Stan A. McClellan, Ph.D. s.mcclellan@ieee.org

Work address: Texas State University 601 University Drive, Ingram 4314 San Marcos, TX 78666 (512) 245-4125 *Home address:* 9809 Woodpecker Rd Chesterfield, VA 23838 (214) 476–5583

OBJECTIVE

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The development of technologies & programs related to the efficient & secure creation, transmission, storage, and processing of information including design & optimization of systems which produce or use information, such as:

- Strategic Management of Intellectual Property
- Convergence of "Smart" Technologies & Business Models
- University / Industry Collaboration & Innovation
- Optimization of Computer / Network Architectures & Protocols
- Dynamic & Software-Defined Networks
- Signal/Image Processing, incl. Data Acquisition & Processing

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COVER LETTER / SUMMARY

This document is a career summary, description of work experience, list of presentations, publications, and funding summary, as well as references. It is essentially a cover letter combined with a CV.

My career has ventured between academic and industrial pursuits. As such, I have experienced the responsibilities of holding **leadership positions**, the privileges of working on **significant projects**, and the excitement of participating as an **academic researcher** and **technology entrepreneur**. Throughout these activities, I have maintained an active role in **professional service** as well as **consultancy**. These items are summarized below.

I have **primary expertise** in topics related to speech/image processing, distributed & autonomous system architecture, and optimization of IP-based networks under Quality of Service constraints. These areas include contemporary *"marketecture"* concepts such as the "Internet of Things" and "Smart Grid/Smart City" initiatives. I have authored many technical publications and US/International patents on these topics. I am often invited to contribute to well-known multidisciplinary reference volumes, and have published topical books or chapters in books including:

- Smart Cities in Application: Healthcare, Policy, & Innovation (Springer, 2019)
- The Smart Grid as an Application Development Platform (Artech House, 2018)
- Smart Cities: Applications, Technologies, Standards, & Driving Factors (Springer)
- Advances in Computers (Elsevier)
- The IEEE/CRC Electrical Engineering Handbook (IEEE Press)
- The Encyclopedias of Electrical & Electronics Engineering (Wiley)
- Lecture Notes in Pure & Applied Mathematics (Marcel Dekker)
- Medicine Meets Virtual Reality: Global Healthcare Grid (IOS Press)

Currently, I am the **Director** of a large-scale partnership with Jacobs Technology Group and NASA's Johnson Space Center (JSC). The **JSC Engineering, Technology and Science Program (JETS)** provides multidisciplinary facilities and expertise to design, implement, test, and analyze technologies & applications with direct bearing on space flight and extraterrestrial reconnaissance. The JETS program creates fully-loaded revenue exceeding \$1M/yr and involves multiple students, faculty, and NASA experts in relevant projects.

Additionally, as **co-Director** of the Texas State University (TXST) "**Connected Infrastructure**" initiative for Education, Demonstration, and Research (CIEDAR), I engage with industry partners to recruit members, define projects, and manage outcomes for a value-driven, multi-disciplinary consortium. The CIEDAR Consortium is a research, development, and demonstration testbed facility associated with the university's small business and startup company incubator, and is funded via appropriation from the State of Texas for long-term workforce development, economic stimulation, and technology validation.

The **JETS Program** and the **CIEDAR Consortium** have implications in several market verticals and social imperatives, including "*Smart*" and "*Connected*" devices, systems, applications, and other contemporary engineering issues in modern society as well as space exploration. These imperatives include energy & water management, "Internet of Things" implementations in various areas (e.g. agriculture and endangered species), technology optimization for municipal applications, and reconciliation of the "digital divide."

Recently, as **Professor** (2008-present) and **Director** (2013-2018) of the Ingram School of Engineering at TXST, I performed typical research, teaching, and academic administrative duties, including:

- Managing & mentoring academic & technical personnel, including tenure-track faculty members in Electrical, Computer, Industrial, Manufacturing, and Civil Engineering,
- Overseeing departmental budgets, expenditures, & endowments, and developing new academic buildings & research facilities,
- Directing the development & implementation of new academic programs at the graduate and undergraduate levels,
- Cultivating value-driven industrial partnerships, and developing relationships between multi-disciplinary programs to enhance research outcomes.

