

VITA

Michael Georgiopoulos

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VITA

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EDUCATION

Diploma in Electrical Engineering, June 1981, National Technical University of Athens, Athens, Greece.

Master of Science in Electrical Engineering, December 1983, University of Connecticut, Storrs, CT.

Ph.D. in Electrical Engineering, December 1986, University of Connecticut, Storrs, CT.

WORK EXPERIENCE

May 2013 – Present: Dean of the College of Engineering and Computer Science, University of Central Florida, Orlando, FL.

July 2012 – May 2013: Interim Dean of the College of Engineering and Computer Science, University of Central Florida, Orlando, FL.

September 2011 – June 2012: Interim Assistant Vice President of Research, Office of Research and Commercialization, University of Central Florida, Orlando, FL.

October 2015 – Present: Professor in the Department of Electrical and Computer Engineering, University of Central Florida, Orlando, FL.

August 2010 – September 2015: Professor in the Department of Electrical Engineering and Computer Science (ECE Division), University of Central Florida, Orlando, FL.

November 2005 - August 2010: Professor in the School of Electrical Engineering and Computer Science, University of Central Florida, Orlando, FL.

December 2003 - October 2005: Professor in the Department of Electrical and Computer Engineering, University of Central Florida, Orlando, FL.

March 2002 - November 2003: Professor in the School of Electrical Engineering and Computer Science, University of Central Florida, Orlando, FL.

November 99 - February 02: Associate Professor in the School of Electrical Engineering and Computer Science, University of Central Florida, Orlando, FL.

August 1992 - October 1999: Associate Professor in the Electrical and Computer Engineering Department, University of Central Florida, Orlando, FL.

December 1986 - August 1992: Assistant Professor in the Electrical Engineering Department, University of Central Florida, Orlando, FL.

September 1983 - December 1986: Research Assistant and Lecturer in the Electrical Engineering Department at the University of Connecticut, Storrs, CT. Research involved the development of random access algorithms in multi-user communication systems for spread spectrum and non spread-spectrum environments. Courses lectured: Information Theory.

September 1981 - August 1983: Research and Teaching Assistant in the Electrical Engineering Department at the University of Connecticut, Storrs, CT. Research involved the design of random access algorithms for multi-user communication systems. Courses taught: Signals and Systems.

PROFESSIONAL MEMBERSHIP

Senior Member of the IEEE, Computational Intelligence Society.

Senior Member of the IEEE, Systems Man and Cybernetics Society.

HONORS AND AWARDS

1981, Pre-Doctoral Fellowship, University of Connecticut, Storrs, CT.

1991, Outstanding Researcher of the year, Electrical Engineering Department, University of Central Florida.

1992, Engineer of the Year, COM/VT Chapter, IEEE Orlando Section.

1993, Outstanding Researcher of the year, Electrical and Computer Engineering Department, University of Central Florida.

1994, Engineer of the Year, SRC Chapter, IEEE Orlando Section.

1995, College of Engineering TIP (Teaching Incentive Productivity) Award.

2000, IEEE Orlando Section Engineering Educator of the Year.

2000, College of Engineering and Computer Science TIP (Teaching Incentive Productivity) Award.

2005, College of Engineering and Computer Science TIP (Teaching Incentive Productivity) Award.

2005, College of Engineering and Computer Science RIA (Research Incentive Award).

2001-2009 Martin/St. Laurent Professorship, College of Engineering and Computer Science.

2002-2003, CECS Distinguished Lecturer Award.

2006-2007, CECS Outstanding Undergraduate Teaching Award.

2009-2010, UCF Undergraduate Student Mentor of the Year Award

2008 ORC Millionaires' Club Inductee

2009 ORC Millionaires' Club Inductee

2009-2010, Scholarship of Teaching and Learning (SoTL) Award

2010-2013 (re-appointment), Martin/St. Laurent Professorship, College of Engineering/Computer Science

2010, UCF Pegasus Award

2011, College of Engineering TIP (Teaching Incentive Productivity) Award

2012 ORC Millionaires' Club Inductee

2013 ORC Millionaires' Club Inductee

2014 Inducted in the UConn Academy of Engineering

ADMINISTRATIVE ACTIVITIES

Here, administrative activities and accomplishments as the CECS Dean, Interim Dean, Interim Assistant VP of the Office of Research and Commercialization, EXCEL Program Director, and Graduate Coordinator of the EE and CpE programs are provided.

The Dean's efforts (May 2013-Today) are articulated in two different ways, *Way 1*: A year-to-year activities (2013-2014, 2014-2015, 2015-2016, 2016-2017) and *Way 2*: Activities that span multiple years from 2017 to today.

CECS Dean (May 2017 -Today)

2017+ Activities

Introduction: CECS's strategic plan (SP) has as its vision the College to be amongst the nation's top producers of engineering and computer science workforce talent and to advance research and education that impacts the global society. UCF's Strategic plan (SP) has four priorities (Student Success and Well-Being (P1), Discovery and Exploration (P2), Community and Culture (P3), Innovation and Sustainability (P4). CECS's strategic plan, strongly correlated with UCF's strategic plan (SP), has 5

goals (A Better and Bigger Research Enterprise (G1), Enhance the Quality and Quantity of Graduate Studies (G2), Grow and Develop Faculty (G3), Enhance the Undergraduate Experience (G4), Become Nation's Technology Partner Leader (G5). In the following, we provide select College's/Dean's activities (accomplishments) and connect them with CECS's goals, UCF' SP priorities and related metrics, outlined in the plan.

Student Numbers, Diversity, Student Success (G2, G4, P1): CECS's undergraduate student population has increased consistently in the last five years (Fall 18 to Fall 22) from 10,181 (Fa 2018) to 11,539 (Fa 2022), a 13.3% increase. CECS's graduate student population has increased consistently in the last 5 years from 1,691 (Fa 2018) to 2,006 (Fa 2022), a 18.63% increase. The FTIC admission standards have been consistently high. The CECS student population is strongly diverse (43% minorities in the undergraduate population, 38.4% minorities in the graduate population). UCF Honors students has 2,379 scholars of which 39.4% are CECS students (2022-2023 Honors at a Glance). The Fall 2022 cohort of Honors students consists of 503 scholars with an average SAT of 1473, average ACT of 32.3, average GPA of 4.520, of whom 79 are National Merit Scholars, 164 are Provost Scholars and 47 are Burnet Medical Scholars. Of these Fall 2022 Honors cohort (503 students) 232 are CECS students (more than 46%). Typically, a high number of National Merit Scholars and Provost Scholars (more than 40%) are CECS students. All these Honors facts point to the high quality of CECS students. The UCF Programming Team has made the World Programming Finals in each of the last 11 years (20,000 teams around the globe compete for one of the 125 spots in the World Programming Finals; 2017 US champion; 2018 North America champion (student success)). UCF's Cyber team has won the national cyber defense championship five times (2014, 2015, 2016, 2021, 2022), came second three times (2018, 2019, 2020) an unprecedented feat (student success). The EXCEL program (its purpose it to increase students' success of STEM FTICs whose Math SAT is in the 2nd and 3rd quartile of UCF FTIC's) has improved STEM graduation by 49% compared to a control group (student success). In each of the last 5 years CECS faculty publish (on average) approximately 8 journals + conferences annually; CECS Ph.D.'s are co-authors of a sizable portion of these journals and conferences (student success).

Degree Productivity, Student Success (CECS Vision, G2, G4, P1): Academic year 2021-2022 was the most productive year ever for the College of Engineering and Computer Science, with record numbers of BS degrees (2,094), MS degrees (449), Ph.D. degrees (149). In 21-22, CECS produced the 10,000th MS degree and the 2,000th Ph.D. degree. The BS degree productivity in CECS has increased from 1,381 (17-18) to 2,094 (21-22), a 51.63% increase. The MS degree productivity in CECS has increased from 401 (17-18) to 449 (21-22), a 11.97% increase. The Ph.D. degree productivity in CECS has increased from 100 (17-18) to 149 (21-22), a 49% increase. According to the latest ASEE (American Society for Engineering Education) data (20-21-degree productivity) CECS is ranked number 10 in the nation (amongst all engineering and computer sciences colleges) in the number of BS degrees (1,926) produced, is ranked number 2 in the nation in the number of BS minority degrees (603) produced, is ranked number 23 in the nation in the number of BS women degrees (369) produced. Furthermore, CECS is No. 2 in the nation in the number of Aerospace Engineering degrees awarded (206), No 3 in the nation in the number of Computer Science degrees awarded (687), and No. 3 in the nation in the number of Mechanical Engineering degrees (445) awarded. It is likely (looking at the numbers) that with the 21-22 degrees that CECS produced, it will still be ranked in the top 10 in the nation in the number of BS degrees produced, when the 21-22 ASEE report comes out. It is also likely (looking at the numbers) that CECS will also be ranked 2 in the number of BS minority degrees produced, when the 21-22 ASEE report comes out. These two predictions are based on the observation that that the number of CECS BS degrees and the diversity of the incoming UCF student population have been consistently increasing. CECS's sustained, strong degree productivity is a testament of student success.

UCF has been ranked (6 years in a row), by Aviation Week, as the No. 1 nationwide producer of workforce talent for the Aerospace and Defense industry, partially owed to CECS's strong degree productivity and student quality. In Aviation Week's last published report, Aerospace and Defense companies ranked the quality of the students from UCF as No. 2, nationwide, behind only Georgia Tech (ranked No.1 in student quality). We survey our students six months after they graduate. The employability results are strong: For the 18-19 graduating cohort (pre-COVID) 88%+ of BS students, 90%+ of MS students and 92%+ of the Ph.D. students were employed, six months after graduation.

Growing our Faculty, Research and Graduate Enterprise, Enhance Student Experience (CECS Vision, G4, G1, G2, G4, P1, P2): During the 2015-2018 timeframe UCF supported FCIs (Faculty Cluster Initiatives) and recruited the bulk of the FCI faculty. Proposals were entertained by the Central Administration in two different cycles (90 approximate proposal submissions), of which UCF funded 9 efforts (Biiionix; Security and Privacy; Disability, Aging and Technology; Genomics and Bioinformatics; Learning Sciences; Renewable Energy and Chemical Transformation (REACT); Resilient, Intelligent and Sustainable Energy Systems (RISES); Sustainable Coastal Systems; Violence Against Women). It is of note that CECS has strong participation in eight of these nine clusters (underlined ones). In September 2021, UCF through the SIP (Strategic Initiative Program), entertained proposals for the Academic Excellence Fund (60 proposals were submitted). Of these proposal ideas, UCF funded 6 ideas: Infectious Disease and Travel Health, Knight's Digital Twin, Space Education and Industrialization, Zero-Carbon Energy Economy and Society, Artificial Intelligence, Next Generation Computing Hardware. It is also of note that CECS has a strong participation in all the funded efforts, leads two, co-leads two others. In the Summer of 2022, after the FL Governor signed the budget, a pot of funds was made available to UCF (referred to as Operational Excellence (OE) Funds) to support select areas of STEM strength. This funding was made available because of an LBR (Limited Budget Request) proposal that CECS spearheaded with strong support from Central Administration and other units on campus. This funding was made available because of the strong advocacy of its merits to the legislature by UCF's President, Provost and VP of Legislature and Community Relations. As a result of the OE funds, CECS-other Colleges/units have received faculty lines under several initiatives: Semiconductor; Space Engineering, Science, Aerospace, Hypersonics; AI, Machine Learning; Energy; Optics and Photonics; Cybersecurity; Digital Twin. It is also of note that CECS has strong participation in six of the seven initiatives (the underlined ones) supported by the OE funds. Because of SIP funds and OE funds CECS is expected to hire 50+ faculty in the next 2-3 years. It is of note that a good number of these hires (SIP, OE) have a strong interdisciplinary focus. It is also important to note that CECS, because of the quality of the ideas that were spearheaded from its faculty, in collaboration with other colleges and units, has had and continues to have significant participation in the FCI hires and the expected SIP, OE hires. FCI has helped CECS significantly expand its research productivity, grow the research, graduate enterprise, grow and develop its faculty and enhance the undergraduate experience. The expected CECS hires with SIP and OE funds are also anticipated to attain similar good results.

Other Operational Excellence (OE) Funded Efforts (G2, G3, G4, P1, P2): The Operational Excellence (OE) funds are supporting/will support (recurring support) other initiatives, such as: UTAs-ULAs (supported with HERFF funds during the COVID years, supported with CECS funds in 21-22, will be supported with OE funds (~\$400k) after 21-22), EXCEL Program (\$500k support; to expand its impact from 400 students annually to 800 students annually), increased GTA stipends by \$5k each (\$2.5k funded by OE, \$2.5k funded by CECS; partially implemented in Spring 2023; fully implemented in 2023-2024 and beyond), increased number of GTAs (starting in Fall 2023; the exact number is 28).

