

PRINCIPALS *of* Science

Behind the innovative products and services offered by the Corridor's high tech companies are the scientific minds that devised and developed them.

The Florida High Tech Corridor is home to hundreds of scientists, businessmen, medical specialists and communications professionals who are dedicated to pushing the envelope in fields that range from aviation to microelectronics and everything in between. Whether revolutionizing the medical education industry, creating custom security solutions for aerospace partners, or developing

microbes to produce biofuels, these 17 industry leaders are at the forefront of today's technological advancements.

Many of their stories are also available online at www.facesoftechnology.com, where short videos feature them speaking firsthand about how they're using today's technology to create tomorrow's breakthroughs.



“Opportunity is missed by most people because it is dressed in overalls and looks like work.”

—Thomas Alva Edison



“Those who cannot remember the past are condemned to repeat it.”

—George Santayana

Dan Macchiarella

Chair, Department of Aeronautical Science,
Embry-Riddle Aeronautical University

Embry-Riddle Aeronautical University (www.erau.edu) in Daytona Beach is the world’s foremost university dedicated to teaching the science, practice and business of the world of aviation and aerospace. Curricula and research cover the operation, engineering, manufacturing, marketing, and management of modern aircraft and the systems that support them.

Education: Ph.D. in Computing Technology, Nova Southeastern University

First Job: Second Lieutenant, Aviation, U.S. Army

The Future: Simulations for training will increase exponentially in the coming decades—huge opportunities for all.

Goal: To make flight simulations less expensive and more pervasively used throughout all segments of pilot training.

Advice: It is easier to succeed than to fail. If you fail, then you have to do it twice.

Choice of Field: Academia offers an opportunity to mentor students while meeting the needs of the community.

Catherine Strayhorn

CEO, IVIR Inc.

Sarasota-based Information Visualization and Innovative Research (IVIR) Inc. (www.ivirinc.com) is a medical education company that makes the invisible, visible. It utilizes innovative technology that is developed through educational objectives and provides training that can be measured and evaluated objectively.

Education: BS in Aerospace Engineering Technology, Kent State University

First Job: Design Engineer at Morse Controls in Hudson, Ohio

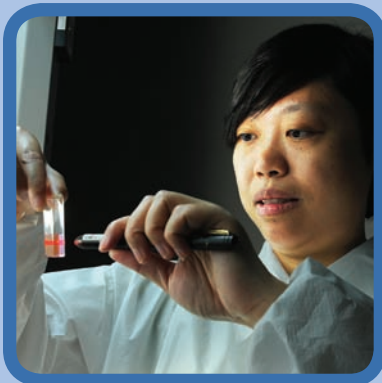
Best Read: *Manufacturing Engineering* by Jack Walker

The Future: Medical education will begin to push the technology envelope, demanding better

simulation and training tools that will allow surgeons to practice prior to actual surgery.

Goal: Develop a technology to replace live-tissue training that provides a positive experience.

“A-ha” Moment: Even though I am not a medical provider, I can provide tools to improve our healthcare system.



“You are who you believe you are.”

—College friend

Qun Huo

Founder and President, Nano Discovery

Orlando’s Nano Discovery (www.nanodiscoveryinc.com) develops new technologies and products for biomedical research and diagnosis using gold nanotechnology.

Education: BSc in Polymer Science and Engineering, University of Science and Technology of China; MS in Chemistry, Sun Yatsen University, China; Ph.D. in Chemistry, University of Miami

First Job: Assistant Professor

The Future: Nanotechnology will revolutionize the medical field in the near future.

Goal: To successfully commercialize a nanotechnology product that can be used for early cancer detection.

Choice of Field: We need better technology and products to battle malignant diseases, such as cancer, that greatly affect the quality of human life.



Abdul Lateef

CEO, Plasma-Therm

With more than 35 years experience focusing on customer support, innovation, reliability, and low cost of ownership, Plasma-Therm (www.plasmatherm.com) in St. Petersburg is a leading provider of advanced plasma processing equipment to specialty compound semiconductor markets.

Education: BS in Mechanical Engineering, University of Nebraska-Lincoln; MS in Material Science, University of Nebraska-Lincoln; MBA, University of Florida

Best Read: *Execution* by Bossidy and Charan.

