gel.

Three projects were awarded funding in Computer Systems, including voice recognition devices for aviation instrument control and improving quality of streaming video transmission. We highlight a project that is researching Wireless Local Loop, a technology that uses fixed or mobile radio transceivers to provide telephone services.

Four Microelectronics projects were initiated by WTC for this reporting period, comprising such topics as wireless network monitoring devices, fiber-optic telecommunications routing switches, and modeling the effects of integrated circuits on high-speed digital signals. We feature a project that is developing an ultra-miniature mass spectrometer.

The following are examples of new projects underway during the past year:

ADVANCED SILICON MATERIALS LLC, MOSES LAKE

Advanced Silicon Materials LLC (ASiMI) of Moses Lake is a worldwide leading producer of quality, non-commodity polycrystalline silicon, the feed material used by silicon wafer manufacturers in the silicon crystal growing industry. Silicon wafers are used in manufacturing computer chips and integrated circuits. The chunk material currently in use by crystal growers limits the size of crystals. ASiMI is working on refining a process to produce large diameter charge replenishment (CR) rods, which allows the crystal growers to make larger wafers, thus improving their yields while reducing costs.

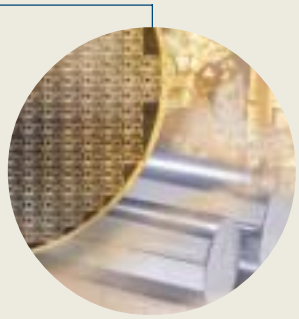


Image courtesy of ASiMI

Performance of semiconductor devices is largely dependent on the quality of silicon substrates, which must be guaranteed not to fail during handling. Polycrystalline silicon is a very brittle material and the ability to properly machine and handle the material at elevated temperatures is essential to producing quality CR rods.

Working with WSU Mechanical and Materials Engineering professor David Bahr, ASiMI is developing tests for monitoring the fracture toughness of machined polysilicon rods, so that breakage during handling can be eliminated. Specifically, Dr. Bahr will be looking at aspects of temperature and annealing during processing, as well as testing approaches for measuring localized residual stresses, correlations to conventional testing, and non-destructive testing methods.

Armed with this information, ASiMI will be able to fine-tune their manufacturing process to increase yield and ultimately provide customers with a better product.

INTELLIGENT ION, INC., SEATTLE

Image courtesy of Intelligent Ion

Intelligent Ion, Inc. was founded in January 2000 to exploit technological breakthroughs in the field of mass spectrometry. Mass spectrometers are the "gold standard" in chemical analysis instrumentation but have been limited in their application by large size, complex operation and high cost. Intelligent Ion's technologies (acquired from the University of Washington and Caltech's Jet Propulsion Laboratory) miniaturize mass spectrometers and greatly improve their performance, ease of use, accessibility, and affordability. The company will make these powerful analytic tools available to a much broader user base, with applications in medical devices, biotechnology and the process industries.

Intelligent Ion's miniaturized mass spectrometers provide immediate diagnostic and analytical results, operational efficiencies in pharmaceutical, chemical, petrochemical and other industry process plants, and real-time monitoring and archiving of plant environmental conditions.

The company's highly sensitive ion detector system (micro-machined directly onto a silicon chip) was developed at WTC's Microfabrication Lab. WTC is playing an even more critical role in the development of Intelligent Ion's next generation, ultra-miniaturized products through research funding that supports the collaboration of Dr. Bruce Darling, other UW researchers and Intelligent Ion scientists. Intelligent Ion will develop the remainder of the mass spectrometer while Dr. Darling is developing the ion sources. This applied research will lead to ultra-fast, low-cost mass spectrometer systems the size of a coffee cup—opening exciting new applications (e.g., measuring in-flight fuel tank vapor composition and determining cabin, office and home air quality).

OCUMED, INC., VANCOUVER

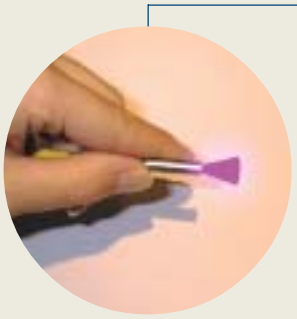


Image courtesy of Ocumed

The lack of low-cost micro-optical scanners is a barrier that needs to be overcome for many applications, such as laser scanning endoscopy. Flexible endoscopes look inside of a body cavity or organ and are used in minimally invasive imaging diagnoses and treatments. Commercial flexible endoscopes have flexible shafts that use a fiberoptic bundle and/or video camera chip to acquire images. Maintaining adequate image quality has limited the size of a flexible endoscope to approximately 4mm in diameter because pixel number is constrained by this imaging approach.

