



**Florida High Tech
Corridor Council, Inc.**

**Annual
Report
1999-2000**

Looking To A Better Future. . .

Dear Friends:

Being selected as a university president is an honor and an exciting challenge for any academic administrator. Being selected president of the University of South Florida carries special meaning, because this is one of only a few universities in America so focused on building partnerships ... partnerships with industry, partnerships with community, and most important, a partnership with the University of Central Florida.

I came here after having been involved in New York State's high technology community and related economic development. Perhaps the most attractive element of the USF challenge is our role in Florida's High Tech Corridor. The region's commitment to attracting, retaining and growing high tech industry is truly amazing. I don't know of a program anywhere in the country that compares with what the Corridor Council is doing.

I am personally committed to this partnership and to working with my friend President John Hitt at the University of Central Florida to forge a better future for the region our universities serve.



Sincerely,

A handwritten signature in cursive script that reads "Judy Genshaft".

Judy Genshaft, President
University of South Florida

Dear Friends:

Florida's investment in high technology economic development through the University of Central Florida and the University of South Florida continues to pay great dividends. We now have independent verification of the return on investment to state and local government from our efforts. You will also see in this annual report the growing impact on our economy from the innumerable industry partnerships with our universities.

The Florida High Tech Corridor has become a model for university partnerships. We are asked on a weekly basis to share the secret of our success with peer institutions from around the country. The message I give to them is quite simple:

- You must have a supportive political infrastructure.
- You must be willing to give. This, like any investment, pays dividends only after you have provided your own resources.
- You must have industry partners who are committed to help higher education in order to enhance their company goals.
- You must have a community of economic development professionals willing to share the task of attracting new industry and keeping existing companies.

We are fortunate to have all those and more. The past year has been another exceptional success, based largely upon the involvement of many people who are committed to this cause. With their continued support, the future looks even brighter.

Cordially yours,

A handwritten signature in cursive script that reads "John C. Hitt".

John C. Hitt, President
University of Central Florida



It's All About Quality Of Life. . .

Dear Colleagues:

What an exciting time for our region! Growth of high technology companies and high tech employment continues to establish this sector of our economy as one of opportunity now and in the future.

The work that high tech companies are doing in partnership with our universities is helping to create not only useable data and marketable products, but is building a workforce for the future that is trained right here at home.

In the past year it has been demonstrated that this is an excellent investment for Florida, returning \$3 in tax revenue for every dollar of state funding. As well, for the first time we have embarked on research that quantifies high tech employment, with more than 100,000 high tech jobs identified in our five sectors with more than 6,000 employers.

In the end, what we are doing through the Florida High Tech Corridor Council is all about Quality of Life. We know that a college education translates to significantly higher lifetime earning potential. We also know that having career opportunities here in our region once our students have completed their education means they will be more likely to stay and prosper here.

We are proud of the fact that 99% of the money the State of Florida invests in this program through UCF and USF goes directly into high technology research and development programs with corporate and institutional partners providing equal or greater matching funds. The other one percent not only funds the Corridor Council's efforts to market the region to high tech industries, but has provided significant funding for programs in concert with our region's community colleges.

Please join me in thanking and congratulating all those who are working to make that possible ... including those companies and individuals that have given literally tens of thousands of hours of volunteer effort to our cause.

Sincerely,



Randy Berridge
President



It's Working. . .

The stated mission of the Florida High Tech Corridor is clear: "attract, retain and grow high tech industry." Attaining our goal of a robust high technology corridor that spans the central part of the state involves a variety of programs and the support of both public and private sectors.

One indication of our success is the increasing recognition at national levels... in high tech industry circles, as well as in the nation's trade and business media... that, in fact, this is a region of important technology clusters.

The most important sign of success is in the form of jobs: jobs that have been created through expansions by existing employers, in startup and spin-off companies and companies attracted here by the resources of our universities, the caliber of our workforce and the commitment of our state and local governments to build a climate good for high tech business.

Conservative estimates by the University of South Florida Office of Economic Development indicate there are more than 100,000 high-tech jobs throughout the Corridor. These workers are employed by more than 6,000 companies in five key sectors ... semiconductors, lasers and optics, medical technology, simulation and training, and information technology.

Research Reaps Rewards

Since 1996 the High Tech Corridor Council's Research Initiative Program has provided \$19.2 million to more than 186 joint research projects involving the University of South Florida, the University of Central Florida and more than 100 industry partners. This investment has resulted in the attraction of more than \$46.6 million in matching funds for a total of \$64 million invested in Corridor research projects. We also enjoy a variety of patent applications and royalty agreements that are paying big dividends back to the schools.

Projects Paying Dividends

Examples of projects with long-term potential for both our industry partners and UCF and USF include:

Virtual Interface Networks - Schwartz Electro Optics and Erol Gelenbe, director of UCF's School of Electrical Engineering and Computer Science have partnered in the creation of a new venture called Giganet, Inc., which provides Virtual Interface Networks to the network attached storage (NAS) and database markets.