CECS Virtual Seminar Series (G1, G4, G5, P2, P3): Per the suggestion of Subith Vasu (MAE professor) CECS started (in May 2020) the CECS Virtual Seminar Series. CECS Virtual Seminar Series entertains in a 1-hour time slot, 10-minute presentations of CECS/UCF faculty that showcases the research that they are conducting, are experts of. CECS Virtual Seminar Series also entertains guest speakers from industry or government that talk about the core business of their organization and their existing or potential collaborations with UCF. The primary purpose of this series is to showcase the research of CECS/UCF faculty to internal stakeholders (other UCF faculty, UCF administrators) and external stakeholders (industry, government, alumni) with the intent of expanding collaborations of faculty within UCF and collaborations with external stakeholders. Furthermore, presenter faculty can use the recorded 10-minute presentations for other purposes (communicate their work to program managers (PMs), undergraduate and graduate students that are interested in working at their labs, other purposes). Since its inception (May 2020) until now (December 2022), the CECS Virtual Seminar Series entertained 300+ presenters and attracted audiences from approximately 50 people to approximately 200 people. We had a variety of guest lecturers (25+ presentations) from industry (e.g., Lockheed Martin, L3Harris, Mitsubishi Power) and government (Bindu Nair, Director of Basic Research at the Department of Defense), as well as presenters from other colleges/units (50+ presentations). CECS Virtual Seminar Series provides a good service to our faculty (to more easily establish collaborations) and communicates the research that is conducted at UCF (succinctly) to internal and external stakeholders.

Diversity Initiatives (diversity and inclusion are important components of the UCF SP and the CECS SP): CECS is educating a significant portion of underrepresented minorities in its undergraduate and graduate student populations (43% minorities in the undergraduate population, 38.4% in the graduate population). CECS, according to the ASEE (20-21 data) is No. 2, nationwide, in the number of minority degrees that it produces (603), No. 23, nationwide, in the number of women degrees that it produces (369). CECS with COS co-founded the EXCEL program (initiated in 2006 through an NSF grant, institutionalized by UCF in 2012). The EXCEL program has impacted, throughout the years, more than 5,000 STEM students (last 5-year average of EXCEL cohorts comprise of 45% minorities, 43% women) with impressive results (49% higher STEM graduation rate for the totality of the EXCEL population; also valid for Hispanics and women). EXCEL supports the GEMS/WISE programs that focus on mentoring STEM freshmen and sophomore women students. GEMS/WISE has consistently (since 2010; except one year) reduced the first-year STEM retention gap between EXCEL female and EXCEL male students (first-year female retention was lagging male retention, at the inception of the program, by 15%). GEMS/WISE has received a ~\$800k donation from NGC (Northrop Grumman Corporation) Foundation to expand its activities. Several S-STEM programs (NSF scholarship programs that support academically talented and financially challenged students; high percentages are minorities) have been funded with CECS faculty PI-ship (e.g., YES (2018-2014; \$600k), CAMP-YES (2014-2019; \$600k), Flit-Path (2016-2022; \$5M collaborative with FIU, USF), Flit-GAP (2021-2026; \$5M collaborative with FIU, USF). CECS is one of two colleges at UCF that has an Office of Diversity Initiatives with a good number of activities under its purview. Some of these activities are coordinated with the Career Services Office and the student orgs (e.g., SHPE, NSBE, SWE). CECS, through the iSTEM (Initiatives in STEM) office, supports several outreach activities (STEM Day, CAMP Connect, Programming, Competitive Programming, Cyber Camp); a number of these activities serve the K-12 student population in our vicinity that is highly diverse. CECS, with NAE involvement (2 are women, one is a person of color), supports mentorship of its faculty (primarily junior faculty, a good number of them women).

ABET Accreditation (G4, P1): CECS programs were scheduled for an ABET visit in Fall of 2020. The visit was delayed because of COVID and occurred (virtually) in February 2021. In August 2021, we received the final statement from ABET for both the CAC (Computer Science and Information Technology) and EAC (Aerospace, Civil, Computer, Construction, Electrical, Environmental, Industrial, Mechanical and Photonic Science and Engineering) programs. All programs were fully accredited until September 2027 (next regular cycle), the longest possible accreditation that can be awarded to engineering and computer science programs. In October 2022, we were also visited by ABET for the newly established MSE undergraduate program (approved by BOG for Spring 2020). ABET visitors identified two weaknesses for the MSE program. These weaknesses are expected to be resolved by Spring 2023 (MSE and CECS are working towards this goal) and we expect (by Summer 2023) MSE to be fully accredited until September 2027 (next regular cycle).

Partnerships (G1, G2, G3, G4, G5, P1, P2, P3): CECS has already established, is expanding partnerships with external stakeholders. Most partnerships have three components, *Research; Workforce Development; Branding/Communications*. Examples of these external stakeholders with whom we have established/expanding partnerships include but are not limited to: (A) Lockheed Martin (have established for a number of years now a strategic partnership based on our past successful history with CWEP (College Work Experiences Program; supported 500 interns before COVID, 300 recently), the LM Cyber Innovation Lab (supports consistently the Collegiate Cyber Competition (C3) team, a sustainably, impressively successful team), the internal R&D/external contracts that LM awarded/collaboratively pursued with UCF), (B) Mitsubishi Power (in 2022 coordinated a CECS Virtual Seminar Series (Fireside Chat) of the UCF president (Alex Cartwright) and Mitsubishi Power (Bill Newsom), followed-up with a Symposium on Decarbonization and Hydrogen (September 2022) that involved Jennifer Wilcox (Principal Deputy Assistant Secretary, DoE), the two presidents and two panels of experts that debated the future of hydrogen in a decarbonized society), (C) Northrop Grumman Corporation (the strategic relationship started in Fall 2022 with structured discussions (monthly) involving research, workforce talent development, branding and communication; received an ~\$800K support from NGC Foundation for the Women in Technology programs (GEMS/WISE) that Melissa Dagley leads), (C) Siemens Energy (have a 20 year relationship that involves research funding, the establishment of the Siemens-Energy Center, fellowships for graduate students, branding of labs, support of many interns; recently (November 2022) initiated a re-energization of this relationship that involved a meeting of President Alex Cartwright and Rich Voorberg, President of Siemens Energy of North America. There is a lot that can be said about each one of these partnerships but maybe a deeper dive in to the CWEP program supported by LM suffices. Career Services and CECS were involved in the write-up of a new five-year CWEP contract with LM that was signed a year or so ago. The new contract called for a more frequent interactivity of the UCF and LM partners to discuss the progress of CWEP. As part of the new contract UCF has implemented a student filtering system that provided to LM program managers (PMs) a streamlined approach to interview the appropriate candidates for each internship opportunity. Some of the specifics of the CWEP are: *Top Majors:* Business/Finance, Mechanical Engineering, Computer Science, Electrical Engineering, Computer Engineering, Industrial Engineering. *Numbers/Demographics (before COVID):* Total Students in one-year (18-19): 800+; Total Students at any time (18-19): 500+; STEM Students (18-19): 68%; Business Students (18-19): 27%; Minority (Overall) Students (18-19): 27%; Female (Overall) Students (18-19): 35%. *Numbers/Demographics (after COVID):* Total Students at any time (21-22): 200+; STEM Students: 65%; STEM Female Students (21-22): 27%; STEM Minority Students (21-22): 50%; Business Students (21-22): 34%; Business Female Students (21-22): 46%; Business Minority Students (21-22): 41%; Female (Overall) Students (21-22): 35%; Minority (Overall) Students (21-22):

48%. Hiring Results: Many Hires in each year; High Percent STEM Hires; Very High Percentage Stay in FL; High Performance, Low Attrition; Hires are Highly Diverse. According to the latest CWEP numbers available to us the number of interns reached 300. We expect that the CWEP program will continue strong, providing internship opportunities for UCF students and the good possibility of a follow-up employment with LM or other employers.

Growing the Research, Graduate Enterprise, our Faculty, Enhance Student Experience (G1, G2, G3, G4, P1, P2): The College has seen an increase in research awards, in the last 10 years, from \$22.89M (FY 13) to \$54.4M (FY 22), an increase of 137.7%. The highest (ever) funding year is FY 22. The best performing years were FY18, FY 19, FY 20, FY 22. The number of T/TE faculty in CECS have increased, in the last 10 years, from 121 (FY 13) to 168 (FY 22), a 38.8% increase. Hence, the increased funding performance of CECS faculty is more than 3.5 times higher than the increase in the number of faculty. It is of note that in FY 22 the number of research awards per faculty is \$323k, the best annual performance ever in the last 10 years. The CECS growth in the funding productivity is a result of strong faculty hiring cycles (2015-2018) and the increased funding performance of CECS faculty (senior faculty, junior faculty that have had the time to establish their research portfolio). CECS and UCF now find themselves at the beginning of new, strong hiring cycles (SIP funds, operational excellence (OE) funds) resulting in justified optimism that CECS/UCF research funding productivity will attain another big upward jump.

Growing our Faculty, the Research (G3, G1, P2, P3): CECS has hired a good number of faculty in 2015-2018 through funds provided by the Central Administration (including FCI funding). One of the awards that these faculty aspire to receive is the NSF CAREER award, the most prestigious early career award bestowed by NSF. UCF had three great years of NSF CAREER award winners, 12 in 2020, 5 in 2021, 8 in 2022 for a total of 25 awards in the last three years. Of these CAREER awards, CECS faculty have won 7 in 2020, 4 in 2021 and 7 in 2022 for a total of 18 awards in a three-year span. The number of CAREER awards in 2020 (12) placed UCF No. 6, nationwide, in the number of CAREER awards received. Furthermore in 2020, CECS CAREER awards (7) were the most awards received by any institution in Florida. It is of note that CECS, led by the OR (Office of Research), has a well-structured program that helps UCF researchers in their pursuit of an NSF CAREER award.

Select Dean's Efforts (impacts all CECS goals and all UCF priorities): CECS competed aggressively for FCI (Faculty Cluster Initiatives) funding and ended up participating in eight of the nine FCIs that were funded; FCIs provided funds for faculty hires in CECS and other colleges/units. CECS competed aggressively for SIP (Strategic Initiative Program) funding and ended up participating in all six SIPs that were funded; SIPs provided funds for faculty hires in CECS and other colleges/units. CECS was the primary writer, with strong support from Central Administration and other units, of the LBR (Limited Budget Request) to the legislature, which resulted (with the President, Provost and the Vice President of Government and Community Relations leadership) in Operational Excellence (OE) funds provided to UCF. The OE funds are now supporting seven faculty hire initiatives (in line with the SIP initiatives) and many student-success programs. CECS is participating in six out of the seven OE faculty hiring initiatives and most (if not all) of the funded student success programs. CECS, under my direction and support from CS, ECE, other CECS units, competed successfully for the BOG grant (2014-2018) to increase the number of degrees in CS, IT and CpE. The results were impressive: (A) CECS has increased the CS, IT, CpE degrees from 288 (12-13; baseline year) to 561 (17-18; end of the grant), a 95% increase, (B) CECS has increased the CS, IT, CpE degrees (even though the grant ended in 2018) from 288 (12-13; baseline year) to 959 (21-22), a 233% increase. The BOG grant, institutionalized by UCF, brought much needed funding for CS, IT and CpE to enhance resources

(faculty, GTAs, advisors). I have been supportive of all pockets of research excellence in CECS (e.g., CATER, CRCV, ICE, AMPAC, FCIs, others) or student excellence (e.g., UCF Programming Team, Cyber Team, Limbitless, others) and they have all prospered and contributed to our national visibility. I have been supportive of educational innovations/efforts that enhance student success (EXCEL, GEMS, WISE, COMPASS, YES, Flit-Path, Flit-GAP, EPC, eli², others) and they have all proven to be impactful in attaining higher student success. I have been supportive of research productive faculty (initiated the Research Professorship awards as an Interim dean (12-13) and continued with the Dean's Advisory Board (DAB) faculty fellow awards (started in 2016-2017; supported by philanthropic funds)). I have been supportive of CECS faculty competing for Reach for the Stars, Pegasus, and Trustee awards; CECS faculty have been very successful in the pursuit of these recognitions. In my efforts as a dean, I reviewed and supported several tenure and promotion cases that have come across my desk. These decisions were made based on the faculty's contributions to the College, UCF, and their discipline, contributions that were varied and multi-faceted, as needed to fulfill the wide range of an academic institution's responsibilities.