The Future: Semiconductor technology will continue to penetrate more aspects of our lives and will significantly improve our quality of life. It will become a thing of the past to be surprised when you reach for the milk carton and find it empty. Your refrigerator

will know exactly what is running low and place an order to the store that automatically delivers it. Health monitoring will be done online in an unintrusive manner in which the patient does not have to put his life on hold to go to the doctor’s office for diagnostic tests. Tests will be integrated into our routine daily activities and results automatically sent to your doctor. Rather than spot checks for health, the concept of continuous monitoring will become real.

Advice: Do not let life’s unexpected events set you back.



Thomas Lyons

Principal Research Scientist, BioTork

BioTork LLC (www.biotork.com) in Gainesville uses experimental evolution to develop microbial strains for the purpose of making bio-fuels. These strains will improve the economics of biofuel production in such a way that biofuels can finally compete with and begin displacing fossil fuels.

Education: BA in Chemistry, Middlebury College; Ph.D. in Chemistry, University of California, Los Angeles; post-doctoral training in Genetics and Molecular Biology, University of Missouri, Columbia

First Job: Assistant Professor of Biochemistry, University of Florida

The Future: Industrial-strain development is a central limitation for improving the economics

of biofuel production. BioTork advocates that the best approach is to custom design microbes that can perform optimally under the conditions of the cheapest industrial process, rather than engineering an expensive process around the limitations of a particular microbe. BioTork has access to proprietary technology that allows the rapid and efficient development of microbes through experimental evolution.



Neil R. Euliano II

CEO, eTect

Gainesville's eTect (www.etectbio.com) develops a novel communication system that allows for battery-less communication from inside the body to outside the body. Our first product is a medication compliance system that allows pills to send out messages when they have been swallowed.

Education: BSE, MSEE, and Ph.D. in Electrical Engineering, University of Florida

First Job: AT&T Bell Labs

The Future: A tremendous growth in personalized medicine, including: smart pills that can dynamically monitor their environment to help improve their effectiveness; in-body systems that can both monitor and improve patient care (e.g., true closed-loop insulin delivery

for diabetics); and medicine and devices that can be tailored to individuals or tailor themselves to the individual patient.

Goal: In the short term, a smart phone that works right. In the long term, a way to enter data into a portable device that is as fast as a keyboard.

Advice: No matter how lucrative, do not work with people you don't get along with.

"Being ignorant is not so much a shame, as being unwilling to learn."

—Ben Franklin



“You work for yourself and not for your employer, so whatever you do, be the best at it.”

—Khoury’s father

Antoine Khoury

President, ApECOR

ApECOR (www.apecor.com) is a research and development company in Orlando that specializes in cutting-edge power electronics. It transforms power from all types of sources, such as battery, solar, and fuel cells into power that can be utilized by many different types of systems.

Education: BS in Engineering, University of Central Florida

First Job: Gas station attendant

Best Read: *Good to Great* by Jim Collins

The Future: Today we are seeing a shift from conventional power to alternative power, inspired by the awareness of the need to change for the future of our environment and fueled by the

renewable energy initiatives of our governments. Power electronics need to be more efficient to reduce wasted energy, have greater performance so we can push the boundaries of their capabilities, and cheaper to make new renewable systems more affordable for everyone. This is all causing the power electronics field to shift from what used to be a supportive role to an enabling technology and a field of its own.



John Walsh

President, Sypris Electronics LLC

Tampa’s Sypris Electronics (www.sypris.com) is a leading supplier of high-assurance security solutions and custom electronic products to the United States and to international governments, as well as to global aerospace and defense prime contractors.

Education: BSAAE, Purdue University; EMBA, St. Joseph’s University

First Job: Systems Engineer at Lockheed Martin in Sunnyvale, CA

Best Read: *The Art of War* by Sun Tzu

The Future: We see a continuous and elevated need for cyber security—securing government, industry and private/individual interests. There is a need to persistently protect information

systems, networks and the confidential and personal information that lies within these systems. The WikiLeaks incident has re-emphasized the recognition that all information has to be protected.

Goal: To establish a series of technology platforms that will act/enable security boundaries using encryption, key management, trusted architecture, and other leading technologies that will be cornerstones in protecting our critical infrastructure, national and personal interests.



“Be ashamed to die until you’ve won some victory for humanity.”