Photo Thermal Refraction - Light Processing and Technologies, Inc. and Dr. Leon Glebov, Center for Research and Education in Electro Optics and Lasers (CREOL) have developed new photo-thermal-refractive glass that is the basis for a new company, Light Processing and Technologies, Inc. The UCF Research Foundation is an equity partner in this program and holds a royalty agreement.

Medical Technology Facilities -

Partnerships with USF have resulted in the establishment of branch research locations for two leading medical technology companies in Tampa. Layton Bioscience is an early stage bioscience company developing novel diagnostics and therapeutics for disorders of the central nervous system. CO.DON Tissue Engineering is a leader in the discovery, development, marketing and distribution of tissue-engineered products, cell-based therapeutics and devices for the regeneration and repair of human tissue.



Electric Neighborhood Vehicle – USF faculty member Lee Stefanakos, along with the Rivolta Group, has developed the Rivolta Isigo, an electric “city car.” Production of the vehicle is being considered for Rivolta’s Sarasota, Florida facility.



Study Finds Investments Paying Off

In response to a request made by the Office of Tourism, Trade and Economic Development (O.T.T.E.D.), a Task Force comprised of representatives from O.T.T.E.D., the Florida Senate and House, Florida TaxWatch, USF, UCF, and the Council. This task force was assigned the responsibility of evaluating the benefits of investment programs that support the development of high-tech industry clusters.

Initial results of this study support cluster investment as an effective use of tax money and show the importance of high-tech industry growth to Florida. Findings include:

- *For every tax dollar invested in infrastructure, research and industry partnerships with UCF and USF, approximately three dollars were generated in Florida's economy.*

Since its inception in 1996, the Council has allotted \$19.2 million in state funding to research partnerships between UCF, USF and local technology-based industries. The study has shown that this investment has had a tremendous impact. In the first year alone, between \$15.7 and \$18.1 million was generated.

- *For every tax dollar invested in semiconductor industry research and development, 15 dollars were generated in Florida's economy.*

The Task Force also evaluated the impact that the Cirent Semiconductor/Bell Laboratories silicon technology expansion has had on the Florida economy. With approximately \$91 million in city, state and county investments, the return will be more than \$1.3 billion, and will result in the creation of more than 2,700 new jobs over the next six years.

Council Members: The True Success Story

Florida's High Tech Corridor Council is made up of a host of individuals and companies that all have the same goal...to help attract, retain and grow high tech industry.

Representatives of dozens of companies contribute countless hours of volunteer service. Their hard work and dedication has resulted in success story after success story. While it is impossible to tell every story, we highlight here two examples from the many significant contributions that our members have made.

- George Mezo of Oracle and Owen Wentworth, a retired AT&T executive, have been the driving force behind the creation of an interactive web-based survey system that will serve to facilitate communication regarding information technology training needs between High Tech Corridor employers, area educators, and the current and potential workforce. This Florida High Tech Corridor Competency Model will provide a description of the knowledge, skills, capabilities and behaviors required to perform various jobs or functions in the Information Technology sector. As well, it will allow students and employees to perform a self-assessment of their current skills, and will connect them to available education programs and employment opportunities based on this assessment.
- A fundamental key to the Council's mission of attracting, retaining and growing high-tech industry is the development of a highly trained workforce. The Tech 4 Consortium, an initiative of the Florida High Tech Corridor Council, is working with representatives from UCF, USF and the community colleges to fill this need. One program, called Chip Camp, is under the leadership of Dr. Jeff Bindell and Vicki Morelli from Cirent Semiconductor. The camp, educates math and science teachers and guidance counselors about high-quality jobs available in the semiconductor industry. During the last two years this team has conducted 10 Chip Camps and involved more than 450 participants from across the Corridor. Due to this success, the Tech 4 team plans to expand the program to a variety of locations across the Corridor. The first of these “mobile” Chip Camps was successfully conducted by Manatee Community College in Venice, Florida.

USF Projects. . .

By all accounts, the past year was a successful one for the University of South Florida. Its \$3.32 million in State funding was matched by more than \$4 million in private sector support and \$2 million in Federal research awards for a total of \$6 million. . . a more than 181 percent return on the State's Investment.

Gene Expression During Cartilage Repair

Project Leader: Joachim Sasse

Industry Partners: co.don, Inc.

A new tissue engineering technology called Autologous Cartilage Transplantation (ACT) has been developed that takes cultured chondrocytes, cells taken from a patient's cartilage, and reproduces them using a process known as in vitro growth. The new cartilage is then returned to the patient's damaged cartilage site.

The goal of this project is to use gene technology to identify the non-aged cells, which are most appropriate for in vitro growth.

According to Karl-Gerd Frisch, M.D., Ph.D., co-CEO of co.don A.G., "This research project has high merits from both scientific and applied viewpoints. Because of the Corridor project, Tampa is a leading candidate as a location for establishing co.don's U.S. research center and cell production facility. Collaboration with Dr. Joachim Sasse and USF has afforded co.don Tissue Engineering several key pieces of new information to consider in effecting cartilage repair."