Other Select Dean's Efforts (impacts G4 and P1): If one looks at my grant activity (since 2002) one can see that there is a predominance of education grants, a good number from NSF (if counted correctly, since 2002 there have been 70 years funded by NSF on educational efforts including the latest Flit-GAP grant that was funded in 2021 for 5 years). In addition to NSF funded efforts other educational efforts have been funded by WCF (Workforce Central Florida), BOG (Board of Governors), Department of Labor, others. All these grants focus on measures of merit, such as increased retention and graduation numbers, good employability + going to graduate school, upon graduation, numbers. All these grants have served/are serving very diverse student populations.

One of the grants that is worth mentioning is the NSF EXCEL grant (awarded in 2006 (\$1.8M) to increase the retention and graduation of STEM FTICs whose math SAT is in the 2nd and 3rd quartile of FTICs entering UCF). Some notable facts about EXCEL are:

1. Because of its impressive results (see Item 2 below) it was institutionalized in 2012.
2. Improved STEM graduation by 49%.
3. Involved higher (than the University) percentages of minorities and women in its cohorts.
4. Served as the testbed for the initiation of the GEMS/WISE programs that focused on higher retention of female EXCEL students (improved first year retention and graduation of EXCEL female students). Served as a testbed for other educational initiatives followed by UCF's Math Department.
5. Impacted more than 5,000 students, more than 1,000 women students, offered undergraduate research experiences to more than 1,000 students.
6. Has recently received funding from the provost to double its impact on FTICs and to start an EXCEL transfer program
7. Has recently received ~\$800k from NGC (Northrop Grumman) Foundation to expand its GEMS/WISE activities.

One of the other grants that is also worth mentioning is the BOG grant (CSIT TEAm grant) received in 2014 with the primary intent to increase the number of degrees in CS, IT, CpE. This grant (~5M) involved UCF (lead), FIU, USF. Some of the notable facts about the CSIT TEAm grant are:

1. It increased (for UCF) the number of CS, IT, CpE degrees from 288 (12-13; baseline year) to 561 (17-18; end of grant).

2. Similarly good results were attained by FIU/USF. More specifically, there were four TEAm grants awarded by BOG in 2014 (one with UCF the lead; IT degrees focus, one with FAMU-FSU the lead; IT degrees focus, one with FAU the lead; IT degrees focus, one with USF the lead; accounting degrees the focus). The TEAm grant achievements (all four grants) were: (A) enrolled 1,185 additional students (juniors and seniors) than they would have enrolled without the funding (compared to the baseline year), and (B) produced 534 additional graduates than they would have produced without the funding (compared to the baseline year). It is worth noting that the CSIT TEAm grant (UCF lead) accounted for 736 of the additional enrollees (attained 62% of the total improvement) and for 432 of the additional graduates (attained 79% of the total improvement).
3. It increased (for UCF) the number of CS, IT, CpE degrees from 288 (12-13; baseline year) to 959 (21-22).
4. Due to its impressive performance the BOG funding was institutionalized at UCF providing needed resources for additional faculty, GTAs, advisors to support the CS, IT, CpE programs.

Other Select Dean's Efforts (impacts G5 and P3, P4):

In Fall 2017 the Provosts from the SUS (State University System) discussed, per recommendation of the UCF Provost, the creation of an Academy in Florida, the Academy of Science, Engineering and Medicine of Florida (ASEMFL). All Provosts agreed that the creation of such an Academy will be beneficial for the state, all its higher-ed institutions and Florida's technology workforce. The Academy was established in October 2018 as a non-for-profit organization in the State of Florida. National Academy members that reside or work in Florida are automatically members of the Academy. Other members are inducted into the Academy following a selection process that resembles that National Academy selection process. The Academy has two primary goals: (A) Induct into the Academy new members that have made significant contributions in science, engineering, or medicine. (B) Conduct studies that are of interest to the State of Florida and its citizens. Since its inception the Academy has approved a constitution and bylaws, has held three annual meetings (two virtual, 1 hybrid) and has inducted in the Academy 50+ new members (22 in 2020, 15 in 2021, 14 in 2022). In the Inaugural Board of the Academy the President, Treasurer, Executive Director were UCF faculty. In the current board of the Academy the Treasurer and Executive Director are UCF faculty members. CECS's future goal is to support ASEMFL in its future pursuits (goals A and B). The opportunities for UCF's increased visibility through its association with ASEMFL are: (A) Connecting with National Academy members in the State of Florida (automatic members of ASEMFL), (B) Connecting with new inductees who have made significant contributions in science, engineering, or medicine (some of these inductees could eventually be successfully nominated for the national academies), (C) Connecting with Florida institutions and other orgs that are actively involved with ASEMFL (e.g., UF, FSU, USF, FIU, Miami, other orgs), (D) Enhance the visibility of ASEMFL within the state and outside the state once the academy pursues and completes studies that are of interest to the state and its citizens.

2016-2017 Activities

- In 2016-2017 philanthropic support was provided for the UCF Programming team, a Seminar Series in CECE, eli² (Innovation Lab), Digital Grid Lab, Limbitless Solutions, CATER, GEMS, WISE, FEEDER. Some of the gifts were planned gifts and some were software donations. In total, the College received philanthropic support of \$8,716,327 (Dashboard Data).

- In 2016-2017 examples of marketing efforts include: Fast Facts for the College, CECS Newsletters, CECS and Departmental Graduate Brochures, eli^2 brochure, Senior Design Brochure, 2016-2017 CECS Faculty Hires Flyer, a CECS video promoting our graduate efforts, others.
- In 2016-2017, the College had another great year in terms of student successes. For instance, in 2017 the UCF Programming team won the Southeast Regional Competition (5th year in a row) and was placed 1st in the US and 13th in the world at the International Collegiate Programming Competition (ICPC) in South Dakota. The Cyber defense team continues to thrive in terms of students interested in its activities (Hack@UCF club) and in terms of cyber competitions that they compete at. The team, a 4-time Southeast Cyber champion and a 3-time National champion (back-to-back-to-back) is gearing up for the Southeast Regional and National Cyber competitions (April of 2018). A DSO was created to support the Limbitless Solutions activities. The future goal is to support 20 clinical trials for bionic arms so that kids with missing limbs will have an avenue of obtaining these bionic arms at a variety of medical facilities around the nation. A good number of undergraduate students from CECS and CAH are actively involved with Limbitless and getting valuable out of classroom experiences.
- The deans of CECS, COS, COM and CEHP supported 5-6 iSTEM fellows annually from 2014-2016, that is faculty fellows that were tasked to work collaboratively on ideas related to STEM education and STEM education research. The primary intent of the fellows' work was to submit their ideas for funding to agencies such as NSF, Department of Education, and other funding agencies. Since the inception of the program there have been over 70 grant submissions with 20 funded projects totaling \$8.4 million in awards (10 pending, totaling \$11 million) and at least 10 publications, 4 courses implementations or modifications and 5 conference presentations. Over 40 of these projects would not have occurred without the relationships developed within the Fellows program. In an attempt to broaden the impact beyond a few select faculty, the deans opted to fund the 2017 STEM Education Research Symposium series. In Fall 2017, 52 faculty and administrators from across the university participated in working teams to develop STEM Education Research related projects in the areas of undergraduate and graduate teaching, workforce development, informal learning and learn more about research development support. Additional meetings will be held in Spring 2018.
- In 2016-2017, Experiential Learning Office (ELO) at UCF led a funded internship program for students at UCF. The students are 30 hours away from graduation and need to satisfy certain eligibility criteria (e.g., financial need). The maximum student support was \$6,000. This program was supported by Career Source Central Florida and its creation was a result of collaborative efforts of Jackie Herold (ELO), Eileen Smith (IST) and Michael Georgiopoulos with Pam Nabors (CEO of Career Source Central Florida). The number of students that were supported as interns (20 different companies participated) through this program is:
 - In 2013-2014, 40 *students* were involved in funded *internship experiences*
 - In 2014- 2015, 60 *students* were involved in funded *internship experiences*
 - In 2015- 2016, 12 *students* were involved in funded *internship experiences*
 - In 2016- 2017, 18+ *students* were involved in funded *internship experiences*
- In 2015-2016, UCF was designated an emerging pre-eminent institution. This designation carried over in 2016-2017. There are a number of targets met by UCF that qualified for this designation. The targets for which CECS played a positive role are: Total Annual Research Expenditures (non-medical), National Ranking in Research Expenditures, Patents Awarded, and Doctoral Degrees Awarded Annually. Most importantly, in 2016-2017 UCF has recruited 3

NAE members (James Baker (CS and ECE), Elaine Weyuker (CS), and Debbie Nightingale (IEMS)) that became affiliated with UCF. This increased the number of National Academy members affiliated with UCF to 6.

- In 2016-2017, we submitted an interim report for the BOG grant effort (July 2017). This report is related to a grant that we received from the BOG in April 2014 (one of four grants awarded; were ranked first of the 12 grants submitted for funding). The purpose of the CSIT TEAm grant effort (~\$4.9M grant effort) is to increase the degrees in IT disciplines (CS, IT and CpE) by 67% from 2012-2013 academic year to the 2017-2018 academic year. Some notable successes of the CSIT TEAm grant, in its first four years of operation (2013-2014, 2014-2015, 2015-2016, 2016-2017), is that (a) In Year 4 (2016-2017) the upper enrollees are 7129, 39% higher than the number of upper enrollees (5,136) in the baseline Year (2012-2013); (b) In Year 4 (2016-2017) the number of degrees are 1,431, 51.1% higher than the number of degrees (947) in the baseline Year (2012-2013); (c) The Completer Outcomes, aggregated over all institutions and disciplines and spanning the graduates of Summer 2015 to Spring 2016, point to some very positive conclusions, such as: (1) The full-time employability of CSIT TEAm graduates is 81.5%, (2) The combined percentage of CSIT TEAm graduates who work full-time or are enrolled full-time is 85.1%, (3) The percentage of CSIT TEAm graduates working full-time or part-time in the State of Florida is 73.00%, (4) The percentage of CSIT TEAm graduates earning more than \$48,000 is 73.8%. What is most impressive is that the number of CS, IT and CpE degrees at UCF have increased, from the baseline year of 2012-2013 to 2016-2017, from 288 to 480, an increase of almost 67%. The number of 480 graduates in CS, IT and CpE was achieved two years in a row (2015-2016 and 2016-2017).
- Due to the successful outcomes of the CSIT TEAm grant effort, UCF, USF and FIU were awarded (lead FIU) a \$5M (UCF's portion is more than \$1.5M), S-STEM NSF grant called Florida IT Pathways to Success (FLIT-Path). This effort was led by Mostafa Bassiouni (CS, UCF; PI), Michael Georgiopoulos (ECE, UCF; Co-PI), Mark Weiss (CS, FIU; PI), Zahra Hazari (Teaching and Learning at FIU; Co-PI), Kenneth Christensen (IT, USF; PI), Rafael Perez (CSE, USF; Co-PI). The purpose of FLIT-Path is to increase the success of academically talented and financially needy CS, IT and CpE students by offering them a plethora of enhanced educational opportunities and scholarship support. The grant started in October 2016.
- Provided leadership, as needed, for the follow-up of the ABET responses related to the Aerospace Engineering (AE) and Information Technology (IT) programs. The IT program was asking for accreditation for the first time. AE and IT have been accredited for six years (best accreditation results). All programs in CECS have been accredited for six years (up to 2021). The next ABET visit is in Fall 2020.
- Provided leadership, as needed, towards the hiring of faculty for the FCI (Faculty Cluster Initiative) 1.0 clusters. Of the 43 FCI 1.0 proposals, submitted by UCF faculty, 10 made it to the final round. Of these 10 proposals, 6 were chosen to be funded and all 6 have associated CECS faculty positions. So far the CECS affiliated hires in the FCI 1.0 cluster are: RISES (4 CECS hires), Smart Prosthetics (3 hires), Catalysis and Propulsion (0 hires), Cyber and Privacy (2 hires), Genomics and Bioinformatics (2 hires), Costal Research (1 hire). The rest of the FCI 1.0 hires will happen in the 2017-2018 hiring cycle.
- CECS competed aggressively in the FCI 2.0 cluster cycle. Three clusters were funded by the Provost of which 2 (Disability and Aging Technology cluster, and Science of Learning cluster) have strong participation from CECS.

