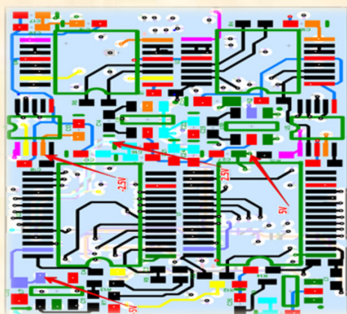


## Project Highlights

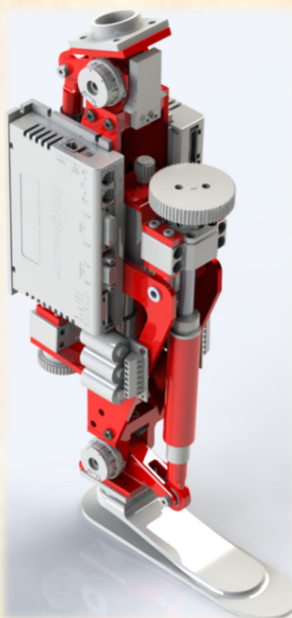
- Develop an audio signal processing system (including MCU, power management, and analog circuits, signal processing algorithms and system software) and deliver a series of circuit designs and 3D-printed speaker prototypes.



- Design and prototype a low noise, miniaturized (3cmx2cm) interface board supporting electroneuromodulator impedance spectroscopy studies on rodents.



- Develop a prosthetic leg design with high-torque motors, custom frames and elastic elements, and multi-stage high-efficiency transmissions that utilizes robot control theory to respond dynamically to the wearer's environment, enabling amputees to walk with the confidence and ease of natural locomotion.



## Who We Are

ARC leaders work with sponsors and UT Dallas faculty to focus University skills and resources toward project success and transition.



**Dr. Victor Fishman**, associate VP for applied research. **972-883-4583** or [victor.fishman@utdallas.edu](mailto:victor.fishman@utdallas.edu)



**Jeff Campbell** leads the ARC Electronics, Optics, and Materials initiatives. **972-883-2683** or [jeff.campbell@utdallas.edu](mailto:jeff.campbell@utdallas.edu)



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The Applied Research Center at The University of Texas at Dallas delivers prototypes, software, systems and engineering know-how to industry, government and faculty sponsors.



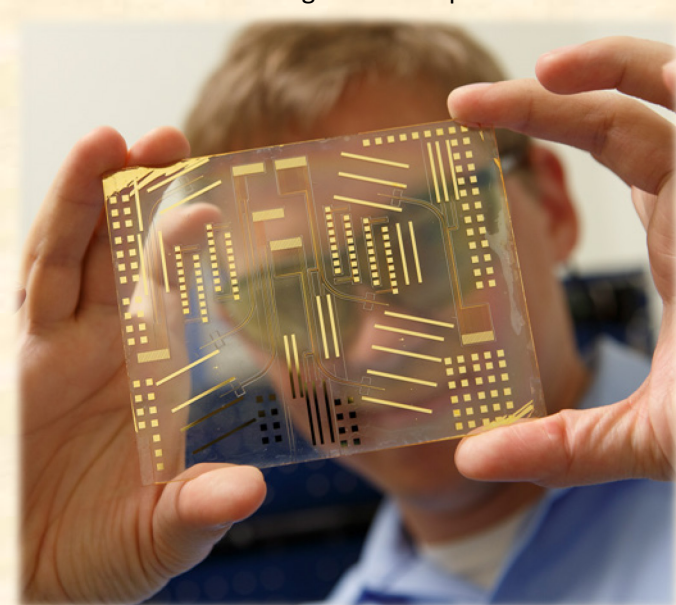


## What We Do

We love problems. The Applied Research Center (ARC) directly supports industry and government problem-solving, providing reach-back to faculty expertise and quickly bringing solutions through engineering to transition and integration.

- Professional staff of engineers, scientists and software developers
- Project-focused, transition-to-integration mindset
- Qualified Principal Investigators driven by budgets, schedules and deliverables
- Non-disclosure, research and partnership agreements are readily available
- International Trade in Arms Regulations (ITAR ) compliant framework and facility

The ARC is organized within UT Dallas with access to all University facilities and can provide introductions to facilitate partnerships directly with faculty. Projects are how we build lasting relationships.



## Laboratories

### **RF Testing and Device Characterization**

Device characterization supports the development of accurate models, optimizing the circuit design process and minimizing the number of design iterations. An active load pull test set built around a 67GHz PNA-X VNA and AMCAD pulsed IV power unit provides capabilities for a variety of tests ranging from pulsed and CW IV testing over large signal S-parameters to non-linear time domain measurements.

### **Information & Data Systems**

Addressing challenges in data analytics, networking and information security, including tools and technology for “Big Data” analytics, cybersecurity, cloud computing, and mobility.

### **Electronics, Optics & Materials (EOM)**

Development and implementation of solutions that support the transition of research in electronics, optical materials, devices and systems. EOM focuses on transitioning research by implementing concepts into initial design prototypes and solutions that support additional research efforts or a manufacturable product.

### **Life Sciences**

Development and implementation of healthcare solutions at the interface of technology and medical quality of life, including home diagnostics and telemedicine, prosthetics and exoskeleton control, and sensing devices for monitoring and treatment.

### **Power & Energy Systems**

Development and implementation of sponsor solutions to problems of renewable energy, wind farm optimization and power grid defense and security. Generation control systems, motors, wind tunnels and fault-resistance are key areas of contribution.

## Resources

State-of-the-art facilities and labs across the University provide a wide range of support for industry, government and faculty sponsors.

### **Circuit Design, Prototyping and Testing:**

- Simulation, PCB Layout Workstation/Software
- PCB Solder Assembly Stations
- SMT Pick and Place and Reflow Oven Station
- Electrical Test Stations (Network Analyzers, Noise Figure Meters, Power Meters)
- Environmental Testing Chamber
- Die Attach, Wire Bonder, Bond Pull Tester, Probe Station

### **Mechanical Design and Prototyping:**

- Additive Manufacturing (Digital Materials, 3D Printing)
- Full Suite CAD/CAM/FEA/CFD Workstations
- Machine Shop
- 5-Axis CNC Vertical Machining Center
- Water Jet Cutter
- CNC Lathe/Turning Center

### **High-Performance Computing Capable:**

- 320 Physical/640 Virtual Cores
- 4TB RAM
- >500TB Storage

### **Software Development Platforms:**

- Windows, Linux, OS X, Mobile
- .Net, C++, Python, Java, etc.
- Databases, SQL, MySQL
- Hadoop, R

### **Specialized Platforms:**

- Data Analytics
- Security
- Forensics