Total Allocated Funds: \$225,000 (Total Project Costs)

Corridor Investment: \$75,000

Private Match: \$150,000 In-Kind

Improved Telecommunications Performance of Existing Satellite Systems

Project Leader: Rudy Henning

Industry Partners: Custom Manufacturing and Engineering (CME)

Funded by more than \$1 million of in-kind support from the Department of Defense, this project focuses on developing a more cost and performance effective way of avoiding premature outdated of equipment and extension of equipment life.

"Dr. Rudolph Henning's work conducted at USF has been very successful," said Fred Munroe, Director of Government Programs for CME. "Partly due to Dr. Henning's contribution, CME was recently awarded a Phase II contract for an Air Force SBIR. We expect the technology resulting from those two projects, when fully implemented in future military acquisitions and production programs, to significantly impact the growth of our company revenues and employment."

Total Allocated Funds: \$1.135 million (Total Project Costs)

Corridor Investment: \$100,000

Private Match: \$1 million In-Kind, \$35,000 Cash

A Media Gateway Control Protocol (MGC) Implementation for Video and Voice-over Packets Networks

Project Leader: Wilfrido Moreno

Industry Partners: Telenix Corporation

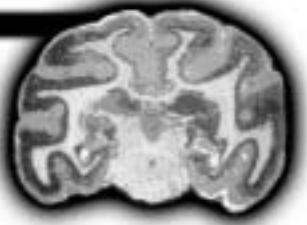
Using proprietary hardware and embedded software, this project will develop an easily portable Media Gateway Control Protocol stack and a Telenix VoIP card that will work well with European standards.

The project also includes studying current video IP standards for video transmission over wide area networks.

Convergent telecommunications networks of the future will consist of elements with various functions: voice, computer, television, servers, terminals and more.

This project investigates the underlying protocol that will enable each one of these elements to communicate with each other





through a common language, for the purpose of real-time distribution of video over networks.

Total Allocated Funds: \$410,479 (Total Project Costs)
Corridor Investment: \$75,479
Private Match: \$300,000 In-Kind, \$35,000 Cash

ADDITIONAL PROJECTS BY SECTOR:

MICROELECTRONICS/SEMICONDUCTOR MANUFACTURING AND DEVELOPMENT

Cirent/USF Engineering Education Interactive Program

Industry Partner: Cirent Semiconductor
Total Allocated Funds: \$614,000 (Total Investment)
Corridor Investment: \$307,000
Private Match: \$307,000

USF Center for Microelectronics Research (CMR) to Support Metrology, Silicon Technology and Micro-Fabrication

Total Allocated Funds: \$430,000 (Total Investment)
Corridor Investment: \$430,000

Design of Cleanroom/Laboratory for the New USF Engineering Complex (ENG3)

Total Allocated Funds: \$271,000 (Total Investment)
Corridor Investment: \$271,000

High Technology Outreach Office for the Development of Engineering and Private Sector Partnerships

Total Allocated Funds: \$105,343 (Total Investment)
Corridor Investment: \$105,343

On-Water Metrology for 100 Ghz Microelectronics

Project Leader: Lawrence Dunleavy
Industry Partners: Raytheon, Alliant, Lockheed Martin, GGB Industries, Maury Microwave, Noise/Com, Anritsu
Total Allocated Funds: \$532,770 (Total Investment)
Corridor Investment: \$145,000
Private Match: \$224,144 Cash, \$72,946 Equipment, \$90,680 In-Kind

TELECOMMUNICATIONS

Analysis of Digital Cellular Protocols for the Software Development/Hardware Implementation of Dual-Mode Pre-paid Cell Communications

Project Leaders: Lawrence Dunleavy, Ken Buckle
Industry Partners: SATX/Debitfone, Inc.

Total Allocated Funds: \$242,278 (Total Investment)
Corridor Investment: \$61,278
Private Match: \$25,000 Cash, \$126,000 Equipment, \$30,000 In-Kind

Wideband Wavelet-based Orthogonal Multipurpose Signaling for Broadband Wireless Communications

Project Leader: Vijay Jain
Industry Partners: Intersil Corporation

Total Allocated Funds: \$45,000 (Total Investment)
Corridor Investment: \$15,000
Private Match: \$30,000 Cash

Creating a Simulation Environment to Build and Test Very Large Telecommunications Databases

Project Leader: Rafael Perez
Industry Partners: Computer Systems and Services

Total Allocated Funds: \$128,310 (Total Investment)
Corridor Investment: \$41,180
Private Match: \$13,130 Cash, \$18,000 Equipment, \$56,000 In-Kind

Digital Resampling at Intermediate Frequencies

Project Leader: Arthur Snider
Industry Partners: Intersil Corp.

Total Allocated Funds: \$30,000 (Total Investment)
Corridor Investment: \$10,000
Private Match: \$20,000 Cash

Micromachined Components and Packaging for a K-Band Receiver

Project Leader: Thomas Weller
Industry Partners: Raytheon

Total Allocated Funds: \$75,000 (Total Investment)
Corridor Investment: \$25,000
Private Match: \$25,000 Cash, \$25,000 In-Kind

Continued next page. . .