- Provided leadership, as needed, for the hiring of three National Academy of Engineering professors, James Baker (Speech Processing, CS, and ECE), Elaine Weyuker (Software Testing, CS), Debbie Nightingale (Entrepreneurship, IEMS). Now, CECS has 6 National Academy members that are affiliated with UCF.
- In 2016-2017, CECS hired the following 21 T/TE and NAE faculty all joined in Fall 2017 unless otherwise specified): (CECE: Georgios Apostolakis (TE), Luis G. Arboleda-Moslave (TE), Haofei Yu (TE); CS: Aziz Mohaisen (TE, Cyber cluster), Xinwen Fu (T, cyber cluster), Wei Zhang (TE, Genomics and Bioinformatics cluster), Elaine Weyuker (NAE, joined Spring 2017), James Baker (NAE; joined Spring 2017); ECE: Amro Awad (TE), Junjian Qi (TE, RISES cluster), Qifeng Li (TE, RISES cluster); IEMS: Lukasz Mazur (T, joining Summer 2018), Debbie Nightingale (NAE, joined Spring 2017); MAE: Dazhong Wu (TE), Qiushi Fu (TE, Prosthetics cluster), Swati Saxena (TE; joining Spring 2018), Felipe Viana (TE; joining Spring 2018); MSE: Akihiro Kushima (TE, joined Summer 2017), Kristopher Davis (TE, RISES cluster), Kaitlyn Crawford (TE, Prosthetics cluster), Elizabeth Brisbois (TE, Prosthetics cluster). Over the same time period 3 T/TE faculty have left UCF (resigned or retired): (CECE: None; CS: Narsingh Deo (T); ECE: Yier Jin (TE); IEMS: Bill Thompson (non-tenured); MAE: None; MSE: None.
- The numbers of BS degrees have virtually stayed the same from 1356 (2015-2016) to 1357 (2016-2017).
- The numbers of MS degrees have decreased from 388 (2015-2016) to 322 (2016-2017), a decrease of 17.3%.
- The numbers of Ph.D. degrees have decreased from 89 (2015-2016) to 81 (2016-2017), a decrease of 8.9%.
- The number of all degrees has decreased from 1828 (2015-2016) to 1760 (2016-2017), a decrease of 3.7%.
- The total number of undergraduate SCHs has increased from 137,985 (2015-2016) to 144,098 (2016-2017), an increase of 4.4%.
- The total number of graduate SCHs has increased from 19,976 (2015-2016) to 21,382 (2016-2017), an increase of 7.03%.
- The total number of undergraduate and graduate SCHs has increased from 157,961 (2015-2016) to 165,480 (2016-2017), an increase of 4.76%.
- In 2015-2016 there were 2 new degrees and a new track approved for CECS. The MS degree in Biomedical Engineering (MS in BME), a degree supported by CECS and COM, The MS degree in Data Analytics (MSDA) a degree supported by CECS and COS, and a new Industrial Engineering track in HealthCare Systems Engineering (HSE), supported by CECS and COHPA. The number of students in the inaugural year (2016-2017) of these degrees were 8 (MS in BME), 15 (MS in Data Analytics) and 3 (track in HSE). The number of students in the year (2016-2017) of these degrees were 17 (MS in BME), 34 (MS in Data Analytics) and 11 (track in HSE).
- In 2016-2017 we started a new dual degree with the COM. This degree is called MEDD (Medicine and Engineering dual degree) for FTIC students who join UCF with a good number of AP credits. In the end, these students are expected to receive two degrees, an Engineering degree and a Biomedical Sciences degree. The MEDD degree had 25 applicants for Fall 2017, 12 of these applicants were accepted, and 4 of these applicants are now enrolled at UCF.

- The total number of College's research expenditures in 2016-2017 is \$30.280M, 8.5% higher than the research expenditures in 2015-2016 (\$27.907M).
- The College's new external research funding in 2016-2017 is \$37.29M, slightly higher (4.6% higher) than the new external funding in 2015-2016 (\$35.642M).
- In 2016-2017, the College submitted proposals for funding totaling \$199.503M an increase of 57% over the proposals total submitted for funding in 2015-2016 period, which was \$127.134M.
- CECS supports CATER, a research cluster of excellence, led by Professor Kapat (MAE). A few of CATER's notable accomplishments are: CATER just completed 5 years of operation, and currently has 11 tenured/tenure-track core faculty members, with 9 from MAE, 1 from CECE and 1 from Statistics (COS), including 3 new additions over the past year. These faculty members have collectively brought more than \$2.4M worth of funding last year and had research expenditures of \$3.2M. CATER has secured two Doctoral Fellowships (@\$50K per fellow) from Siemens Energy, and another few are being negotiated. In December 2016, DoE announced the Co-Optima grants; two of the eight of these grants were awarded to CATER faculty (Kareem Ahmed, Subith Vasu, and Jay Kapat) for a total amount of more than \$1.2M. CATER core faculty members have received, in 2016-2017, one UCF Pegasus award and two UCF Luminary awards.
- CECS supports CRCV, a university center, led by Mubarak Shah (CS). CRCV faculty published 10 papers in the 2017 International Conference in Computer Vision (ICCV), a top tier conference in Computer Vision. In 2017, CRCV celebrated its 30-Year-Old NSF REU (Research Experiences of Undergraduates) program, the only REU program in the nation running without interruption for 30 consecutive years. Dr. Shah's and Zhai's paper on *Visual Attention Detection in Video Sequences using Spatiotemporal Cues* is listed as top four classic papers in multimedia. CRCV's work (Shah and his students) on crowd counting and crowd tracking has received a lot of attention (Science Magazine, IEEE Spectrum).
- CECS supports the Interactive Computing Experiences (ICE) Research Cluster of Excellence, directed by Associate Professor Joe LaViola (CS) and co-directed by Assistant Professor Pam Wisniewski (CS/IT). This year, ICE faculty published 6 ACM SIGCHI papers and won a best of CHI award (top 5% of all 2,400 submissions). Dr. LaViola released the second edition of his book "3D User Interfaces: Theory and Practice", the 3D user interface bible. Dr. Wisniewski's research on adolescent online safety was featured by NPR, Forbes, Science Daily, and the Associated Press and resulted in invited talks at Facebook and Google. In addition to the two existing ICE research labs, the Interactive Systems and User Experience (ISUE) and the Sociotechnical Interaction Research (STIR), ICE is adding two new research labs that will launch in Fall of 2017: The Augmented and Virtual Reality (AR/VR) Lab directed by Dr. LaViola and the Industry-based User Experience (iUX) Lab directed by Dr. Wisniewski. The total new funding for ICE this past year was approximately \$550k.
- RISES (Renewable, Intelligent, Sustainable, Energy Systems) one of the Faculty Cluster Initiatives, funded by the Provost, has hired five of its 6 allotted lines. RISES is led by Zhihua Qu (ECE). RISES faculty currently have a research portfolio surpassing \$10M. Among this research portfolio select grants are: Protecting Critical Timing Infrastructure, A Cooperative Network Precision Time Protocol, 1.5M, DHS, 2017-2019 (Coleman Aerospace and UCF, Zhihua Qu (ECE), UCF-PI), Scalable/Secure High-Penetration Solar Integration, \$2M, DoE ENERGIZE Program, 2017-2020 (Zhihua Qu (ECE), UCF-PI), Characterization of Contact

Degradation in Crystalline Silicon PV Modules, \$1.5M, DoE PVRD2 Program, 2017-2020 (Kris Davis (MSE), UCF-PI).

- Serving on UCF's Dean's Council (meets monthly).
- Serving on UCF's Provost's Council (meets periodically).
- The re-appointment process for the IEMS chair was completed successfully. Waldemar Karwowski was re-appointed for a 5-year term (2017-2022).
- The internal search for an MSE chair was completed successfully. Sudipta Seal was selected to be the new chair of MSE. Furthermore, AMPAC is now operating under the MSE umbrella. The Director of AMPAC is reporting to the chair of MSE with a dotted line to the VP of Research.
- Chairing the CECS Chair's Council Meeting (meets every month).
- Participated in the Engineering Colleges Dean's PPC (Public Policy Committee) in Washington, DC, February 6-8, 2017.
- Participated in the Engineering Deans Institute, April 2-April 5, 2017, Coral Gables, FL 2017.
- Serving as the member of the Engineering Dean's Council Diversity Committee.

2015-2016 Activities

- In 2015-2016 philanthropic support was provided for the UCF Programming team, a Seminar Series in CECE, eli² (Innovation Lab), many others. Some of the gifts were planned gifts and some were software donations. In total, the College received philanthropic support of \$15,011,996 (Dashboard Data).
- In 2015-2016 examples of marketing efforts include: Fast Facts for the College, CECS Newsletters, CECS and Departmental Graduate Brochures, eli² brochure, Senior Design Brochure, 2015-2016 CECS Faculty Hires Flyer, others.
- In 2015-2016, the College had another great year in terms of student successes, such as the UCF Programming team (in 2016 the team won the Southeast Regional competition (the only team that solved all 10 problems in the competition), and in the World Finals ranked 28th in the world and 3rd in the nation), the Cyber Defense team (won the regional completion in 2016 (fourth year in a row) and the national competitions (third year in a row, the first ever 3-peat national champion)), and the Limbitless Solutions team continued with their creation of bionic arms for children with missing limbs (in 2015 they delivered 12 arms for Christmas), mentored and funded 10 senior design teams, while 40+ of the mentored by Limbitless UCF students graduated in December 2016).
- In 2015-2016, Experiential Learning Office (ELO) at UCF led a funded internship program for students at UCF. The students are 30 hours away from graduation and need to satisfy certain eligibility criteria (e.g., financial need). The maximum student support was \$6,000. This program was supported by Career Source Central Florida and its creation was a result of collaborative efforts of Jackie Herold (ELO), Eileen Smith (IST) and Michael Georgiopoulos with Pam Nabors (CEO of Career Source Central Florida). The number of students that were supported as interns (20 different companies participated) through this program is:
 - In 2013-2014, 40 *students* were involved in funded *internship experiences*
 - In 2014- 2015, 60 *students* were involved in funded *internship experiences*
 - In 2015- 2016, 12 *students* were involved in funded *internship experiences*

- In 2016- 2017, this effort continues with *18 internship experiences by Fall 2016*
- In 2015-2016, Career Source Central Florida funded WIA scholarships for STEM students, 30 credit hours away from graduation that were in financial need. The maximum student support was \$7,000. This effort was a result of a collaborative effort involving Melissa Dagley (iSTEM-UCF), Michael Georgiopoulos and Pam Nabors, CEO of Career Source Central Florida. The number of UCF students who received a WIA scholarship is as follows:
 - *2014-2015 Academic Year:* Supported 17 students for tuition, books and licensure testing (all graduated)
 - *2015-2016 Academic Year:* Supported 4 students (three completed their degrees; one pending)
- In 2015-2016, UCF was designated an emerging pre-eminence institution. There are a number of targets met by UCF that qualified for this designation. The targets for which CECS played a positive role are: Total Annual Research Expenditures (non-medical), National Ranking in Research Expenditures, Patents Awarded, and Doctoral Degrees Awarded Annually.
- In 2015-2016, we submitted an interim report for the BOG grant effort (July 2016). This report is related to a grant that we received from the BOG in April 2014 (one of four grants awarded; were ranked first of the 12 grants submitted for funding). The purpose of the CSIT TEAm grant effort (~\$4.9M grant effort) is to increase the degrees in IT disciplines (CS, IT and CpE) by 67% from 2012-2013 academic year to the 2017-2018 academic year. Some notable successes of the CSIT TEAm grant, in its first three years of operation (2013-2014, 2014-2015, 2015-2016), is that (a) In Year 3 (2015-2016) the upper enrollees are 6,721, 30.85% higher than the number of upper enrollees (5,136) in the baseline Year (2012-2013). The Year 3 upper enrollees is larger by 4.9% and smaller by 6.7% than the Year 3 projected and expected numbers, respectively; (b) In Year 3 (2015-2016) the number of degrees are 1,292, 36.43% higher than the number of degrees (947) in the baseline Year (2012-2013). The Year 3 number of degrees is larger by 18.4% and smaller by 2.56% than the Year 3 projected and expected numbers, respectively; (c) The Completer Outcomes, aggregated over all institutions and disciplines and spanning the graduates of Summer 2013 to Spring 2015, point to some very positive conclusions, such as: (1) The full-time employability of CSIT TEAm graduates is 82.40%, (2) The percentage of CSIT TEAm graduates that pursue graduate school is 8.00%, (3) The combined percentage of CSIT TEAm graduates who work full-time or are enrolled full-time is 87.00%, (4) The percentage of CSIT TEAm graduates working full-time or part-time in the State of Florida is 75.00%, (5) The percentage of CSIT TEAm graduates earning more than \$48,000 is 70.00%. What is most impressive is that the number of CS, IT and CpE degrees at UCF have increased, from the baseline year of 2012-2013 to 2015-2016, from 288 to 480, an increase of almost 67%.
- Due to the successful outcomes of the CSIT TEAm grant effort, UCF, USF and FIU were awarded (lead FIU) a \$5M, S-STEM NSF grant called Florida IT Pathways to Success (FLIT-Path). This effort was led by Mostafa Bassiouni (CS, UCF; PI), Michael Georgiopoulos (ECE, UCF; Co-PI), Mark Weiss (CS, FIU; PI), Zahra Hazari (Teaching and Learning at FIU; Co-PI), Kenneth Christensen (IT, USF; PI), Rafael Perez (CSE, USF; Co-PI). The purpose of FLIT-Path is to increase the success of academically talented and financially needy CS, IT and CpE students by offering them a plethora of enhanced educational opportunities and scholarship support.
- Provided leadership, as needed, for the follow-up of the ABET responses related to the Aerospace Engineering (AE) and Information Technology (IT) programs. The IT program was

asking for accreditation for the first time. The official results of these responses will be provided by ABET in July 2017.