Previously, I held **executive leadership positions** in companies large and small. These positions were primarily focused on the high-tech computer networking, telecommunications and aerospace & defense sectors. A few previous leadership positions have included:

- Distinguished Technologist & Technical Director (Hewlett Packard/Compaq)
- Chief Technology Officer & Co-Founder (Power Tagging Technologies)
- Chief Architect & Vice President of Business Development (ZNYX Networks)
- Lead Systems Engineer & Principal Investigator (General Dynamics)

Throughout my career, I've been privileged to participate in several **significant projects**. These activities span vertical markets including aerospace & defense programs, medical electronics & automation systems, development of new academic programs, and successful launch of a startup company in the "Smart Grid" space. A few of the more interesting projects include:

- Developed & successfully commercialized a revolutionary approach to Smart Grid communication, asset control, geolocation, & distributed voltage optimization to enable resilient power management for "Smart Cities" (\$20M+ startup investment).
- Designed two robotic imaging & diagnostic appliances for remote, intra-operative surgical consultation & automated cancer diagnostics with real-time doctor-in-the-loop control; and managed full clinical trials for both systems (\$3M+ research funding).
- Flight tested & improved the Digital Terrain System for the AFTI/F-16 fighter aircraft to enhance situational awareness & enable automated maneuvers during pilot blackout (\$7M+ program funding).
- Developed real-time 3D flight simulators using reconnaissance imagery, photogrammetric techniques, and measured/derived elevation data to enhance pilot training (\$10M+ program funding)
- Created architectural concept & managed design & construction of multidisciplinary Engineering & Science Building named "Ingram Hall" (\$120M construction envelope).

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- Architected & deployed large-scale telecom networks & systems conforming with industry standards, including a regional implementation of *Internet2*.
- Designed & implemented an innovative, multidisciplinary graduate program combining Engineering, Science, Business, & Applied Arts (\$7M+ budget).

As an **academic researcher**, I have successfully obtained and managed well over \$15M in grants & contracts from federal entities including the National Science Foundation (NSF), the National Institutes of Health (NIH), the National Institute of Science & Technology (NIST), and the National Aeronautics & Space Administration (NASA). I have also secured substantial funding from commercial partners including Cisco Systems, Agilent Technologies, Texas Instruments, Jacobs Engineering, 3Com, Bellsouth Telecommunications. Additionally, I have facilitated and secured donations from corporate partners in the form of financial support for research and in-kind equipment & software in excess of \$3M.

As a **technology entrepreneur**, I have secured over \$20M in equity and startup funding from industrial sources including Dominion/VDI, Lockheed/AstroLink, and others, as well as federal sources including NSF and NIH Small Business Innovations Research programs (SBIR). I have also participated in the acquisition of over \$10M+ in debt-equity financing from private venture firms.

As an active **professional consultant**, I have provided technology & business consulting services for multiple entities including Dominion Virginia Power, AT&T Mobility, Alcatel-Lucent, American Express, Research In Motion, F5 Networks, Nortel Networks, Bellsouth Telecommunications, MCI/Worldcom, & LSU Medical Center.

I am active in **professional service**, and have served on numerous conference and industry program advisory boards, or have developed sessions/tracks at well-known international conferences. Recent conferences and programs include The Energy Thought Summit, IEEE Global Communications Conference (GLOBECOM), IEEE Int'l Conference on Communications (ICC), IEEE GreenTech, IEEE Smart City Summit, Ethernet Technology Summit, Server Design Summit, Int'l Conference on Digital Telecom (ICDT), and the IEEE Computer & Communications Workshop.

EDUCATION

8/95 Docto Electri	r of Philosophy cal Engineering	Texas A&M University College Station, TX	
Thesis Adviso GPA	"Variable Rate Speech Coding Using Subband Meas r Dr. J. D. Gibson 3.9/4.0	sures of Spectral Flatness"	
5/91 Maste Electri	r of Science cal Engineering	Texas A&M University College Station, TX	
Thesis Adviso GPA	"Data Compression Using Inverted Block Codes" r. Dr. J. D. Gibson 3.5/4.0		
5/86 Bache Electri	lor of Science cal Engineering	Texas A&M University College Station, TX	
GPA	3.7/4.0 (magna cum laude)		
PROFESSIONAL EXPERIENCE			

2014–now	Office of Research & Sponsored Programs	Director, JETS Program
	Texas State University	

Key Accomplishments:

- Developed relationship and large-scale research funding program with Jacobs Engineering and NASA's Johnson Space Center (JSC).
- Establishing TXST as a "JETS Partner" organization for engineering & technical support of JSC.
- $\circ\,$ Secured multiple fully-loaded Task Orders amounting to over \$10M in overall program funding.
- Oversaw student, faculty and technical personnel interfacing with NASA personnel, working on important projects, accomplishing significant outcomes, and securing part-time and full-time employment.
- Managed contract and business relationships, including organizational architecture, personnel advancement, and ongoing programmatic / interface issues.
- 2019–now Materials Applic. Research Center co-Director, Connected Infrastructure Texas State University

Key Accomplishments:

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- $\circ\,$ Developed relationships with key industry partners, establishing "Smart City" research & development facilities.
- $\circ\,$ Managed contract and business relationships, including personnel and organizational structure issues.
- Participated in design, deployment, and evaluation of specialized facilities, including FCC-licensed private 5G/LTE wireless network to support research activities.

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