OPTICS AND LASERS

Strategic Planning Document on Florida's Laser and Optics Cluster by USF Office of Economic Development (OED) for Corridor EDO's and the Corridor Council

Total Allocated Funds: \$25,000 (Total Investment)

Corridor Investment: \$25,000

Development of Transparent Electrode for Mercuric Iodide Photo-Detectors

Project Leader: Chris Ferekides

Industry Partners: Constellation Technology

Total Allocated Funds: \$174,000 (Total Investment)

Corridor Investment: \$58,000

Private Match: \$46,000 Cash, \$70,000 Equipment

Development of Radiation Resistant Optical Fiber Polymers

Project Leader: Julie Harmon

Industry Partners: Honeywell, Inc.

Total Allocated Funds: \$55,500 (Total Investment)

Corridor Investment: \$19,500

Private Match: \$36,000

OTHER TECHNOLOGIES/PROJECTS

Six Sigma Methodologies for Manufacturing Improvements

Project Leader: Les Cahoom

Industry Partners: Ditek, K-Byte, Dovatron & Southern Manufacturing Technologies

Total Allocated Funds: \$277,900 (Total Investment)

Corridor Investment: \$50,000

Private Match: \$67,230 Equipment, \$160,670 In-Kind

Solder Joint Reliability for Ball and Column Grid Array Components Fielded in a Space Environment

Project Leader: Muhammed Rahman

Industry Partners: Honeywell, Inc.

Total Allocated Funds: \$31,860 (Total Investment)

Corridor Investment: \$10,620

Private Match: \$11,240 Cash, \$10,000 Equipment

Marine Sciences—Infrastructure Support for the Physical Oceanographic Real-Time System (PORTS)

Total Allocated Funds: \$150,000 (Total Investment)

Corridor Investment: \$150,000

BIOENGINEERING AND BIOMEDICAL

Characterization of Novel, Highly Permeable, Contact Lens Materials

Project Leader: Julie Harmon

Industry Partners: Benz R&D

Total Allocated Funds: \$76,500 (Total Investment)

Corridor Investment: \$26,500

Private Match: \$25,000 Cash, \$5,000 Equipment, \$20,000 In-Kind

Visualization and Biochemical Modeling of the Human Larynx

Project Leader: Don Hilbelink

Industry Partners: Gold Standard Multimedia, Inc.

Total Allocated Funds: \$70,000 (Total Investment)

Corridor Investment: \$20,000

Private Match: \$30,000 Cash, \$20,000 In-Kind

**Layton BioScience/USF
Neurodevelopment Program**

*Project Leader: Paul Sanberg
Industry Partners: Layton BioScience*

*Total Allocated Funds: \$750,000 (Total Investment)
Corridor Investment: \$250,000
Private Match: \$320,000 Cash, \$180,000 In-Kind*

**Industry Outreach and Small Business
Innovative Research Development
with the USF Bioengineering Institute
and OED**

*Total Allocated Funds: \$25,000 (Total Investment)
Corridor Investment: \$25,000*

INFORMATION TECHNOLOGY

**Information Technology Workforce
Development at Regional USF
Campuses**

*Total Allocated Funds: \$296,100 (Total Investment)
Corridor Investment: \$296,100*

**The Office of Resources for Business
and Industry (ORBIT) corporate and
workforce training with UCF and
Seminole Community College for Job
Skill Support**

*Total Allocated Funds: \$265,000 (Total Investment)
Corridor Investment: \$125,000
Private Match: \$140,000*

**OED Information Technology Job Skills
Support**

*Total Allocated Funds: \$25,000 (Total Investment)
Corridor Investment: \$25,000*

**Industry Outreach and Small Business
Innovation Research Development
with the USF Center for Digital and
Computational Video and OED**

*Total Allocated Funds: \$10,000 (Total Investment)
Corridor Investment: \$10,000*

**Startup Support for the Community
College and University Business and
Industry Training (CCUBIT) Consortia
Mobile Teaching Network Laboratory**

*Total allocated Funds: \$250,000 (Total Investment)
Corridor Investment: \$125,000
Private Match: \$125,000*

**HIGH-TECH WORKFORCE AND
ECONOMIC DEVELOPMENT**

**Metrics Report with Florida TaxWatch
for the Governor's Office of Tourism,
Trade and Economic Development
(OTTED)**

*Total Allocated Funds: \$20,000 (Total Investment)
Corridor Investment: \$20,000*

**Economic Analysis, Development of
Web-based Data Services for Florida
EDOs and International Marketing**

*Total Allocated Funds: \$511,400 (Total Investment)
Corridor Investment: \$360,000
Private Match: \$151,400*

**Office of Economic Development (OED)
Workforce Development Through
Recruitment of Engineers and
Scientists, and Development of an
Internet Career Portal for the Corridor**

*Total Allocated Funds: \$135,000 (Total Investment)
Corridor Investment: \$80,000
Private Match: \$55,000*



UCF Projects. . .