- Provided leadership, as needed, towards the hiring of faculty for the FCI (Faculty Cluster Initiative) 1.0 clusters. Of the 43 proposals, initially submitted by UCF faculty, 10 made it to the final round. Of these 10 proposals, 6 were chosen to be funded and all 6 have associated CECS faculty positions. In 2015-2016, one Assistant Professor was hired for the Coastal Research cluster, one Associate Professor was hired for the RISES cluster, and one full professor was hired for the Genomics/Bioinformatics cluster.
- Provided leadership, as needed, for the hiring of two National Academy of Engineering professors, Gavriel Salvendy (Human Factors, IEMS) and Kumares Sinha (Transportation, CECE).
- In 2015-2016, CECS hired the following 20 T/TE and NAE faculty (CECE: Samiul Hassan (TE), Kumares Sinha (NAE), Thomas Wahl (TE); CS: Sharma Thankachan (TE), Shibu Yoosheph (T); ECE: Aleksandar Dimitrovski (TE), Rickard Ewetz (TE), Yaser Fallah (TE), Murat Yuksel (T), Qun Zhou (TE); IEMS: Ivan Garibay (TE), Heather Keathley (TE), Gavriel Salvendy (NAE), Adan Ernesto Vela (TE); MAE: Samik Bhattacharya (TE), Andrew K. Dickerson (TE), Tarek A. Elgohary (TE), Ranajay Ghosh (TE), Kawai Kwok (TE); MSE: Loraine Leon (TE). Over the same time period 5 T/TE faculty have left UCF (resigned or retired): (CECE: None; CS: Ratan Guha (T); ECE: Samuel Richie (T), Donald Malocha (T); IEMS: Petros Xanthopoulos (TE); MAE: Faissal Moslehy (T); MSE: None.
- The numbers of BS degrees have increased from 1240 (2014-2015) to 1356 (2015-2016), an increase of 9.35%.
- The numbers of MS degrees have increased from 329 (2014-2015) to 388 (2015-2016), an increase of 17.93%.
- The numbers of Ph.D. degrees have increased from 77 (2014-2015) to 89 (2015-2016), an increase of 15.58%.
- The number of all degrees have increased from 1646 (2014-2015) to 1833 (2015-2016), an increase of 11.36%.
- The total number of undergraduate SCHs has increased from 128,613 (2014-2015) to 137,985 (2015-2016), an increase of 7.3%.
- The total number of graduate SCHs has increased from 19,340 (2014-2015) to 19,976 (2015-2016), an increase of 3.29%.
- The total number of undergraduate and graduate SCHs has increased from 147,953 (2014-2015) to 157,961 (2015-2016), an increase of 6.76%.
- In 2015-2016 there were 2 new degrees and a new track approved for CECS. The MS degree in Biomedical Engineering (MS in BME), a degree supported by CECS and COM, The MS degree in Data Analytics (MSDA) a degree supported by CECS and COS, and a new Industrial Engineering track in Health Systems Engineering (HSE), supported by CECS and COHPA. The number of students in the inaugural year (2016-2017) of these degrees were 8 (MS in BME), 15 (MS in Data Analytics) and 3 (track in HSE).
- The total number of College's research expenditures in 2015-2016 are \$27.907M, more than 15% higher than the research expenditures in 2014-2015 (\$24.214M).
- The College's new external research funding in 2015-2016 is \$35.642M, more than 26% higher than the new external funding in 2014-2015 (\$28.186M).

- In 2015-2016, the College submitted proposals for funding totaling \$127.134M a decrease of more than 3% over the proposals total submitted for funding in 2014-2015 period, which was \$131.747M.
- CECS supports CATER (Center of Advanced Turbomachinery and Energy Research), a research cluster of excellence, led by Professor Kapat (MAE). A few of CATER's notable accomplishments in 2015-2016 are: CATER just completed 4 years of operation, and currently has 8 tenured/tenure-track core faculty members, with 7 from MAE and 1 from CECE, who collectively brought more than \$3M worth of funding last year. These faculty members have received in 2015-2016 two of the 6 UCF Reach for the Stars awards and 1 DTRA YIP award.
- CECS supports CRCV (Center for Research for Computer Vision), a university center, led by Mubarak Shah (CS). In 2015-2016, CRCV's 4 core faculty have published 15 journals and 19 conference papers, invited 7 guest speakers and hosted 8 international research scholars. CRCV received a \$1.3M grant from NIJ to conduct crime scene video analysis, part of the \$2.48M of new funding received by CRCV faculty last year. Boqing Gong from CRCV has received first NSF ever grant under CRII.
- CECS supports ISUE (Interactive Systems User Experience), a research cluster of excellence, led by Associate Professor Joe LaViola (CS). In 2015-2016, ISUE faculty won a best of CHI award (top 4% of all 2,000 submissions). ISUE is starting a university-wide AR/VR lab that students can use and develop AR applications. Pam Wisniewski, an Assistant Professor in CS/IT (new last year's hire) has targeted a new user experience lab specifically targeting industry and won a best paper award at CHI (top 1% of all submissions). The total new funding for ISUE this past year was approximately \$800k.
- Serving on UCF's Dean's Council (meets monthly).
- Serving on UCF's Provost's Council (meets periodically).
- The re-appointment process for the ECE and CS chairs was completed successfully. Both chairs (Zhihua Qu, ECE and Gary Leavens, CS) were re-appointed for a 5-year term (2016-2021).
- Per the Provost's request, I submitted a document to Elizabeth Klonoff regarding the Graduate KSC Campus UCF presence reflecting the inputs from senior leadership at FSI, COS, COP, CECS and others. Dr. Klonoff will use this document for further action.
- Chairing the CECS Chair's Council Meeting (meets every month).
- Participated in the Engineering Colleges Dean's PPC (Public Policy Committee) in Washington, DC, February 8-10, 2016.
- Participated in the Engineering Deans Institute, March 29 – April 1, 2016, San Francisco, CA, 2016.
- Serving as the member of the Engineering Dean's Council Diversity Committee.

2014-2015 Activities

- In 2014-2015 philanthropic support was provided for the UCF Programming team, a Seminar Series in CECE, eli² (Innovation Lab), many others. In total, the College received philanthropic support of \$5,320,000 (Dashboard Data).
- In 2014-2015 examples of marketing efforts include: Modified Focus brochure, Fast Facts for the College, CECS Newsletters, CECS Web-site, CECS Graduate Brochure, eli² brochure, others.

- In 2014-2015, the College had a breakout year in terms of student successes, such as the UCF Programming team (in 2015 the team won the Southeast Regional competition, and in the World Finals, ranked 28th in the world and 8th in the nation), the Cyber Defense team (won the regional completion in 2015 (3rd time in a row), the national competition in 2015 (2nd time in a row), while the Limbitless Solutions team that built bionic arms for kids with missing limbs (most notably Alex, Wyatt and Anika), gained national visibility as they were featured for their innovative spirit and desire to change the world by Microsoft's #ICollective project.
- In 2014-2015, Experiential Learning Office (ELO) at UCF led a funded internship program for students at UCF. The students are 30 hours away from graduation and need to satisfy certain eligibility criteria (e.g., financial need). The maximum student support was \$6,000. This program was supported by Career Source Central Florida and its creation was a result of collaborative efforts of Jackie Herold (ELO), Eileen Smith (IST) and Michael Georgiopoulos with Pam Nabors (CEO of Career Source Central Florida). The number of students that were supported as interns (20 different companies participated) through this program is:
 - In 2013-2014, *40 students* were involved in funded *internship experiences*
 - In 2014- 2015, *60 students* were involved in funded *internship experiences*
- In 2014-2015, Career Source Central Florida funded WIA scholarships for STEM students, 30 credit hours away from graduation that were in financial need. The maximum student support was \$7,000. This effort was a result of a collaborative effort involving Melissa Dagley (STEM-UCF), Michael Georgiopoulos and Pam Nabors, CEO of Career Source Central Florida. The number of UCF students who received a WIA scholarship is as follows:
 - *2014-2015 Academic Year*: Supported *17* students for tuition, books and licensure testing (all graduated)
- In 2014-2015, with the help of the College's senior leadership we submitted another version of the Pre-Eminent CECS proposal to the Florida Legislature. This proposal was not funded.
- In 2014-2015, we submitted two interim reports to BOG (July 2014 and January 2015) and we are ready to submit a third interim report (July 2015). These reports are related to a grant that we received from the BOG in April 2014 (one of four grants awarded; were ranked first of the 12 grants submitted for funding). The purpose of the CSIT TEAm grant effort (~\$4.9M grant effort) is to increase the degrees in IT disciplines (CS, IT and CpE) by 67% from 2012-2013 academic year to the 2017-2018 academic year. Some notable successes of the CSIT TEAm grant, in its first two years of operation (2013-2014 and 2014-2015), is that (a) it increased the unduplicated upper enrollments, compared to the baseline year of 2012-2013, by 23.6% (from 5136 to 6349) and (b) it increased the number of degrees, compared to the baseline year of 2012-2013, by 26.6% (from 947 to 1190). In particular, UCF has increased the number of degrees from 2012-2013 (baseline year) to 2014-2015 by almost 41% (288 in 12-13 to 406 in 14-15). Other worthwhile successes of the CSIT TEAm grant, in its second year of operation (2014-2015), is the sharing of technical electives by the three institutions (8 shared technical electives offered in spring 2015), the creation of a Virtual Career Fair in Spring 2015 populated by 22 companies and visited by 200 students, and the creation of a Common Internship portal (by May 22, 2015, 124 companies have posted 294 positions, 344 students had registered, 332 students had logged, 2,653 positions were viewed, and 96 students have clicked on positions posted by industry).
- Provided leadership, as needed, during the October 2014 ABET visit to assess all our engineering, computer science and IT programs. The IT program was asking for accreditation for the first time. The results of this accreditation visit will be announced in mid-July 2015.

- Provided leadership, as needed, towards the submission of faculty-led proposals in response to the Provost's Faculty Cluster Initiative. Of the 43 proposals, initially submitted by UCF faculty, 10 made it to the final round. Of these 10 proposals, 6 were chosen to be funded and all 6 have associated CECS faculty positions.
- In 2014-2015 a new MAE chair was hired, Professor Yoav Peles from RPI.
- In 2013-2014 and 2014-2015, CECS hired the following 25 T/TE faculty (CECE: Naveen Eluru (TE), Arvind Singh (TE), Kelly Kibler (TE), Nikos Makris (T), Anwar Sadmani (TE), Talea Mayo (TE); CS: Guo-Jun Qi (TE), Fei Liu (TE), Pamela Wisniewski (TE), Liqiang Wang (T), Ulsa Bagci (TE), Boqing Gong (TE); ECE: Deliang Fan (TE), Wei Sun (TE), Brian Kim (TE); IEMS: Vladimir Boginski (T), Min Zhang (TE), Thomas O'Neal (T; transferred his tenure from Business to Engineering); MAE: Robert Steward (TE) , Kareem Ahmed (TE), Yoav Peles (T; chair MAE), Sang-Eun Song (TE), Helen Huang (TE); MSE: Tengfei Jiang (TE) , Stephen Florczyk (TE). Over the same time period 13 T/TE faculty have left UCF (resigned or retired): (CECE: Kaveh Madhani (TE), David Cooper (T), Scott Hagen (T); CS: Fernando Gomez (T), Marshall Tappen (T); ECE: Saeed Lotfifard (TE); IEMS: Jose Sepuvela (T), Chris Geiger (T), Jennifer Pazour (TE); MAE: Larry Chew (T), Marcel Illie (TE), Cheryl Xu (T), Weiwei Deng (TE).
- The numbers of BS degrees have increased from 1068 (2013-2014) to 1240 (2014-2015), an increase of 16.10%.
- The numbers of MS degrees have decreased from 384 (2013-2014) to 329 (2014-2015), a decrease of 14.3%.
- The numbers of Ph.D. degrees have decreased from 83 (2013-2014) to 77 (2014-2015), a decrease of 7.2%.
- The numbers of all degrees have increased from 1535 (2013-2014) to 1646 (2014-2015), an increase of 7.23%.
- The total number of undergraduate SCHs has increased from 119,336 (2013-2014) to 128,695 (2014-2015), an increase of 7.8%.
- The total number of graduate SCHs has increased from 18,264 (2013-2014) to 19,460 (2014-2015), an increase of 6.5%.
- The total number of undergraduate and graduate SCHs has increased from 137,600 (2013-2014) to 148,155 (2014-2015), an increase of 7.7%.
- The total number of College's research expenditures in 2014-2015 are \$24.214M, more than 29% higher than the research expenditures in 2013-2014 (\$18.702M). This large increase is due to adding one faculty member in our College's ranks.
- The College's new external research funding in 2014-2015 is \$28.186M, more than 25% higher than the new external funding in 2013-2014 (\$22.488M). This large increase is due to adding one faculty member in our College's ranks.
- In 2014-2015, the College submitted proposals for funding totaling \$131.747M a 22% increase over the proposals total submitted for funding in 2013-2014 period, which was \$108.015M.
- In 2014-2015, the College has supported three clusters of excellence: Costal Dynamics of Sea Level Rise (CDSLRL), CATER (Advanced Turbomachinery and Energy Research) and ISUE (Interactive Systems User Experience).
- Serving on UCF's Dean's Council (meets monthly).
- Serving on UCF's Provost's Council (meets monthly).