A new imaging technology has been invented at the University of Washington that will support the development of a low-cost miniature optical scanner. Eric Seibel of the UW Human Interface Technology Lab and Department of Mechanical Engineering has been researching micro-optical fabrication of fiber scan systems for scanned illumination and image capture, approaching endoscopy from a completely new direction—by using a scanned single optical fiber to acquire an image one pixel at a time.

OcuMed, incorporated in 1999, is a medical technology company that develops and commercializes advanced endoscopic, scanned illumination, and multi-spectral medical applications. The company has teamed with Dr. Seibel to produce a hand-held proof-of-concept prototype of a scanning fiberoptic micro-image system. Dr. Seibel and his researchers provided expertise in the areas of mathematical modeling of scanner dynamics, application of nonlinear control theory, optical design, image acquisition design and testing, and prototype fabrication and testing. This new technology will allow the endoscope size barrier to be broken without sacrificing image quality.

SONOTECH, INC., BELLINGHAM

Diagnostic medical ultrasound, initially performed externally on skin, is now used also in surgery to guide invasive procedures. In order for ultrasound technology to work, materials such as gel or films are needed to transmit, or couple, the sound waves. The ultrasound coupling substances currently employed in new invasive applications have not changed significantly in 30 years. These products, although sterile, are not compatible with living tissue nor are they biodegradable when used internally, thus potentially posing a risk to patients.

Founded in 1987, Sonotech is a research, development and manufacturing company focusing on applications in medical ultrasound and industrial ultrasonic non-destructive testing, patient/user safety and product development. The company's primary products are industrial ultrasound couplants and medical ultrasound scanning gels.

In order to eliminate the hazards posed by the use of bio-incompatible gels, Sonotech intends to develop and market patient-safe medical acoustic couplants for imaging inside the body and during surgery. The company, in conjunction with Buddy Ratner of the UW Engineering Biomaterials Engineering Research Center, is investigating new biocompatible and biodegradable ultrasound films and gels for internal procedures.

Photo courtesy of Sonotech

SUPERTEL TECHNOLOGIES, INC., REDMOND

According to United Nations data, over half of the world's population has never made a telephone call. Even in areas of the U.S., telephone or cellular services are still either unavailable or too expensive. As an alternative to using telephone lines or cellular services, which are costly and sometimes difficult to maintain, Wireless Local Loop (WLL) is a technology that uses fixed or mobile radio transceivers to provide similar telephone services. Advancements in radio technologies in the last 10 years have made the WLL solution viable. WLL can be a quick, efficient and cost-effective way to provide basic telephone services in rural areas and developing regions, or as an alternative/backup of existing services.

SuperTel Technologies, established in 1996, designs and develops wireless voice and data communications products for commercial and consumer applications. The company is collaborating with a team of UW researchers headed by Dr. Ming-Ting Sun to investigate various digital communications techniques such as joint source/channel coding, error resilience coding, and DSP implementation to optimize the performance and cost of spread-spectrum WLL systems.