The number of projects conducted by the University of Central Florida in conjunction with local industry and funded by the Council and the State of Florida nearly doubled this year. Total allocated funds topped out at more than \$15 million, while the Council's investment reached \$3.52 million.

Adaptive Synthesis of an Objective Image Quality Function

Project Leader: Harley Mylar

Industry Partners: TeraNex

The study of image-quality issues is of great concern to developers and manufacturers of High Definition Television (HDTV) systems. HDTV requires a substantially greater amount of bandwidth than analog television due to the high data volume of the image stream. Because of this, HDTV signals are often compressed with lossy schemes that can degrade the quality of the imagery in terms of human subjective interpretation. This project addresses the problem of subjective image quality.

The approach of the project was to develop objective measures that model human perception and to perform systems identification using an adaptive learning scheme. This approach may prove to be superior to existing approaches that are based on perceptual studies alone.

The impact of this research could be revolutionary to programming. Fundamental results could include a new and automatic methodology for automated programming of parallel architectures, and the algorithm derived for objective image quality assessment could also be used in conventional architectures (Von Neumann) or DSP systems.

Total Allocated Funds: \$190,469

Corridor Investment: \$45,264

Private Match: \$45,205 Cash, \$100,000

In-Kind

Application-Specific Chip Design Using Asynchronous Digital Methodologies

Project Leader: Jiann-Shium Yuan

Industry Partners: Thesus Logic

The evolution of Silicon technology toward high-density, deep sub-micron devices has focused significant attention on clocks and clock distribution networks. This is due to the fact that they are expensive elements in today's products and are a potentially limiting factor in tomorrow's designs. Self-synchronizing asynchronous delay insensitive circuits have long been sought after by the microelectronics industry. Using Thesus Logic's NULL Convention Logic (NCL™), the approaching design crisis can be avoided by eliminating the requirement for clocks to control the flow of data.

Low power DSP chips will become increasingly important to many consumer and military applications due to the desire to provide increased mobility while simultaneously taking advantage of the performance benefits which digital implementation provides. Digital cellular telephones, portable test equipment and Personal Digital Assistants are a few of the many applications that wouldn't be possible without low power DSP technology. This project will help design lower power DSP chips using NCL methodology.

Total Allocated Funds: \$330,000

Corridor Investment: \$150,000

UCF Match: \$30,000

Private Match: \$150,000 Cash

High Precision Laser Forming, Shaping and Annealing for Flat Panel Display Applications

Project Leader: Aravinda Kar

Industry Partners: Applied Photonics

The goal of this project is to transform sharp edges (90° corners) on panel display material, such as glass, into smooth, round edges. This improves edge quality and product geometry and strength.

A high-power CO₂ laser can be used to heat up the material and in a controlled



manner, deform localized hot spots to attain a desired material shape.

This localized heating can also anneal the material, which can be used to heal cracks, through local melting and filling. This will provide a means of eliminating micro-cracks in flat panel display materials, and therefore, increase their strength.

Total Allocated Funds: \$80,000

Corridor Investment: \$35,000

Private Match: \$45,000 Cash

Of Note:

UCF provided \$1 million of Corridor matching funds to Cirent Semiconductor and Bell Labs to be used for research. These funds were matched by \$1.5 million in donated equipment; \$200,000 in Bell Labs scientists, technicians and administrative services; and \$2 million in additional corporate and federal sources. Upon receiving the Corridor's funds, Cirent Semiconductor and Bell Labs decided to reinvest the money in UCF's AMPAC research facility. This reinvestment is broken down as follows: \$750,000 went to hire university faculty for the facility, \$150,000 went to the materials characterization facility component of AMPAC, \$50,000 was used to train Cirent / Bell Labs and other university and corporate employees at AMPAC, and \$50,000 went to support UCF, AMPAC projects at the Orlando Science Center.

ADDITIONAL PROJECTS BY SECTOR:

MICROELECTRONICS/SEMICONDUCTOR MANUFACTURING AND DEVELOPMENT

Characterization of Candidate CMP Consumables

*Project Leader: Kathleen Richardson
Industry Partners: Black Rock Technologies*

Total Allocated Funds: \$80,000

Corridor Investment: \$40,000

Private Match: \$40,000 Cash

Corporation/UCF/Corridor Partnership in Digital Signal Processing/Wireless Communications Technology

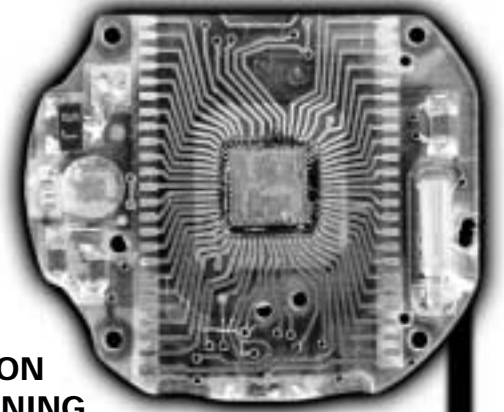
*Project Leader: Wasfy Mikhael
Industry Partners: Intersil Corporation*