- Chaired a Review Committee for Dr. Bahaa Saleh's re-appointment as the dean of the COP. The committee (7-member committee) started deliberations in December 2014 and submitted a report to the Provost on March 6, 2015.
- Co-Chaired a Committee charged to advance UCF's interdisciplinary efforts in modeling, simulation and training. The committee (20+ member committee) met for the first time in December 2014 and after multiple deliberations submitted a report to the Provost on May 15, 2015.
- Chairing the CECS Chair's Council Meeting (meets approximately every three weeks).
- Participated in the College Dean's PPC (Public Policy Committee) in Washington, DC, February 10-11, 2015.
- Participated in the 2015 ASEE Engineering Research Council (ERC) Annual Conference, Silver Spring, MD, March 9-11, 2015.
- Participated in an Engineering Deans meeting that briefed White House Officials about the next steps for advancing the national movement related to graduating engineers (NAE Grand Challenges Scholars) that are aware of the NAE Grand Challenges. The event happened on March 24, 2015 at the White House. On March 23rd, 2015 the three founding deans of the NAE Grand Challenges Scholars program delivered this commitment letter to President Obama, on behalf of all the signing deans. UCF's Dean of CECS is one of the signing deans.
- Serving as the member of the Engineering Dean's Council Diversity Committee.

2013-2014 Activities

- In 2013-2014 philanthropic support was provided for the UCF Programming team, a Seminar Series in CECE, eli² (Innovation Lab), others. In total, the College received philanthropic support of \$4,150,000 (dashboard data).
- In 2013-2014 examples of marketing efforts include: Focus brochure, Fast Facts for the College and MSE, CECS Newsletters, eli² brochure, others.
- In 2013-2014, with the help of the College's senior leadership we submitted multiple versions to the Florida Legislature of a Pre-Eminent CECS proposal. This proposal was unsuccessful in its original form; however, \$1M of non-recurring funding was allocated for STEM education purposes to UCF.
- In 2013-2014, Experiential Learning Office (ELO) at UCF led a funded internship program (20 companies involved; 40 students supported) for students at UCF. The students are 30 hour away from graduation and need to satisfy certain eligibility criteria (e.g., financial need). The maximum student support was \$6,000. This program was supported by Career Source Central Florida and its creation was a result of collaborative efforts of Jackie Herold (ELO), Eileen Smith (IST) and Michael Georgiopoulos with Pam Nabors (CEO of Career Source Central Florida).
- In 2013-2014, with the help of the College's senior leadership and our collaborators from USF and FIU we submitted a \$4.9M proposal to the BOG to increase the degrees in CS, IT and CpE. This effort was successful and the award was granted.
- In collaboration with the dean of the COM the first CECS-COM conference (October 18, 2013) was organized with the intent of enhancing research collaborations of faculty from these two colleges.

- In 2013-2014 a new CECE chair was hired, Professor Mohamed Abdel-Aty.
- In 2013-2014 a new Interim chair of MSE was hired, Professor Sudipta Seal.
- In 2013-2014, CECE hired four new faculty members (two new hires, one replacement hire, one diversity hire).
- The numbers of BS degrees has increased from 1002 (2012-2013) to 1070 (2013-2014), an increase of 6.8%.
- The numbers of MS degrees has increased from 346 (2012-2013) to 384 (2013-2014), an increase of 11%.
- The numbers of Ph.D. degrees have increased from 68 (2012-2013) to 83 (2013-2014), an increase of 22%.
- The numbers of all degrees has increased from 1416 (2012-2013) to 1535 (2013-2014), an increase of 8.40%.
- The total number of undergraduate SCHs has increased from 115,014 (2012-2013) to 119,336 (2013-2014), an increase of 3.76%.
- The total number of graduate SCHs has decreased from 18,678 (2012-2013) to 18,264 (2013-2014), a decrease of 2.2%.
- The total number of undergraduate and graduate SCHs has increased from 133,692 (2012-2013) to 137,600 (2013-2014), an increase of 2.9%.
- The total number of College's research expenditures in 2013-2014 was \$18.702M, down by more than 12%, compared to the 2012-2013 research expenditures (\$21.343M).
- The new College external research funding in 2013-2014 was \$22.488M, down by almost 2% compared to the 2012-2013 external funding level (\$22.887M).
- In 2013-2014, the College submitted proposals for funding totaling \$108.015M a more than 7% decrease over the proposals total submitted for funding in 2012-2013 period, which was \$124.124M.
- In 2013-2014 the College is supporting a new research cluster of excellence called ISUE (Interactive Systems User Experience) led by Associate Professor Joe LaViola from Computer Science. This research cluster involves a number of faculty from many colleges, centers and institutes from UCF.
- Serving on UCF's Dean's Council (meets monthly).
- Serving on UCF's Provost's Council (meets monthly).
- Chairing the CECS Chair's Council Meeting (meets approximately every three weeks).
- Participated in the College Dean's PPC (Public Policy Committee) in Washington, DC, February 11-12, 2014. Visited, with Greg Schuckman, a number of our state representatives to promote the college and its efforts.
- Participated in the College Dean's Engineering Council Meeting held on April 4-6, 2014 at Scottsdale, Arizona.
- Serving as the member of the Engineering Dean's Council Diversity Committee.

CECS Interim Dean (July 2012-May 2013)

My **vision** for the college provided a realistic promise: **take the college in a place that it has never been before**. My **vision** was to steadily attain and sustain **a higher national recognition for CECS**. The underlying message of my vision, **together we will conquer**, has guided my professional life as a faculty and as an administrator and I believe that this message can serve the college well.

The mission of the college, in pursuit of its vision, is to: (a) **provide quality education** to a **diverse population** of undergraduate and graduate students in the classroom and outside the classroom (mentorship, experiential learning experiences, senior design experiences), (b) **produce quality engineers and scientists** with the **necessary skills** (leadership, innovation, collaboration, communication) to succeed in a global ever-changing society, (c) produce scholarly work that advances the state-of-the-art and generates research funding support for the college's efforts, and (d) **engage all UCF's stakeholders and partners** at the local, state, national and international level in support of the college's vision.

In the following, I provide a list of accomplishments as an Interim dean, in support of the college's vision. Some items on this list were initiatives inherited from the previous administration that I thought were important contributors to attain the college's vision, and as such reiterated here, and designated as OLD and NEW. New initiatives are designated as NEW.

1. DRPAs (Dean's Research Professorship Awards); NEW:

The primary mission of the College of Engineering and Computer Science (CECS) is to provide quality education to its students, undergraduate and graduate. Therefore, the College relies heavily on the efforts of research productive faculty to perform state-of-the-art research and bring the state-of-the-art knowledge to students in the classroom and outside the classroom. The Dean's Research Professorship Awards (DRPAs) intent is to recognize the efforts of our most research productive faculty and the outstanding value that they bring to their classroom teaching, as well as to the unambiguous value of the research mentorship that they offer to undergraduate and graduate students that are apprentices in their labs. DRPAs would be providing some monetary assistance to the recipients of the award in support of their research activities (e.g., travel, lab purchases, student support, other).

2. Undergraduate Teaching Assistant (TA) Program; NEW:

CECS faculty and lecturers/instructors are dealing with larger classes because of the increased student population in CECS. Consequently, there is a concern that the quality of CECS course instruction will soon be negatively impacted. One of the ways of alleviating this problem is by providing additional TA (teaching assistant) help for the large classes taught by CECS faculty. This is the reason for the introduction of the CECS Undergraduate TA program. The intent of the CECS Undergraduate TA program is to first train, and then to engage some of our best junior and senior undergraduates in helping our existing graduate TAs and faculty in successfully accomplishing their instructional duties. For Spring 2013, the Dean's Office in collaboration with the chairs have allocated funds to support 65 undergraduate TAs that would assist in CECS's instructional mission.

3. iSTEM (Initiatives in STEM); NEW:

Faculty in CECS (College of Engineering and Computer Science) and COS (College of Sciences) are very active in STEM education, including outreach, recruitment, programs to improve student success, and research. To build on this success, and expand collaboration, the two colleges have agreed to work together on multi-disciplinary STEM education research, programs, and outreach efforts. Therefore, the CECS/COS Initiatives in STEM (**iSTEM**) effort has as its core mission to promote and enhance CECS and COS collaborative efforts on STEM education and research. iSTEM will help us develop close ties with other colleges, centers, and institutes on campus, as well as other stakeholders with a similar interest in STEM

initiatives. This includes both STEM and non-STEM units with an interest in STEM-related education. The deans of COS and CECS are talking to other deans and Center/Institute Directors to expand this initiative across the entire UCF campus.

4. Enhancement of Collaborative Efforts with other UCF units; NEW:

The overarching CECS focus, during this fiscal year, from my point of view, has been the enhancement of partnerships with other units at UCF, as well as other UCF stakeholders. To facilitate this effort in the two college meetings for Fall 2012 Center, Institute Directors, as well as college deans have been invited to present the research projects that their faculty have been involved with and to suggest ways for closer collaborations with CECS faculty. Dean Saleh (College of Optics and Photonics), Director Seal (Nanoscience Technology Center, and Advanced Materials Processing Center), and Jim Fenton/Winston Schoenfield (Director and Associate Director of the Florida Solar Energy Center) have presented at the CECS Fall 2012 college meetings on behalf of their units. An initiative that is illustrative of the collaborative efforts that CECS wants to foster with other UCF units is the proposal of a BS in Photonics Science and Engineering that the College of Optics and Photonics (COP) and the College of Engineering and Computer Science are recommending to the Board of Governors for approval. This, in my opinion, will spur closer interactions with the COP faculty and the CECS faculty, particularly faculty from the EECS, MAE and MSE Departments.

5. Engineering Leadership and Innovation Institute (eli²); OLD and NEW:

The creation of eli² was Dean Simaan's idea and is headed by Professor Tim Kotnour from IEMS. Its primary goal is to impart skills on CECS graduates that they do not typically obtain by going through the CECS curriculum. These skills include leadership and innovation, amongst others. Since its inception, eli² has affected thousands of students by impacting courses such as the Introduction to Engineering I and II, senior design, and others. One of its prominent successes is the creation and successful implementation of an eli² seminar series, where successful engineering and computer science professionals, some of which are prominent UCF alumni, are invited to present their professional and life experiences to CECS students. Another eli² prominent success is the Senior Design Symposium, conducted at the end of the Spring semester of every year, where senior design students showcase the results of their work to the UCF community as well as to many of UCF's stakeholders. eli² is, from my point of view, an initiative that we can build upon, engage our many industrial partners with and help CECS attract external funding from a variety of sources (federal, state, foundations). In the recent (November 17, 2012) Dean's Advisory Board meeting, eli² played a prominent role and it will remain under the purview of the Dean's Advisory Board Academic committee, thus providing a way to consistently engage our advisory board members with.