Image courtesy of SuperTel

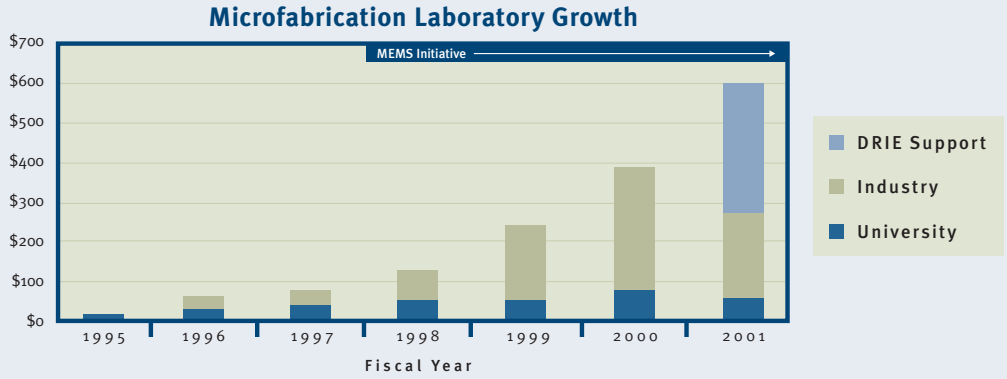
Microfabrication Laboratory

One of the areas critical to Washington's industrial future is MicroElectroMechanical Systems (MEMS) technology. For the past six years WTC has been developing and operating the Microfabrication Laboratory—available to both university and industry users. This 14,400 sq. ft. facility is located in Fluke Hall. During the last year the Microfab Lab supported 143 users, 42 of which were from industry and 101 from the University of Washington and Washington State University.

In FY 2001, the lab installed a new Deep Reactive Ion Etching (DRIE) system that will allow high aspect etching of silicon features—an enabling technology for advanced MEMS device processing. This $500,000 piece of equipment was jointly sponsored by the UW College of Engineering, Drs. Karl Böhringer and Tom Stoebe, the Nanotechnology Laboratory, the Provost's Office, and Microvision.

The Microfab Lab is a unique resource in Washington for research, technology development and prototype product manufacturing projects. Work conducted in the Lab ranges from exploratory research by academic users to process and product development by industrial clients.

Companies represent a variety of new and leading edge industries such as photonics, telecommunications, biotechnology and bioengineering. Products being developed will provide enhanced and unique imaging and display technologies for use in military, medical and manufacturing fields, pumping mechanisms for supporting all optical networks, efficient fuel cells for portable electronic devices, new biochips supporting faster drug discovery, and high quality measuring and sensing devices. University research is focusing primarily on micro-fluidics for biologic and medical purposes, photonics, and semi-conductors research.



One of the companies making use of the Microfab Lab is Neah Power Systems, Inc.

NEAH POWER SYSTEMS, INC., BOTHELL

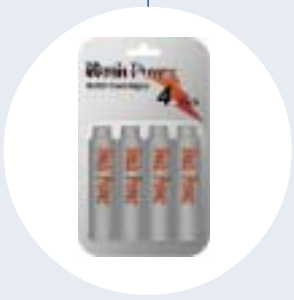


Image courtesy of Neah Power

The constantly increasing power requirements and complexity of laptop computers, cell phones, personal digital assistants (PDAs) and other mobile electronic devices have surpassed the capacity of conventional batteries to provide an adequate, reliable and convenient energy source.

Fuel cells represent a very important emerging technology that will provide significant increases in power output at the same weight to enable a large number of mobile devices and applications that are not feasible today. The second and equally valuable benefit of fuel cells is that they can be operated continuously by simply refilling the fuel by inserting a fuel cartridge.

Neah Power Systems is developing a miniature direct methanol fuel cell to be used as an alternative power source in notebook computers, cell phones, PDAs, and other portable electronic devices. Neah Power's miniaturized fuel cell will be integrated into a silicon substrate. This approach leverages the experience with processes, equipment and mass production already available in the integrated circuit (IC) industry. The company is building prototypes of the Neah Fuel Cell using the capabilities in WTC's Microfabrication Lab. Neah Power's technology will overcome efficiency loss limitations found in conventional state-of-the-art fuel cells while accommodating miniaturization.

Fluke Hall Resources

John M. Fluke, Sr. Hall is located on the University of Washington campus and is managed by WTC. This 73,000 sq. ft. facility houses a number of activities that are aimed at promoting technology in Washington's businesses primarily through industry-university collaborations.

In addition to WTC's Microfabrication Laboratory, the University of Washington Center for Nanotechnology also is located in Fluke Hall. This center is part of the Joint Institute for Nanoscience, formed in 2001 between UW and Pacific Northwest National Laboratories. There are three sponsored research centers: the Human Genome Project, the Human Interface Technology Laboratory (otherwise known as the HIT Lab) and the Intelligent Systems Laboratory. Additionally, five professors have individual laboratories located in Fluke Hall in which they are conducting a variety of research activities with industrial partners.

Three administrative offices are located in Fluke Hall, including WTC's main office. Several of the University of Washington's Human Genome research offices are here, as well as UW's Software and Copyright Ventures group—responsible for negotiating a variety of industrial relationships and certain types of intellectual property for licensing.

