yamacraw
futureforward

yamacraw
futureforward

1.0

What is a Yamacraw anyway?

Yamacraw is the site overlooking the Savannah River where James Oglethorpe, Georgia's founder, first set foot in the state in 1733. Yamacraw Bluff was a symbol of discovery and opportunity for the colonists. Today's Yamacraw is redefining Georgia's high tech landscape as one of technological discovery and commercialization opportunities.

The State of Georgia has committed a minimum of $100 million to a five-year Yamacraw program that integrates private enterprise, academia, and state government to make Georgia companies world leaders in the design of broadband systems.
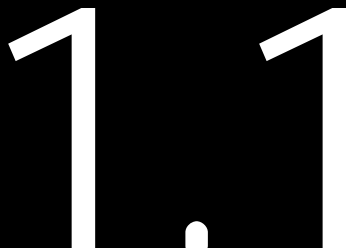
It all comes together in Yamacraw.

1.1
Cutting edge research

1.2
Pipeline to qualified talent

1.3
Access to further education and career opportunities

1.1

Cutting edge research
at Yamacraw Design Center

YAMACRAW COMPANIES

(AS OF 05/01/00)

STAR*CORE

BROADCOM CORP.

NATIONAL SEMICONDUCTOR CORP.

WILAN, INC.

(USE LOGOS)

Today the Yamacraw Design Center is virtual and based in the Georgia Center for Advanced Telecommunications and Technology near the Georgia Tech campus. Tomorrow it will be a new state-of-the-art building a few blocks away.

Georgia has committed more than $18 million over the next five years for Yamacraw research to overcome key inhibitors to electronic design in the target markets of broad-band networks, high speed access devices, and content processing. This builds on an existing annual research investment in Georgia of $150 million and 250 researchers.

Yamacraw Design Center is a research consortium. Yamacraw companies participate in the Yamacraw Design Center's research and share in Yamacraw commercialization opportunities(royalty-free. Yamacraw helps to close the gap between research and product, and serves as a landing pad for out-of-state companies.

Yamacraw Design Center research is focused in three areas of broadband technology: optical networking, high-speed access devices and content processing. Within these areas there are three major thrusts: embedded software, broadband access hardware, and system prototyping.

Yamacraw Research Thrust 1 - Embedded Software
Leader: Vijay Madisetti, Ph.D.
Professor, Georgia Tech, School of Electrical and Computer Engineering
Founder and Chairman of VP Technologies, Inc. (defense software applications)
Author: *VLSI Digital Signal Processors, The Digital Signal Processing Handbook* and six other books.

Research budget: $1.75 million for Year 1

faculty and 42 graduate student researchers from Georgia Tech and Southern Polytechnic
23 additional participating Georgia Tech faculty

Yamacraw Deliverables:
Embedded software as tool kits and intellectual property component libraries for telecommunications applications, including:
Front-end modeling tools
Trade-off analyzers
Code generators (diagnostic, application, and control)
Middle layer technologies for personal, networked and home computing applications

Goal: Develop, test and validate about 25 embedded software packages.

How to become a Yamacraw company:

Commit to create at least 100 high-tech jobs in Georgia over the following five years
(plus an annual membership fee of $25,000), or Commit $1.25 million in financial support
over five years to Yamacraw Contact Yamacraw Research Director at 404-894-1400.

SAMPLE OF SUPPORTING RESEARCH CENTERS

BROADBAND TELECOMMUNICATIONS CENTER (BTC)

CENTER FOR SIGNAL AND IMAGE PROCESSING (CSIP)

COMMUNICATIONS SYSTEMS CENTER (CSC)

ELECTRO-OPTICS, ENVIRONMENT, AND MATERIALS LABORATORY (EOEML)

GEORGIA TECH ANALOG CONSORTIUM

GRAPHICS, VISUALIZATION & USABILITY CENTER (GVU)

INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS LABORATORY (ITTL)

MICROELECTRONICS RESEARCH CENTER (MIRC)

PACKAGING RESEARCH CENTER

SENSORS AND ELECTROMAGNETIC APPLICATIONS LABORATORY (SEAL)

SIGNATURE TECHNOLOGY LABORATORY (STL)

ULTRAFAST OPTICAL COMMUNICATIONS CONSORTIUM (UOCC)

Georgia Research Alliance

The Georgia Research Alliance invests in research stars and their laboratories to stimulate business expansion in three strategic industry areas: biotechnology, environmental technologies, and telecommunications. There are 37 funded Eminent Scholar positions, 12 of them in telecommunications.