Total Allocated Funds: \$330,000

Corridor Investment: \$60,000

Private Match: \$90,000 Cash, \$180,000

In-Kind



SIMULATION AND TRAINING

COSAIR Content Oriented Semantics and Image Retrieval for Simulation, Training and Surveillance

*Project Leader: Erol Gelenbe
Industry Partners: Harris*

Total Allocated Funds: \$152,000

Corridor Investment: \$75,000

Private Match: \$52,000 Cash, \$25,000

In-Kind

CORVAIR Content Oriented Video and Image Retrieval for Simulation, Training and Surveillance

*Project Leader: Erol Gelenbe
Industry Partners: Silicon Graphics, Inc.*

Total Allocated Funds: \$10,000

Corridor Investment: \$5,000

Private Match: \$5,000 Cash

A Modeling and Simulation Analysis Center

*Project Leader: Gary Green
Industry Partners: STRICOM*

Total Allocated Funds: \$114,812

Corridor Investment: \$13,000

Private Match: \$101,812 Cash

Predictive techniques for Temporal Line-of-Sight Determination and Image Correlation

*Project Leader: Guy Schiavone
Industry Partner: STRICOM*

Total Allocated Funds: \$357,000

Corridor Investment: \$7,000

Private Match: \$350,000 Cash

Multimedia In-Service Training

*Project Leader: Ronald Tarr
Industry Partners: NAWCTSD*

Total Allocated Funds: \$225,000

Corridor Investment: \$25,000

Private Match: \$200,000 Cash

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Infrared Targets for Test and Training

*Project Leader: Thomas Clark
Industry Partners: NAWCTSD, IST*

*Total Allocated Funds: \$375,000
Corridor Investment: \$37,500
Private Match: \$337,500 Cash*

Context-based Representation of Intelligent Behavior in Degraded Systems Simulation Air Force M&S Education ADL Model

*Project Leader: Ronald Tarr
Industry Partners: Air Force, IST*

*Total Allocated Funds: \$300,000
Corridor Investment: \$30,000
Private Match: \$270,000 Cash*

Improving the Quality of Computer Graphics for Visual Simulation

*Project Leader: Brian Goldiez
Industry Partners: Evans & Sutherland Corporation*

*Total Allocated Funds: \$40,000
Corridor Investment: \$20,000
Private Match: \$20,000 Cash*

Design, Fabrication and Testing of a Meso-Scale Refrigerator

*Project Leader: Jayanta Kapat
Industry Partners: Lockheed Martin Missile & Fire Control, MMAE*

*Total Allocated Funds: \$63,032
Corridor Investment: \$35,000
Private Match: \$21,000 Cash
UCF Match: \$7,032*

Application of Parallel Computing in the Distributed Simulation Environment—Automatic Program Partitioning Study

*Project Leader: Kuo-Chi Lin
Industry Partners: Science Applications International Corporation*

*Total Allocated Funds: \$44,250
Corridor Investment: \$10,000
Private Match: \$34,250 Cash*

SOFTWARE DEVELOPMENT

UCF-Oracle Collaborative Research on Tools for Systems Assurance Analysis

*Project Leader: Kien Hua
Industry Partners: Oracle*

*Total Allocated Funds: \$270,000
Corridor Investment: \$100,000
Private Match: \$100,000 Cash, \$70,000 In-Kind*

Using Design Metrics to Identify Error-Prone Modules and Evaluate Risk

*Project Leader: Darrel Linton
Industry Partners: Honeywell*

*Total Allocated Funds: \$28,000
Corridor Investment: \$14,000
Private Match: \$14,000 Cash*

Web-based Design Environment (WDE) and Web-Based Knowledge Capture (WKS)

*Project Leader: Jamal Nayfeh
Industry Partners: Lockheed and or Technosoft sub Engineering*

*Total Allocated Funds: \$184,236
Corridor Investment: \$15,000
Private Match: \$150,000 Cash
UCF Match: \$19,236*

Virtual Environment Software System

*Project Leader: Kimberly Parsons
Industry Partner: ARI, STRICOM*

*Total Allocated Funds: \$253,000
Corridor Investment: \$28,000
Private Match: \$225,000 Cash*

Computer 3-D Structures of Protein Molecules on a Large Cluster of PCs

*Project Leader: Deo Narsingh
Industry Partners: Honeywell Space Systems*

*Total Allocated Funds: \$40,000
Corridor Investment: \$20,000
Private Match: \$20,000 Cash*

Probabilistically Determining Error-Prone Modules Using an Incomplete Design Metric Database

*Project Leader: Darrel Linton
Industry Partners: Honeywell Space Systems*

*Total Allocated Funds: \$28,000
Corridor Investment: \$14,000
Private Match: \$14,000 Cash*