Regional Alliances

In an effort to bring more WTC services to local companies, two satellite offices were established in each of the last two years, with Energy Northwest's Applied Process Engineering Laboratories (APEL) in the Tri-Cities and the Columbia River Economic Development Corporation (CREDC) in Vancouver. With an official presence in each of these communities, WTC is not only able to impact more companies, but each of these organizations has even more to offer their local community. Some examples of joint activities include:

- During the last year, APEL and WTC were very collaborative. InnovaTek, a company based at APEL's facility in Richland, received a WTC Research & Technology Development (RTD) award. APEL and WTC also jointly developed a Northwest energy strategy recommending that a Northwest Energy Center be established to foster the development and commercialization of business clusters producing renewable energy products. Neah Power Systems, getting their start at WTC, moved to APEL for six months to conduct initial technical and lab work before moving back to Seattle to launch the company.
- CREDC represents an area where eight WTC projects during the last five years have been completed. Building on this regional strength, WTC and CREDC combined this past year to focus dedicated marketing efforts around Vancouver. Site visits and joint counseling with potential applicants are several of the partnership approaches that each brings to the table.

PARTNERSHIPS

ACTIVE COMPANY PARTNERS

Aculight, Bothell
Advanced Silicon Materials, LLC, Moses Lake
All Optical Networks, Redmond
Amplicon Express, Pullman
Applied Phytologics, Inc., Pullman
Argo Technical Publishing, Spokane
ARI Technologies, Kent
ATL Ultrasound, Bothell
Avista Utilities, Spokane
Barlean's Organic Oils, Ferndale
CombiMatrix, Mukilteo
D&A Instruments, Port Townsend
dB Systems, Inc., Redmond
Decagon Devices, Pullman
Edtek, Kent
EKOS Corporation, Bothell
Eldec, Lynnwood
Emerald Biostructures, Bainbridge Island
Farrson Chemicals, Kennewick
GenPrime, Inc., Spokane
HyperLynx, Inc., Redmond
Honeywell, Redmond
Inland Northwest Dairies, Spokane
InnovaTek, Inc., Richland
Inova, Inc., Richland
Inspiring Technology, Federal Way
The Institute for Systems Biology, Seattle
Intelligent Ion, Inc., Indianola
IST-Quadtek, Redmond
La Haye Laboratories, Redmond
LAB/COR, Seattle
LizardTech, Seattle
Lumera, Bothell
MCD Technologies, Tacoma
Micro Encoder, Inc., Kirkland
Micronics, Redmond
Microscan Systems, Inc., Renton
Microvision, Bothell
Mikron Industries, Kent
Molecular Kinetics, Inc., Pullman
Neah Power, Bothell
nLight Photonics, Seattle
Nu Element, Inc., Tacoma
OcuMed, Inc., Vancouver
OptiMems, Bellevue
Orca Photonics, Redmond
OC Technologies, Seattle
OriGyn Technologies, Valleyford
Pacific Research Laboratories, Vashon
Primex Aerospace Co., Redmond
Radiant Optics, Woodinville
RationalDiagnostics, LLC, Seattle
RealNetworks, Seattle
Saigene Corporation, Redmond
Saint-Gobain Crystals and Detectors, Washougal
Sharp Laboratories of America, Camas
Sienna Technologies, Woodinville
Söliv, Seattle
Sonexxus, Duvall
Sonotech, Bellingham
Spectra Lux Corporation, Kirkland
Steadfast Equipment, Mukilteo
Sterling International, Inc., Veradale
Stratos, Seattle
StressWave, Kent
SuperTel Technologies, Inc., Redmond
Therus Corporation, Seattle
OC Technologies, Seattle
UNIBEST International Corporation, Pasco
Vanson, Redmond