—Horace Mann

Nathaniel Quick

President, AppliCote Associates

Lake Mary’s AppliCote Associates (<http://applicote.com>) is a materials and process technology development company that makes the world a cleaner place by eliminating all toxins from the fabrication of electronic materials and devices.

Education: Ph.D. in Materials Science and Engineering, Cornell University

First Job: Eastman Kodak Research Labs

Best Read: *Creativity Revealed* by Scott Jeffrey and *How Successful People Think* by John C. Maxwell

Goal: Make it easy for our clients and partners to abandon dirty, expensive and inefficient manufacturing practices.

The Future: What’s very exciting is that we are creating a real platform for green manufacturing, cradle-to-cradle. The product being manufactured, itself, is not the only thing that needs to be green, but also the processes used to make it. We are using light (lasers) as a materials-processing tool. This gives us the capability of starting with very mundane and ordinary materials and turning them into very smart materials.



Leon Glebov

Vice President R&D, OptiGrate

OptiGrate Corp. (www.optigrate.com) in Orlando produces holographic optical elements inscribed inside of a glass plate that are used for precise laser beam control and fine spectroscopy. They enable a dramatic increase of power of laser systems and resolution of spectral analyzers.

Education: MS in Physics of Nuclear Dosimetry and Protection, Leningrad Polytechnic Institute; Ph.D. in Optics, State Optical Institute

First Job: Research scientist at a government laboratory in the USSR

The Future: Holographic optical elements will become one of the main components in the optical industry.

Goal: To make complex holograms in glass and move our technology to imaging optics and data storage.

Advice: After getting my MS degree, I wanted an engineering job. My dad told me that education must be first, so I entered the Ph.D. program. This was the basis of further success.

Choice of Field: The invention of lasers in the ‘60s inspired me to change my field to optics.



“We work hard so we can play hard!”

—Self

David Robinson

President, DSM

Lakeland’s DSM Technology Consultants (www.dsm.net) enables its customers to focus on their business rather than the technology infrastructure that runs it, and has built the largest inland managed data center network in Florida.

Education: BS in Electrical Engineering, University of South Florida

First Job: Delivering newspapers for the *Stars and Stripes* in Germany at age 11

Best Read: *Goedel, Escher and Bach* by Douglas Hofstadter and *Blink* by Malcolm Gladwell

The Future: Everything is converging to two panes of glass. Fixed and mobile glass powered

by information, applications, streaming video, and data distributed from data centers all over the world. The pane of glass is just your digital window to the world.

Goal: Never stop learning and growing; technology fuels this for me.

Advice: My father and uncle convinced me that I should start my own business while in college.



“If at first the idea is not absurd, then there is no hope for it.”

—Albert Einstein

Marco Carvalho

Research Scientist, Florida Institute for Human & Machine Cognition

The Institute for Human and Machine Cognition (www.ihmc.us), in Ocala, is a multi-disciplinary research institute focused on human-centered computing, which is about fitting technologies to people, and recognizing that the human is an integral part of the system.

Education: MS in Mechanical Engineering, University of Brasilia; MS in Computer Science, University of West Florida; Ph.D. in Computer Science, Tulane University

First Job: Research engineer, Federal University of Brasilia

The Future: I believe that we will see a growing attention to teamwork and mixed-initiative systems, where humans

seamlessly collaborate with automated software systems that are capable to adapt and evolve.

Goal: Develop new approaches to cyber defense and critical infrastructure protection. We have made great progress in mixed-initiative systems combining humans and automation, building systems that are self-defending, capable to learn and capable to work with humans as team members.



“Sometimes we do get taken by surprise. For example, when the Internet came along, we had it as a fifth or sixth priority.”

—Bill Gates



“Find a way.”

—Lon Kruger

Stephen Barker

President, Digital Frontiers Media

Digital Frontiers Media (www.digitalfrontiersmedia.com) is a multimedia production company based in Sarasota that develops eye-catching interactive media, national attention-getting websites using the “freakishly brilliant” Drupal framework, and custom programming solutions, including Augmented Reality (AR) and mobile apps.

Education: MA in Multimedia, California State University, East Bay

First Job: Water Quality Analytical Chemist

Best Read: *Emergence* by Steven Johnson

The Future: The use of AR solutions in more industrial settings and the alchemy of mobile apps interacting with

centralized open-source Web apps taking the place of large, costly proprietary Intranet solutions for large corporations.