Enhancements to the Virtual Environment Software System

Project Leader: Kimberly Parsons/Glenn Martin

Industry Partners: ARI, IST

Total Allocated Funds: \$420,000

Corridor Investment: \$37,500

Private Match: \$382,500 Cash

Redefining Photography: Simulating Painterly Effects in Images

Project Leader: Jannick Rolland

Industry Partners: SmARTlens Corporation

Total Allocated Funds: \$100,000

Corridor Investment: \$50,000

Private Match: \$50,000 Cash

A Data Mining System for Solid Rocket Booster Program

Project Leader: Morgan Wang

Industry Partners: United Space Alliance

Total Allocated Funds: \$30,000

Corridor Investment: \$10,000

Private Match: \$20,000 Cash

Automatic Tools for Systems Diagnosis

Project Leader: Kien Hua

Industry Partners: Oracle

Total Allocated Funds: \$200,000

Corridor Investment: \$100,000

Private Match: \$100,000 Cash

LASERS AND ELECTRO-OPTICS

Laser Microprocessing of Plain and Braided Tubes to produce Radioactive Stents for the Treatment of Coronary Artery Disease

Project Leader: Aravinda Kar

Industry Partners: Bio-Nucleonics

Total Allocated Funds: \$23,982

Corridor Investment: \$12,000

Private Match: \$11,982 Cash

Laser Conversion of Silicon Carbide for High Temperature Sensor and Control Applications

Project Leader: Aravinda Kar

Industry Partners: Applicote Associates

Total Allocated Funds: \$20,500

Corridor Investment: \$10,000

Private Match: \$10,500 Cash

Design, Test Prototype to Obtain Platform for Precision Measurements of Constant Velocity/Acceleration of a Test Vehicle with a Laser

Project Leader: Roger Johnson

Industry Partners: Lockheed

Total Allocated Funds: \$40,000

Corridor Investment: \$20,000

Private Match: \$20,000 Cash

Laser Micro-Processing for Metal Fiber Fabrication

Project Leader: Aravinda Kar

Industry Partners: U.S. Filter/Fluid Dynamics

Total Allocated Funds: \$65,000

Corridor Investment: \$10,000

Private Match: \$10,000 Cash, \$45,000

In-Kind

Microwave/Millimeter Wave Fiber-Optic Links

Project Leader: Guifang Li

Industry Partners: Uniphase, NSF, Hewlett Packard

Total Allocated Funds: \$93,720

Corridor Investment: \$10,000

Private Match: \$35,000 Cash, \$48,720

In-Kind

Nonlinear-Optical Measurements of Power and Energy Density of Laser Beams

Project Leader: Zel Dovich

Industry Partners: BEAM Corp.

Total Allocated Funds: \$70,000

Corridor Investment: \$35,000

Private Match: \$35,500 Cash

Holographic Narrow-Band Filters for Selected Spectral Lines Detection

Project Leader: Leonid Glebov

Industry Partners: Light Processing & Technologies

Total Allocated Funds: \$60,000

Corridor Investment: \$30,000

Private Match: \$30,000 Cash

Wavelength-Selectable Ring-Cavity Lasers for Photonic Analog-to-Digital Conversion and WDM Optical Networks

Project Leader: Guifang Li

Industry Partners: ENSCO, Inc., NSF

Total Allocated Funds: \$221,263

Corridor Investment: \$78,000

Private Match: \$103,263 Cash, \$40,000

In-Kind

Continued next page. . .

Evaluation of the Defect and Impurity Effect on Scintillation Behavior of LSO and LYSO Single Crystals

Project Leader: Lee Chow

Industry Partners: Crystal Photonics, Inc., Physics/MMAE

Total Allocated Funds: \$73,166

Corridor Investment: \$15,000

Private Match: \$15,000 Cash

UCF Match: \$43,166 In-Kind

Vehicle Classification From Top-Down Laser Telemetry Energy Response

Project Leader: Erol Gelenbe

Industry Partners: Schwartz Electro-optics

Total Allocated Funds: \$36,000

Corridor Investment: \$18,000

Private Match: \$18,000 Cash

MEDICAL BIOMEDICAL TECHNOLOGY

Characterization of Hydrated Poly-methyl Methacrylate

Project Leader: Larry Chew

Industry Partners: Xenon

Total Allocated Funds: \$69,000

Corridor Investment: \$34,000

Private Match: \$35,000 Cash

OTHER TECHNOLOGIES/PROJECTS

Support for Central Florida Business and Technology Development Center

Project Leader: Tom O'Neal

Industry Partners: Sponsored Research, School of Optics, Engineering, College of Business, Scottish Enterprises, SunTrust, TRDA

Total Allocated Funds: \$748,000

Corridor Investment: \$135,000

Private Match: \$513,000 Cash, \$100,000 In-Kind

An Innovative Copper Coating of Coal Combustion By-Products for Conductive Filler Applications: Value-Added Recycling Waste