UNIVERSITY RESEARCH DEPARTMENTS

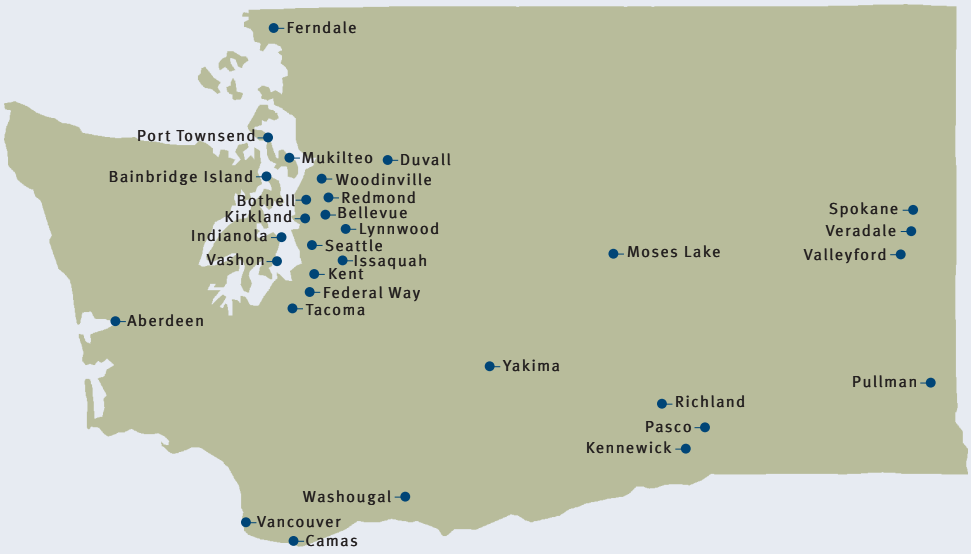
Columbia Basin Community College
- *Agriculture Program Operations*

Eastern Washington University
- *Biology*
- *Computer Science*

University of Washington
- *Aeronautics and Astronautics*
- *Applied Physics Laboratory*
- *Bioengineering*
- *Botany*
- *Chemical Engineering*
- *Chemistry*
- *Civil and Environmental Engineering*
- *Electrical Engineering*
- *Engineered Biomaterials*
- *Environmental Health*
- *Human Interface Technology Laboratory*
- *Laboratory Medicine*
- *Materials Science and Engineering*
- *Mechanical Engineering*

Washington State University
- *Animal Sciences*
- *Biological Systems Engineering*
- *Chemical Engineering*
- *Chemistry*
- *Civil and Environmental Engineering*
- *Crop and Soil Sciences*
- *Electrical Engineering and Computer Science*
- *Health Research and Education Center*
- *Institute of Biological Chemistry*
- *Mechanical and Manufacturing Engineering*
- *Physics*
- *School of Molecular Sciences*

Western Washington University
- *Plastics Engineering Technology*

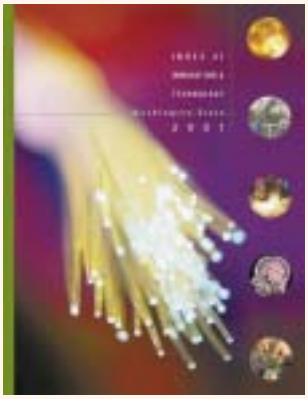


Promoting the Technology Business Environment

In serving the role as the state's knowledgeable and impartial science and technology organization, WTC studies, communicates and helps support leading edge technology-business development in Washington. This function is carried out in several ways. WTC acts as an information resource by publishing research reports and a quarterly newsletter, and promotes new technology advancements by conducting an emerging technology initiative program.

Publications

The second ***Index of Innovation & Technology for Washington State*** was published, updating the previous year's inaugural release and distributed in print to over 1,500 people. The 2001 *Index*—expected to be published on an ongoing basis—uses over 30 indicators that establish a benchmark for assessing progress in Washington's growing technology-based economy. Recognized as a leading resource for state policymakers, the *Index* has quickly become an integral part of our state's technology policy decision process. Both the 2000 and the 2001 reports became the number one visited page on WTC's web site, as well as attracting numerous news articles in the print and internet media.



This year's *Index* paints a picture of Washington as a state that is:

- Well-known for its dominant industries—agriculture, aircraft, forest products, and software
- Extremely entrepreneurial—a state where more ideas are being turned into companies than anywhere else
- Increasing its leadership position as an exporting state, especially in technology products such as aircraft and software
- Struggling with the downside of growth—uneven benefits across the state as well as transportation and housing issues in its most urban areas

WTC's newsletter, ***At-A-Glance***, is a quarterly publication that features information of interest to an industry and university audience, such as highlights of the projects that WTC supports via its three funding programs, Microfabrication Laboratory news, and other relevant programs and announcements.