Goal: To construct a large enough lab utilizing the latest interactive technologies to allow us to begin exploring applications that are currently only ideas.

Advice: Start your own business. I did. I’ll never look back.

Stan Van Meter

President, United Efficiency Inc.

Lake Mary-based United Efficiency is the developer of the life-saving tXtBlocker® service (www.tXtBlocker.com), which stops texting, e-mailing, facebooking and Web surfing when behind the wheel to keep people safe on the road.

Education: BS in Building Construction, University of Florida

First Job: Project manager in the civil construction industry

Accidental Discovery: Timing is everything—our first product was a device that trained drivers to achieve better fuel economy. We were at the peak of development as fuel prices were tumbling.

The Future: tXtBlocker will expand compatibility to 95 percent of commercially available mobile phones and be available to more than 4 billion consumers worldwide.

Goal: Simplification—I’m down to just one phone now.

Advice: Take a chance—if you don’t, nothing will happen.



“Keep your eyes on the stars, and your feet on the ground.”

—Theodore Roosevelt

Jim Donovan

CEO, TempTroll

TempTroll, a subsidiary of Donovan Industries Inc. (www.donovanindustries.com), is located in Tampa and conducts R&D and manufactures disposable, chemical heating and cooling products.

Education: BA in Management, University of South Florida

First Job: Salesperson for Fourdee Products

Best Read: *Good to Great* by Jim Collins

The Future: Chemical heating/cooling systems are evolving to the micro- and nano-tech levels of sophistication. Using these developing technologies, we

expect to be at the forefront of certain product categories.

Goals: Translate the discoveries made by our scientific team into real-world products that improve on what is currently available. Build a class organization that makes a difference in the lives of its customers and employees.

Advice: Don't look back. But sometimes I peek.



“It's better to light a candle than to curse the darkness.”

—Eleanor Roosevelt

Michael Siemer

President, Mydea Technologies Corporation

Orlando-based Mydea (www.mydeatechnologies.com) is like a 3-D Kinkos that helps both companies and individuals quickly design, customize and produce new product creations using the latest 3-D computer-aided design, 3-D printing and direct-digital manufacturing technologies.

Education: BS in Aerospace Engineering, University of Central Florida (UCF); MS in Mechanical Engineering, UCF

First Job: Ride & Show Engineer, Walt Disney World Co.

Best Read: *7 Habits of Highly Effective People* by Steven Covey

The Future: Consumer-driven product design; any individual,

regardless of their age or technical ability, will be able to create, produce, and sell their own products.

Goal: To establish a company that has numerous forms of direct-digital manufacturing.

Advice: Have passion for what you are doing or go find what you have passion for doing.



"If you've only done something once, then you haven't done it at all."

—Unknown

Christopher J. Reuter

Vice President of Science, Osprey Biotechnics

Osprey Biotechnics Inc. (www.ospreybiotechnics.com) in Sarasota, produces innovative microbial products for a wide variety of environmental, agricultural and industrial applications.


Education: Ph.D. in Microbiology and Cell Science, University of Florida

continually search for new approaches to dealing with challenges.

First Job: McDonald's

Advice: The best advice I took was from my family, to continue my education in pursuit of my Ph.D.

The Future: More and more, microbes will be the platform by which the majority of technological advances in our society are created.

Choice of Field: It was driven by my fascination with the complexity of microorganisms, from their molecular physiology to their impact on a global scale. 

Goal: In general, not to rely exclusively on those technologies that already exist, rather to

Central Florida's Polk County

Business Advantages:

- GEOGRAPHIC CENTER of the state
- In THE FLORIDA HIGH TECH CORRIDOR supported by THREE MAJOR RESEARCH UNIVERSITIES
- 10 UNIVERSITIES, COLLEGES, TECHNICAL SCHOOLS, and FLORIDA'S ONLY POLYTECHNIC UNIVERSITY
- Less than ONE HOUR'S DRIVE to TWO INTERNATIONAL AIRPORTS and the PORT OF TAMPA
- Extensive MULTIMODAL TRANSPORTATION SYSTEMS ensure easy access to FLORIDA'S 18 MILLION RESIDENTS and markets beyond
- 8.6 MILLION PEOPLE in a 100-mile radius