6. Dean's Advisory Board; OLD and NEW:

Dean Simaan (previous dean of CECS) has put in place a strong Advisory Board (20+ members), whose intent is to help the college attain its vision. The Dean's Advisory Board has four committees, headed by Advisory Board members, and facilitated by CECS faculty. These committees are: The Research Committee, the Academic Committee, the Revenue Committee, and the Faculty Awards Committee. Since assuming the Interim Dean post, I met personally, or over the phone, with each of the Advisory Board members to listen to their point of view and convey to them my vision for the College. In my opinion, what will make the Board successful and engaged in the college affairs is the establishment of an actionable agenda for all these committees that will be actively pursued in between the two Board meetings, held in

November and April of every academic year. The Dean's Advisory Board held its Fall 2012 meeting on November 17, 2012, at which time the board members were informed about the recent CECS activities, related with the research and teaching mission of CECS, and expressed their opinion about pursuits that the college should be focusing on. In particular, the Dean's Advisory Board Research Committee's has an actionable strong agenda of facilitating **Industry Sabbaticals** for faculty, **Industry-Led seminars** at UCF, and **Faculty Seminars** at industry with the primary intent of enhancing the research collaborations between industry and CECS faculty. Furthermore, the Board's Academic committee will facilitate the eli²'s efforts in **finding more mentors for the senior design projects**, facilitating **closer peer mentor interactions** of CECS students, and supporting the eli²'s plans for an **innovation lab**.

7. Clustered Research Efforts; OLD and NEW:

In 2011-2012, Dean Simaan and the college's senior leadership supported two clustered research efforts: the Center of Advanced Turbomachinery Energy Research, led by Jay Kapat from MAE, and the Coastal Dynamics of Sea Level Rise, led by Scott Hagen. The rationale for the college's support of clustered research efforts is clear: increased external visibility for some of the stronger CECS research efforts, support for multi-investigator research teams, enhancement of collaborative efforts of faculty in important thrust areas, and recognition for prominent CECS research efforts that enhances the motivation for the lead faculty and participant faculty to accelerate their successes. As an Interim Dean, I supported these college's efforts by showcasing these centers at the recent college meetings and the Dean's Advisory Board meeting of November 17, 2012. My intent is to make sure that these clustered efforts succeed and pave the way for other clustered research efforts to be initiated and supported by the college and its senior leadership.

8. Center of Research in Computer Vision; NEW:

Prior to my appointment at the Interim Dean's post, UCF's President, UCF's Provost, and the UCF's Vice President of Research, created the Center for Research in Computer Vision, under the Directorship of Professor Mubarak Shah. Professor Shah is one of the most prolific researchers in CECS with a strong sustained scholarly research record and funding record. CRCV's vision is to promote basic research in computer vision and its applications in all related areas including National Defense and Intelligence, Homeland Security, Environmental Monitoring, Life Sciences, Biotechnology and Robotics. As an Interim Dean, I facilitated the creation of a Memorandum of Understanding, signed by all parties, of how this Center will operate and I allocated space in support of the Center's needs. Furthermore, I intend to continue supporting CRCV in attaining its vision. This effort is in line with the college's vision and associated mission.

9. NSF CAREER Award Mentorship Program; NEW:

Every year as part of an NSF funded program, called ICubed (I am a Co-PI and manager of this grant effort; Provost Waldrop is the PI), we conduct a panel discussion of prior and current NSF CAREER awardees where the panelists (past and current CAREER awardees) discuss their experiences with new potential CAREER proposers (young assistant professors from UCF). In 2011-2012 we (NSF ICubed and ORC) extended this panel discussion effort to a mentor-mentee NSF CAREER program, where we paired up past and current CAREER awardees with new potential CAREER proposers to strengthen the quality of proposals submitted to NSF. Anecdotal information from past year's proposers indicated that this mentor-mentee program is meaningful and useful. I intend to continue this activity for the

years to come. Support of our young assistant professors to establish their research agenda and identity is one of the guiding principles to attain the college's vision.

10. CECS Philanthropic Efforts; OLD and NEW:

Any Dean of a college will tell you that there are three sources of funding for a college to pursue its mission in support of its vision. In UCF's case these are: (a) state support and student tuition, (b) research funding, and (c) philanthropic support. I believe that a Dean's job is to make sure that he/she works closely with the UCF Foundation, the college faculty and the chairs in the pursuit of opportunities that will bring philanthropic funds to the College, in support of its needs. Since, I have assumed the position of the Interim Dean I have worked closely with Robin Knight (CECS Development Director), as well as with chairs and faculty to bring philanthropic support to the college that will sustain and enhance its many pursuits outlined in its mission. In total, the College received philanthropic support of \$4,670,000.

11. Creation of the Materials Science and Engineering (MSE) Department; NEW:

Provost Waldrop has, per suggestion of CECS external reviewers' recommendation, paved the way for the creation of a Materials Science and Engineering Department. I, as an Interim Dean, assumed the responsibility of carrying through the implementation details, associated with this action. These details included the appointment of an MSE chair, the separation of the teaching duties of the MAE (Mechanical and Aerospace) and MSE faculty (MSE faculty were previously associated with Mechanical, Materials and Aerospace Engineering (MMAE) Department), space allocation for the needs of the newly founded Department, the potential creation of an MSE undergraduate program (now MSE caters only to graduate students), and many others. In these efforts, the chairs of MAE, MSE, the Director of AMPAC and NSTC and the two CECS Associate Deans played and continue to play a pivotal role.

12. CECE Department Chair; NEW:

CECE is looking for a permanent chair. Last year's external search did not conclude with an appointment, despite the fact that a strong internal candidate has been identified. This year, the college is conducting an internal search for a CECE chair. Finding a permanent chair for CECE is an important issue that will bring needed stability in one of the college's most productive units.

13. APLU Pilot Metrics Program to Assess University's Economic Impact; NEW:

As part of my duties in the Office of Research and Commercialization was the coordination of a UCF effort related to an APLU (Association of Public and Land Grant Universities) pilot Metrics program that UCF participated in 2011-2012. In this effort UCF collected data, related to 50+ different performance metrics, and conducted a regional workshop of UCF stakeholders and regional economic leaders to assess their usefulness. As a result of this effort, in which 30 other universities participated, a smaller collection of eleven metrics have been identified as the most useful in assessing the universities' economic impact. Due to UCF's stellar performance in this pilot metrics program, I was invited to be an-at-large member of the Executive Committee of CICEP (Commission of Innovation Competitiveness and Economic Prosperity; CICEP is the commission tasked by APLU to coordinate the APLU's Pilot Metrics program). Furthermore, UCF was chosen as one of the two institutions (out of the 30 participating in the pilot program) to chair the Development and Maintenance Team effort that will see, in conjunction, with the Education and Outreach Team that the Metrics Program

effort moves forward, gains more acceptance and is appropriately disseminated to many more institutions around the nation. In support of this effort, I attended a national workshop in Washington DC (October 10, 2012) that informed the national community of the results of the Pilot Metrics program and recommended a reduced set of metrics to assess a university's economic impact. Furthermore, I attended the annual APLU meeting in Denver Colorado (November 11-13, 2012), where the CICEP Executive committee met, and the extended community of stakeholders have been informed about the results of the APLU Pilot Metrics program. Moving forward, I am in close collaboration with ORC, to continue the support of this effort with an immediate action item in preparing UCF for participating in an APLU-sponsored competition for the *Innovation and Economic Prosperity Award*. This award will honor in the 2013 APLU annual meeting an APLU member institution for achievements in contributing to the economic development of their region, state, and nation.

14. HENAAC; OLD and NEW:

The University of Central Florida, participated as an **Academic Co-Host for the 24th Annual Hispanic Engineers National Achievement Awards Conference** held at Disney's Coronado Springs Resort in Lake Buena Vista, Florida, October 11-13, 2012. On behalf of the faculty and students of the College of Engineering and Computer Science at UCF, I had the chance to welcome the conference participants in Orlando, both at the pre-conference summit in July 2012 and at the actual conference in October 2012.

The HENAAC conference was created as a means of identifying, honoring, and documenting the contributions of outstanding Hispanic American STEM professionals. The 24th conference's theme was "STEM, Excellence, and the Pursuit of Innovation", and focused on the ingenuity and innovation that is so desperately needed in the current and future technical workforce. The conference provided an excellent opportunity for many engineering and science college students throughout the nation, including UCF, to meet with corporate, government, military and academic leaders as the conference honored the nation's best and brightest engineers, scientists and technology professionals.

UCF ranks 20th in the number of engineering and computer science baccalaureate degrees awarded, 8th to Hispanics, 16th to African Americans, and 35th to women among 348 engineering colleges in the United States. According to the 2011 report published by the American Society of Engineering Education *Hispanic Business Magazine* rated the College of Engineering and Computer Science for the eighth consecutive year among the top 10 graduate engineering schools for Hispanic students. The reality is that CECS has always valued diversity as important in achieving the college's vision. I have personally been involved in many projects that emphasize diversity and I believe that the continued support of HENAAC's efforts is essential in attaining the college's vision.

Interim Assistant Vice President of Research (September 2011 – June 2012)

My duties are listed below (in random order):

1. Serving as a liaison between Centers & Institutes (C&I) and Academic Affairs (some of my duties included reviewing the content of C&I AESP documents and making recommendations

- for changes, helping with C&I HR related issues, coordinating the submission of C&I Annual reports, others).
2. Responsible for coordinating the sabbatical review process for faculty from C&I and Small Colleges.
 3. Participating as the ORC representative for the external review of academic programs.
 4. Participating as the ORC representative in the Policies and Procedures committee.
 5. Supporting faculty in the proposal development process (three examples of these are the DoD DURIP, NSF TUES and NSF CAREER grants).
 6. Coordinating an economic development meeting of UCF stakeholders from academia, industry, government, economic development leaders, and others to discuss and assess metrics that quantify the economic impact of universities in their region. This meeting was part of an APLU (Association of Public and Land Grant Universities) pilot Metrics program in which UCF participated in 2011-2012.
 7. Responsible for helping with the professional development of post-doctoral associates at UCF.
 8. Responsible for helping the National Science Olympiad, held at UCF in 2012, to generate funds for its annual event.
 9. Facilitating ORAU's (Oak Ridge Association of Universities) support of UCF by being the designated ORAU UCF representative.

Some of the noteworthy accomplishments during my tenure as an Interim Assistant VP were:

- A. The coordination of the economic development meeting at UCF, as a part of an **APLU pilot Metrics Program** in which UCF participated. Due to UCF's good work in this APLU pilot Metrics program, I was invited to serve as an at-large-member of the CICEP (Commission on Innovation, Competitiveness and Economic Prosperity) Executive committee. Furthermore, UCF was invited to present the results of this Pilot Metrics program at the summer 2012 CICEP Meeting in Nebraska and a Washington DC meeting in October 2012. Finally, UCF is now serving as one of the co-chair institutions of the CICEP Development and Maintenance Metrics team, whose goal is to further develop, maintain and disseminate the metrics chosen by the APLU pilot Metrics Program as most useful to assess a university's economic impact.
- B. A **Department of Labor (DOL) \$5M contract** awarded to UCF (Tom O'Neal (PI), Michael Georgiopoulos (Co-PI)), one of whose many goals is to offer funded internship opportunities to junior and senior CECS students with companies at the vicinity of UCF.
- C. Coordinated the efforts to generate support for the **National Science Olympiad (NSO)** that was held at UCF in 2012. The support was generated from Centers and Institutes at UCF, as well as other UCF units, and subsidized by the Office of the Vice President of Research and Commercialization. This effort generated approximately \$60,000 worth of cash funds for NSO 2012.
- D. The creation and coordination of a mentorship **NSF CAREER award program** at UCF. In this effort, with the help from ORC (Laurianne Torres, others), I received commitment from past and current NSF CAREER UCF awardees that they would serve as mentors of new faculty members pursuing an NSF CAREER award. Then, mentor/mentee pairs were established (10 pairs were formed) that worked together for the submission of competitive CAREER proposals by the young faculty (2012 CAREER awardees' cycle). Anecdotal feedback received from the young faculty who participated in this mentor/mentee program indicated that this program was meaningful and impactful.