To enhance its role as an information resource, WTC will be embarking on a new series of publications: ***Washington's Technology Directions Report***, which will convey the findings of a new WTC Science Council formed to identify leading technologies with the potential for significant future economic impact.

Emerging Technology Initiatives

WTC's Technology Initiative Program is aimed at helping to develop technology research activities in leading areas that will have broad application for Washington companies. Technical areas are selected after extensive roundtable discussions with a variety of industry and academic leaders across the state. WTC commits funding of up to $600,000 per biennium in support of these efforts. In addition to technical work conducted through supported research projects, WTC organizes annual workshops in these areas.

The first area selected in 1997 was MicroElectroMechanical Systems or MEMS, anticipated to be a $30 billion market by 2004. In addition to various projects selected by WTC for funding, the 4th annual MEMS workshop was held in October 2000, with 110 attendees and featuring Roger Grace, a leading industry analyst, and David Bishop, director of MEMS for Lucent-Bell Labs. Roger Grace cited Washington as being among the top three MEMS cluster locations in the country.

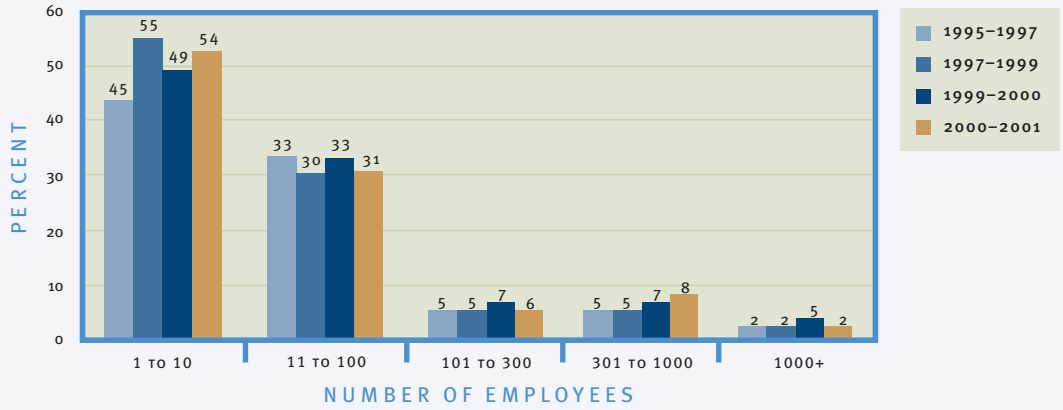
2001 saw the first year of activity in WTC's second Initiative area—Photonics Systems. Seven new projects, at both the University of Washington and Washington State University, were funded in the areas of All-Optical Devices, Optical Switches, Micro-Optic Fabrication, and Photonic Bandgap Structures. Below is a description of one of these new projects.

WASHINGTON STATE UNIVERSITY, ALEXANDER D.Q. LI, PH.D.

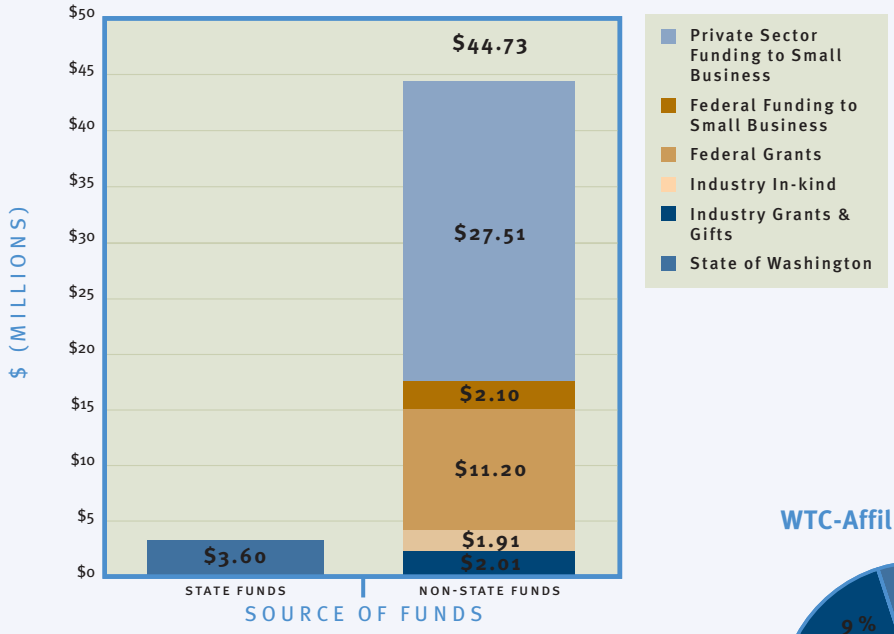
Current optical fiber technology is hampered by network protocols that require light-based signals to be processed electronically. Future communication systems appear to be heading towards all-optical networks, which can be much more cost-effective and bandwidth (capacity) efficient. Developing fiber optics-based devices that eliminate the need for opto-electrical conversion will be critical in meeting the growing demand for higher speed and wider bandwidth communications.