The Wall Street Journal reported that Georgia's approach to recruiting eminent scholars is the new definition of economic competition among the states and cited the Georgia Research Alliance as designing and managing a successful strategy.

The Georgia Center for Advanced Telecommunications Technology (GCATT) is a division of the Georgia Research Alliance. GCATT is a telecommunications technology development partnership of government, universities, and the advanced telecommunications industry.

> "Our association with Yamacraw will allow us to draw on research and development to offer new and exciting technology solutions to our customers. We also believe the partnership will help Star*Core grow its relationship with Georgia Tech, one of the leading universities in terms of DSP graduates and DSP research."
>
> *Jim Boddie, executive director*
> *Star*Core Technology Center*

Yamacraw Research Thrust 2 - Broadband Access Hardware

Leader: Joy Laskar, Ph.D.
Assistant Professor, Georgia Tech, School of Electrical and Computer Engineering
Co-Founder of RF-Solutions, Inc. (developer of high-volume broadband wireless products)
Co-Founder of Microwave Applications Group (Georgia Tech)
Wireless Thrust Leader at Packaging Research Center (Georgia Tech)

Research budget: $1.175 million for Year 1
13 faculty and 30 graduate student researchers from Georgia Tech
9 additional participating Georgia Tech faculty

Yamacraw Deliverables:
Development of design methodology and hardware prototypes for:

Integrated wireless interfaces for portable applications
High performance interfaces for communication infrastructure
in the following areas:
> Bluetooth - ubiquitous interface device connectivity
> Wireless LAN - in home wireless networks
> Frequency Wavelength Division Multiplexing - next generation optical networks

SOME OF GEORGIA'S LEADING SCHOLARS IN YAMACRAW-RELATED TECHNOLOGIES

JOHN A. COPELAND, PH.D.
DAVID R. HERTLING, PH.D.
NIKIL JAYANT, PH.D.
JOY LASKAR, PH.D.
JOHN O. LIMB, PH.D.
VIJAY MADISETTI, PH.D.
JAMES D. MEINDL, PH.D.
RONALD SCHAFER, PH.D.
RAO R. TUMMALA, PH.D.
CARL M. VERBER, PH.D.

Yamacraw Research Thrust 3 - System Prototyping

Leader: Nikil Jayant, Ph.D.
Professor, Georgia Tech, School of Electrical and Computer Engineering
Chairman of National Academies Committee on Broadband Last Mile Technologies
Director of the Georgia Tech Broadband Institute and Georgia Tech Wireless Institute
Created and managed the Bell Labs Signal Processing Research Department, Advanced Audio Technology Department, and Multimedia Communications Research Laboratory.

Research budget: $1.075 million for Year 1
13 faculty and 13 graduate student researchers from Georgia Tech
13 additional participating Georgia Tech faculty

Yamacraw Deliverables:
Create communication system prototypes to address the challenge of seamless broadband connectivity (especially for the 'last-mile' and 'last-meters' solutions in information access) such as:
> Gigabits-per-second wireless interface using automatic speech recognition for Internet dialog in the form of a multi-chip system on a board (SOC) or a system-on-a-package (SOP)
> Optical access network prototype for home and small office

1.2

Pipeline to qualified talent

It's easy to move people to Georgia.

It's even easier to get them to stay.

Georgia offers a growing economy with a wide range of career options and opportunities for professional growth(for spouses and partners, too. Top-ranked colleges and universities with education programs that allow employees to stay current and move ahead. A world of cultural and recreational offerings available in a climate that encourages play all year long.

The workforce that moves to Georgia joins homegrown talent to make Georgia the third fastest-growing state for technology jobs, according to the American Electronics Association. Georgia has added more than 45,000 technology jobs since 1990, and its high-tech payroll totaled nearly $7 billion in 1997.

Building on this wave of high-tech job growth in Georgia, Yamacraw is growing Georgia's broadband workforce.