Project Leader: Sudpita Seal

Industry Partners: U.S. Natural Resources

Total Allocated Funds: \$50,000

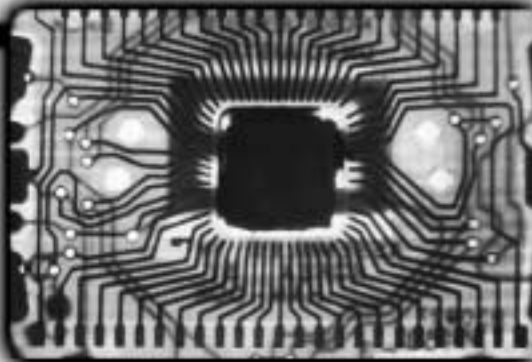
Corridor Investment: \$25,000

Private Match: \$25,000 Cash

Advanced Techniques for Motion Compensation of 2-D Imagery

Project Leader: Mubarak Shah

Industry Partners: TeraNex



Total Allocated Funds: \$40,000

Corridor Investment: \$20,000

Private Match: \$20,000 Cash

Image Registration Prescreening Metric

Project Leader: Mubarak Shah

Industry Partners: Harris Corporation

Total Allocated Funds: \$52,000

Corridor Investment: \$26,000

Private Match: \$26,000 Cash

NSF-STTR Phase I-Low Voltage Multi-Output Converters with Unity Power Factor for New Generation of Computer Systems

Project Leader: Issa Batarseh

Industry Partners: Electrodynamic Associates

Total Allocated Funds: \$78,577

Corridor Investment: \$30,000

Private Match: \$48,577 Cash

Infrared Transparent Organic Polymers

Project Leader: Kevin Belfield

Industry Partners: Lockheed Martin Electronics & Missiles

Total Allocated Funds: \$100,000

Corridor Investment: \$50,000

Private Match: \$50,000 Cash

IR Microstrip Antennas: Development of Uncooled Wavelength-Tunable Pixels

Project Leader: Glenn Boreman

Industry Partners: Lockheed Martin Electronics & Missiles

Total Allocated Funds: \$102,000

Corridor Investment: \$50,000

Private Match: \$52,000 Cash

Nitric Oxide Emission of Premixed Natural Gas Flames under Gas Turbine Combustion Conditions

Project Leader: Ruey-Hung Chen

Industry Partners: Siemens Westinghouse

Total Allocated Funds: \$75,132

Corridor Investment: \$37,566

Private Match: \$37,566 Cash

The Development of Environmentally Compatible Gaseous Infrared Screening and Filter Mixtures

*Project Leader: Christian Clausen
Industry Partners: Engineering Technology, Chemistry Department*

*Total Allocated Funds: \$67,227
Corridor Investment: \$25,000
Private Match: \$25,000 Cash
UCF Match: \$17,227 Cash*

Performance of Oxide Ceramics in Gas Turbine Environments Containing High Temperature Water Vapor

*Project Leader: Vimal Desai
Industry Partners: Seimens Westinghouse*

*Total Allocated Funds: \$50,000
Corridor Investment: \$25,000
Private Match: \$25,000 Cash*

TP-RAID: Transaction Processing Performance of RAID

*Project Leader: Erol Gelenbe
Industry Partners: Distributed Processing Technology*

*Total Allocated Funds: \$102,000
Corridor Investment: \$51,000
Private Match: \$51,000 Cash*

High-Tech Corridor Institute for Secondary Science and Mathematics

*Project Leader: Judith Johnson
Industry Partners: Lockheed Martin Academy*

*Total Allocated Funds: \$29,850
Corridor Investment: \$10,000
Private Match: \$19,850 Cash*

Field-controlled Fluidic Damper (Phase II)

*Project Leader: Weili Luo
Industry Partners: Lockheed Martin*

*Total Allocated Funds: \$50,000
Corridor Investment: \$15,000
Private Match: \$35,000 Cash*

Studying the High Temperature Performance of Ceramic Matrix Composites for Gas Turbine Applications

*Project Leader: Vimal Desai
Industry Partners: Seimens Westinghouse*

*Total Allocated Funds: \$30,000
Corridor Investment: \$15,000
Private Match: \$15,000 Cash*

Monolithic Integrated Mach-Zehnder Interferometric Devices

*Project Leader: Patrick LiKamWa
Industry Partners: Technology Capital Funding Group, LLC*

*Total Allocated Funds: \$172,600
Corridor Investment: \$50,000
Private Match: \$122,600 Cash*

Photo-Activated Polymers

*Project Leader: George Stegeman
Industry Partners: Lockheed Martin Missiles & Fire Control*

*Total Allocated Funds: \$100,000
Corridor Investment: \$40,000
Private Match: \$60,000 Cash*

Reed-Salomon Decoder Design for Satellite Communications

*Project Leader: Jiann-shiun Yuan
Industry Partners: RSI Baseband Technologies*

*Total Allocated Funds: \$60,000
Corridor Investment: \$30,000
Private Match: \$30,000 Cash*

University of Central Florida Projects Coordinated With the Florida Space Institute

*Project Leader: Tom O'Neal
Industry Partners: Florida Space Institute*

*Total Allocated Funds: \$1,058,000
Corridor Investment: \$350,000
Private Match: \$708,000 Cash
UCF Match: \$135,000*

University of Central Florida Projects Coordinated With the National Center for Simulation

*Project Leader: Tom O'Neal
Industry Partner: National Center for Simulation*

*Total Allocated Funds: \$1,250,000
Corridor Investment: \$325,000
Private Match: \$925,000 Cash*





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