Existing state-of-the-art optical modulators use expensive inorganic crystals. One drawback of these crystals is that they cannot be incorporated into optical fibers. Alex Li of WSU's Department of Chemistry is researching an alternative approach by synthesizing new organic electro-optic materials that can be incorporated into polymer optical fibers (POFs). The integration of organic nonlinear optical materials with POFs will enable development of future photonic devices. These organic materials, which have desired compatiblity characteristics with POFs, will be essential for fabricating less costly and more efficient polymer optical fiber devices for use in ultra-high speed telecommunication.

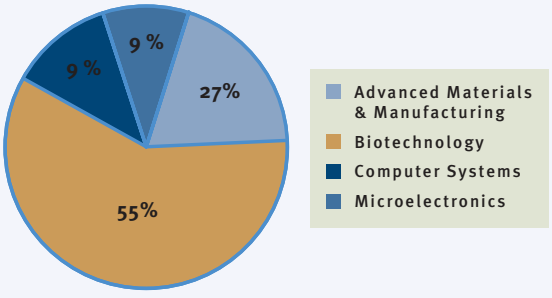
Company Size



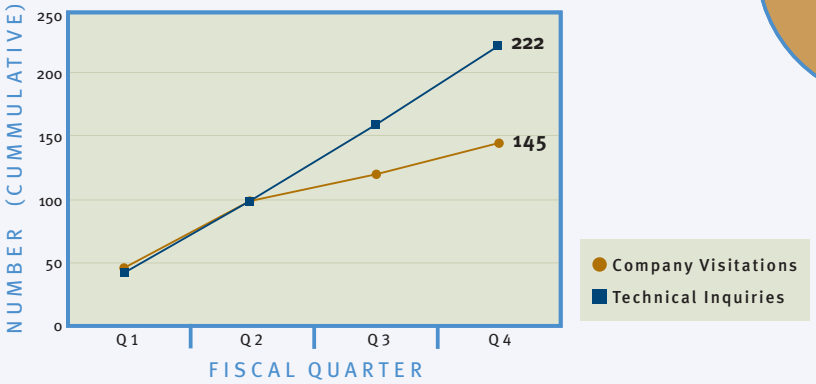
WTC Leverages State Funds — FY2001



WTC-Affiliated Disclosures/Patents/Licenses



Company Visitations & Technical Inquiries



WTC 2000–2003 Strategy — and Progress 2001

In June 1999, WTC's Board of Directors approved a new strategic plan, reaffirming the core mission of WTC. The plan continues to provide guidance for WTC's programs and operations. It focuses on three areas that will increase WTC's impact on the economic growth of Washington State.

(1) Ensure statewide participation

WTC will ensure that companies and researchers from across the state are included by:

- Opening WTC local offices in partnership with economic development groups or research organizations in six locations statewide;
- Allocating resources to ensure that companies of all sizes can participate in WTC projects;

To date: WTC opened its second satellite office—in Vancouver with the Columbia River Economic Development Council—joining the first opened the previous year in the Tri-Cities with Energy Northwest's Applied Process Engineering Laboratories.

The shift towards non-Puget Sound companies involved with WTC-supported projects continued—from 24 percent two years ago, to 37 percent last year, to 38 percent this past year.

(2) Participate in the Technology Policy Discussion

WTC can provide important information and perspective to policymakers within state government and the private sector by:

- Creating an annual *Index of Innovation & Technology*—a set of indicators clearly showing the progress of Washington's technology-based economy;

To date: The second *Index of Innovation and Technology* was published in July 2001 and instantly was one of the most popular downloads on WTC's web site.