Through Yamacraw, a network of professors at eight of Georgia's colleges and universities are collaborating to modify curricula to teach future employees what leading broadband employers need.

Yamacraw Goals:
> 2,000 additional computer and software engineering graduates by 2003
> Increase by 50 percent the number of computer, electrical and software engineers and computer scientists available to fill Yamacraw jobs

YAMACRAW UNIVERSITIES

ARMSTRONG ATLANTIC
STATE UNIVERSITY
GEORGIA INSTITUTE OF TECHNOLOGY
GEORGIA SOUTHERN UNIVERSITY
GEORGIA STATE UNIVERSITY
KENNESAW STATE UNIVERSITY
SAVANNAH STATE UNIVERSITY
SOUTHERN POLYTECHNIC
STATE UNIVERSITY
UNIVERSITY OF GEORGIA

The best students stay in Georgia because of HOPE —and 84 percent of them remain in Georgia to work after they graduate.

The Georgia HOPE Scholarship pays for full tuition and books at Georgia's public universities and technical schools, and partial scholarships at the state's private colleges and universities, for any qualifying Georgia resident. Since the program began in 1993, more than 440,000 Georgians have received $950 million in scholarships.

Because Georgia's best students now choose to attend college in Georgia, 1999 freshman SAT score averages have risen to about 1300 at Georgia Tech and 1200 at the University of Georgia.
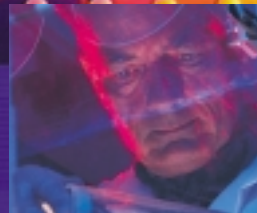
YAMACRAW'S NEW COURSES

EMBEDDED SYSTEMS DESIGN

FIBER OPTIC COMMUNICATIONS

SIGNAL PROCESSING

DIGITAL SYSTEM DESIGN

DATA COMMUNICATIONS AND NETWORKING

DATA STRUCTURES

NETWORKING

EMBEDDED REAL-TIME SYSTEMS

OBJECT-ORIENTED DEVELOPMENT

EMBEDDED SOFTWARE DEVELOPMENT

INTERNETWORK DESIGN

MICROCONTROLLER-BASED DESIGN

DESIGN OF OPERATING SYSTEMS

HARDWARE-SOFTWARE CO-DESIGN OF A PROCESSOR

PROGRAMMING EMBEDDED SYSTEMS

1.3 Access to further education and career

Yamacraw's continuing education courses and Yamacraw institutes provide ongoing training for broadband company employees.

Through Georgia's Intellectual Capital Partnership Program (ICAPP), Georgiaís public colleges and universities can expedite the education of knowledge workers to meet immediate workforce needs of expanding or relocating companies. The first ICAPP Company, Total System Services, Inc., estimates training and hiring cost savings of nearly $8,000 per employee hired.

Georgia's Quick Start program is nationally recognized for providing high-quality customized training services at no cost to new or expanding businesses in Georgia. Since 1967, Quick Start has trained more than 294,000 employees for more than 2,850 businesses and industries throughout the state. It has been singled out by Fortune, as well as Training and Site Selection magazines for its effectiveness in providing the most comprehensive and advanced training in the nation.

"Anytime, anywhere" online learning

Georgia G.L.O.B.E. offers instruction via technologies like the Internet to provide Georgians with "anytime, anywhere" online learning from Georgia's 34 public colleges and universities. Georgia employers can schedule work-related instruction at times and locations convenient to their employees.

YAMACRAW'S NEW CONTINUING EDUCATION COURSES (05/01/00)

RF/WIRELESS PRINCIPLES AND PRACTICE

LOW COST FLIP CHIP PROCESSING AND ANALYSIS

CMOS ANALOG INTEGRATED CIRCUITS

OBJECT-ORIENTED ANALYSIS AND DESIGN

OBJECT-ORIENTED PROGRAMMING WITH JAVA

MEMS BOOT CAMP

APPLICATION DEVELOPMENT IN JAVA

SOFTWARE REQUIREMENTS AND SPECIFICATIONS

PROGRAMMING PDAS

YAMACRAW'S NEW CERTIFICATE PROGRAMS (05/01/00)

EMBEDDED SYSTEMS (5 COURSES)

opportunities