(3) Increase resources available to WTC's programs

WTC will seek to diversify its funding sources by:

- Seeking federal and private sources of funding for programs;

To date: In the last quarter of 2001, WTC led a collaborative effort of several state, regional and private groups across Washington in submitting a federal proposal to support promotion of the Small Business Innovation Research Award (SBIR) and its sister Small Business Technology Transfer Award (STTR).

WTC hosted a video conference in September for Washington State companies to learn about NIST's Advanced Technology Program (ATP) funding opportunities. Through partnerships with the private sector, ATP's early investment accelerates the development of innovative technologies. The video conference described the program and how Washington companies could participate.

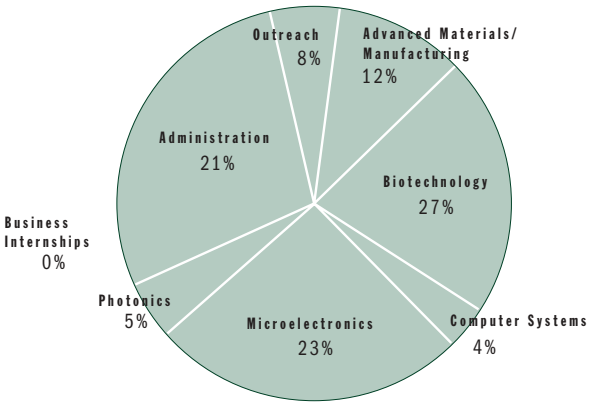
2000–2001 Annual Financial Report

State Funds

July 1, 1998 through June 30, 2001

	Fiscal Year 2001	Fiscal Year 2000	Fiscal Year 1999
Appropriations			
Operations	$ 3,602,500	$2,962,500	$3,592,167
Capital (Fluke Hall)			
Reappropriated from previous biennium	$0	$0	$0
New appropriation	$0	$0	$0
Total Appropiations	**$ 3,602,500**	**$2,962,500**	**$3,592,167**
Expenditures			
Operations	$ 3,602,500	$2,868,894	$3,592,167
Capital (Fluke Hall)	$0	$0	$0
Total Expenditures	**$ 3,602,500**	**$2,868,894**	**$3,592,167**

Expenditures for FY 2001 not firm yet. This is an estimated figure.



FY2001 Annual Expenditures by Program

Includes RTD, FTI, and EA programs

Advanced Materials & Manufacturing	$415,583
Biotechnology	$993,896
Computer Systems	$141,547
Microelectronics	$836,998
Photonics	$170,642
Business Internships	$4,000
Administration	$753,038
Outreach	$286,796
Total	**$3,602,500**

Non-State Funds

July 1, 2001 through June 30, 2001

	Fiscal Year 2001	Fiscal Year 2000	Fiscal Year 1999
CASH			
Federal Grants & Contracts	$ 80,971	$ 330,441	$ 8,974,104
Industry Grants & Contracts	$ 825,668	$ 743,132	$ 400,991
Industry Cash Gifts	$ 210,174	$ 7,500	$ 1,000
Subtotal – cash	**$ 1,116,813**	**$ 1,081,073**	**$ 9,376,905**
In-Kind Gift Commitments	**$ 736,667**	**$ 1,497,033**	**$ 2,313,858**
Total Non-State Support	**$ 1,853,480**	**$ 2,578,106**	**$ 11,689,953**
State Expenditures	$3,602,500	$ 2,868,894	$ 3,592,167

Expenditures for FY 2001 not firm yet. This is an estimated figure.

Advisory Commitee Members

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Pacific Northwest National Laboratory

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The Boeing Company

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Washington State University

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Pacific Northwest National Laboratory

Alex K-Y Jen
Materials Science and Engineering
University of Washington

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Mark Kuzyk
Physics Department
Washington State University

Dennis Lowenthal
Aculight

Hillary MacDonald
Lumera Corporation

Steve Moody
Orca Photonic Systems

James Thomson
Saint-Gobain Crystals and Detectors

Washington Technology Center
300 Fluke Hall
Box 352140
Seattle, WA 98195-2140

Tel: 206-685-1920
Fax: 206-543-3059
E-mail: info@watechcenter.org
www.watechcenter.org
www.watechcenter.org/pubs/annrpt/