EXCEL Program Director (2006-2012)

EXCEL is an NSF STEP grant (2006-2012): My duties were numerous and are listed below (in random order):

1. Responsible for the smooth operation of all EXCEL Program committees (Internal committee, External committee, Project committee, Assessment committee, Admissions and Recruitment committee, Undergraduate Research committee, Dissemination and Institutionalization committee),
2. Actively involved in the activities of the Internal committee (consists of UCF administrators, who are EXCEL stakeholders); The Internal committee is appraised yearly of EXCEL's successes,
3. Actively involved in the activities of the External committee (consists of administrators of community colleges which are feeders of students to UCF); This committee has as its goal to emulate EXCEL's successes at the community college level,
4. Actively involved in the activities of the Assessment committee; This committee has as its goal to design assessment instruments, apply the assessment instruments and analyze the results,
5. Actively involved in the activities of the Admissions/Recruiting committee; this committee is responsible for the creation of marketing materials, dissemination of the materials to prospective students, participation in recruiting events, and involvement in the selection of EXCEL students,
6. Actively involved in Undergraduate Research committee; this committee is responsible for recruiting faculty that will mentor EXCEL sophomore students in research, pairing up students and faculty, financially supporting the students' research and in collecting and reporting the results of this research,
7. Actively involved in the Dissemination and Institutionalization committee; this committee is responsible for the dissemination of EXCEL results in conference and journal venues, and in the marketing of EXCEL's results to interested stakeholders/potential sponsors,
8. Responsible for the oversight of the web-designers and database developers who are developing and maintaining the EXCEL program's and related programs' web-sites, as well as needed databases (EXCEL application database, EXCEL Performance Monitoring database),
9. Responsible for the budget oversight of the EXCEL grant (NSF funds and UCF matching funds).

The most notable achievement of my duties, as an EXCEL Director, is EXCEL's successful institutionalization and sustainability efforts. EXCEL's accomplishments have produced additional funding support for the student participants. EXCEL's additional support comes from sources such as UCF (annual funds of \$350k), NSF support through YES (\$600k from 2008-2013), Progress Energy support (\$75k from 2010-2012), Workforce Central Florida support (more than \$1M from 2009 to 2012), and a recent Department of Labor contract (\$5M from 2012 to 2016). EXCEL is a tremendous effort because of the large number of students recruited every year (200) and because of the many enhanced educational opportunities provided to them.

Graduate Coordinator of the EE and CpE programs in EECS (1999-2009)

This appointment lasted from Fall 1999 to Fall 2009. My duties were numerous and are listed below (in random order):

1. Responsible for curriculum development and new degrees development,
2. Responsible for advising graduate students about their program of study (all Masters non-thesis students and all Ph.D. students in the beginning years of their study),
3. Responsible for any graduate catalog changes pertinent to EE and CpE,
4. Responsible for administering the Qualifying exam for all the EE and CpE Ph.D. students,
5. Chair of the EECS graduate committee that dealt with pertinent graduate matters (a committee of 10 faculty from EECS),
6. Member of the CECS College Graduate Committee,
7. Responsible for the assessment of the EE and CpE graduate programs,
8. Responsible for coordinating the fellowship/research funding (Graduate College and EECS ones) for our incoming students,
9. Responsible for the final admission decision of all the incoming student applicants (MS and Ph.D. EE and CpE programs),
10. Responsible for responding to a variety of student inquiries about the EE and CpE programs,
11. Responsible for recruiting students in our programs (EECS recruiting activities, Graduate College activities),
12. Responsible for reporting activities/accomplishments of the graduate program in EECS faculty meetings,
13. Responsible for a personal basis interaction with the International Student Office to coordinate the quick mailing of the I-20 to our incoming fellowship and assistantship students.

Some of the notable accomplishments of the Graduate Office (during my tenure as the Graduate Coordinator):

- A. Were the **first programs** to introduce the **BS+MS** accelerated degrees,
- B. Had an **outstanding record of being awarded fellowship opportunities** allotted to incoming UCF Ph.D.'s by the Graduate College,
- C. **Coordinated a Review** (2008-2009) for *Discrimination Against Sex* requested by the Department of Energy (DOE),
- D. **Created an on-line system** for our faculty to review Ph.D. application files and express their interest for supporting incoming students.

To accentuate point B it is worth mentioning that in 2009 (the year that I exited the Graduate Coordinator position) the combined efforts of our EECS graduate office and faculty resulted in the following fellowship awards, offered by UCF's Graduate College, for our incoming EECS students: **5 Trustee awards** (\$18k stipend for two years, plus tuition waiver), **18 Presidential awards** (\$17k stipend for two years, plus tuition waiver), **9 Provost awards** (\$10k stipend for one year and tuition waiver). In summary, in 2009, EECS students were offered approximately half of this type of fellowships (Trustee, Presidential, Provost) available at the University level. To accentuate point C it is worth mentioning that numerous people were involved in the creation of this report (EECS, CECS, Balanoff's Equal Opportunity and Affirmative Action Programs Office). The report was completed in record time (6 months), it was voluminous, and we passed the review. The amount of time allotted for this report is commensurate to the amount of time typically allotted to prepare for a program's ABET accreditation. The administrative duties affiliated with the Graduate Coordinator position in EECS should be put into a perspective by stating that the EE and CpE programs have **166 Ph.D. students** and **161 Master students** (2009 UCF IR data), making **EE and CpE** (combined) **the largest Ph.D. program** at the University (2009 UCF IR data).

Budget Oversight and Supervision of Office Staff, Other Admin Duties

Dean of CECS:

As the Dean of CECS, I oversee the CECS budget. Three Associate Deans, six chairs, and the Dean's Office Directors and staff directly report to the Dean. In July 2022 with the implementation of the SET model the CECS HR Business Center and the CECS Finance Business Center were created; the Directors of these two centers report to the dean.

Meetings: I have regular meetings with all my direct reports either in groups and/or individual. Examples of group meetings include Chair's Council meeting, Dean's Council meeting and after SET with the Director of the HR and the Director of Finance Business centers.

I participate (at the University level) at the dean's council meeting at the provost's council meeting and at the leadership council meeting.

Interim Dean of CECS:

As an Interim Dean of CECS I oversaw the CECS budget. Two Associate Deans, six chairs, and the Dean's Office Directors and staff directly report to the Dean.

Meetings: I had regular meetings with all my direct reports either in groups and/or individual. Examples of group meetings included Chair's Council meeting, Dean's Council meeting.

I participated (at the University level) at the dean's council meeting and at the provost's council meeting.

EECS Graduate Coordinator's Office, NSF STEP (EXCEL) grant, and other contracts:

As a Graduate Coordinator of the EE and CpE programs in EECS (1999-2009) I **supervised one staff member**. Furthermore, in the time period of 2007-2009, I and the CS Graduate Coordinator, were **responsible for a portion of the EECS budget** allocated to support graduate teaching assistants in the Department (this was more than half (50%) of the total EECS yearly expenditures).

As a PI or Co-PI, I had the **budget oversight for EXCEL**, as well as the budget oversights of **four other contracts** (NSF grants). The **total budget** of EXCEL and all my active contracts that I personally oversaw was more than **\$2M**. In particular, the EXCEL budget supported 10 summer faculty stipends, the stipends of 10 graduate teaching assistants, and the stipends of approximately 50 EXCEL sophomore students per year who pursue paid undergraduate research experiences with a UCF STEM professor.

TEACHING

Courses Taught

While at UCF, I have taught the following courses. My teaching responsibilities have diminished after I assumed the responsibilities of the dean. For a number of years now I am not teaching any courses in CECS, due to the many administrative responsibilities as the dean.

- 1) **EEL 3552:** Signal Analysis and Communications (senior undergraduate level).
- 2) **EEL 3122:** Electrical Networks (junior undergraduate level).
- 3) **EGN 3373:** Principles of Electrical Engineering (sophomore undergraduate level)

- 4) **EEL 4512:** Communication Systems (senior undergraduate level).
- 5) **EEL 5542:** Random Processes I (graduate level).
- 6) **EEL 6543:** Random Processes II (graduate level).
- 7) **EEL 5937:** Special Topics in Telecommunications (graduate level).
- 8) **EEL 6812:** Introduction to Neural Networks (graduate level).
- 9) **EEL 4515:** Digital Communications (senior undergraduate level).
- 10) **EEL 5937:** Wireless Communications (graduate level).
- 11) **EEL 5825:** Pattern Recognition (graduate level)
- 12) **EEL 4750:** Fundamentals of DSP (senior undergraduate level)
- 13) **EEL 4818(H):** Machine Learning I (senior undergraduate level); co-teaching it consistently every Fall semester since Fall of 2003.
- 14) **EEL 4817(H):** Machine Learning II (senior undergraduate level); co-teaching it consistently every Spring semester since Spring of 2004.

Labs Developed

- 1) In conjunction with other colleagues at UCF I helped in establishing and equipping the Communications Research Lab. Currently the lab has 3 Sun workstations, 7 high end PCs, laser printers, etc. Some of the research conducted in the lab involves analysis and simulation of existing and newly developed communication systems. The rest of the research involves the analysis of existing and newly developed neural networks with emphasis on applying this technology for communication applications.
- 2) In conjunction with other colleagues at UCF I helped in establishing and equipping the Intelligent Systems Lab (ISL). Most of the research currently conducted at the lab involves the modeling of computer generated forces for battlefield simulations. The technologies used to achieve this goal are symbolic reasoning and neural networks.
- 3) I have also contributed in the Computational Electromagnetics and Neural Networks Research lab established by other colleagues at UCF. Through my efforts we obtained 10 licenses of the Neuralworks software that allows us to test a number of neural network models for electromagnetics and communication applications.
- 4) I have developed (in the Spring of 2001), in conjunction with UCF students, a new version of the EEL 3552 (Signals and Systems class) lab manual. This manual has been revamped since then and it is in use for the EEL 3552 class.
- 5) I have developed (in the Fall of 2001), in conjunction with UCF colleagues and UCF a new lab manual for the EEL 4515 class (Digital Communications). This manual has been revamped since then and it is currently in use for the EEL 3552 class.
- 6) I have created (since 2007) the ML² (Machine Learning lab) at UCF. Within this lab, my students and I are conducting research in the field of Machine Learning with specific emphasis on neural networks, neuro-evolutionary techniques, data-mining, and intelligent agents.

Short Courses Taught

- 1) “Introduction to Neural Networks” taught at the 1994 Southcon Conference in Orlando, FL, in collaboration with Dr. Gregory Heileman.
- 2) “Introduction to Neural Networks”, taught at the 1995 SPIE conference in Orlando, FL, in collaboration with Dr. Gregory L. Heileman.
- 3) “Introduction to Neural Networks”, taught at the ISE 95 conference in Albuquerque, NM.
- 4) “Introduction to Neural Networks”, taught at the SPIE 96 conference in Orlando, FL, in collaboration with Dr. Gregory Heileman.
- 5) “Neural Networks and Applications”, taught at Lockheed Martin, January 1997.
- 6) “Theory, Applications and Current Trends in Neurocomputing,” taught at the 1997 Systems, Man and Cybernetics conference, Orlando, FL.
- 7) “Applications of Neural Networks in Electromagnetics”, taught at the June 1998 IEEE AP/USRI Symposium, Atlanta, GA, in collaboration with Dr. Christos Christodoulou.

Graduate , Undergraduate Students, K-12 Teachers

I have advised/advising the research (chair of dissertation committee) of **15 Ph.D. students** (all completed). All these students were EE (Electrical Engineering) and CpE (Computer Engineering) students.

I have actively advised the research (member of the dissertation committee) of **8 Ph.D. students**. All of these students were EE, CpE, or IEMS students.

I have advised/advising the research (chair of thesis committee) of **18 Masters students** (18 to completion). All of these students were EE or CpE students.

I have advised/advising the research of **74 undergraduate students**.

Ph.D. dissertations

- 1) **Chair** of the Ph.D. committee for the Ph.D. student **Juxin Huang**.

Research area: Neural Networks.

Dissertation Title: Theoretical analysis of ART neural networks and their applications in frequency selective surfaces (FSS).

Completed: Spring 1994.

Published: Juxin Huang’s research at UCF produced **7 journal** and **8 conference papers**.

Employment: Currently, Juxin Huang is a DSP R&D Engineer at Hewlett Packard in California.

- 2) **Chair** of the Ph.D. committee for the Ph.D. student **George Bebis**.

Research area: Computer Vision, Neural Networks.

Dissertation Title: Indexing-Based Object Recognition.

Completed: Summer 1996.

Publications: George Bebis' research at UCF produced **7 journal** and **8 conference papers**.

Employment: Currently, George Bebis is an Assistant Professor at the University of Nevada, Reno, NV.

3) **Chair** of the Ph.D. committee for the Ph.D. student **Issam Dagher**.

Research area: Neural Networks.

Dissertation Title: Properties of learning of the Fuzzy ART neural network and improvements of the generalization performance of the Fuzzy ARTMAP neural network.

Completed: Fall 1997.

Publications: Issam Dagher's research at UCF produced **2 journal** and **3 conference papers**.

Employment: Currently, Issam Dagher is an Assistant Professor of Engineering at the University of Balamand, Elkoura, Lebanon.

4) **Chair** of the Ph.D. committee for the Ph.D. student **Georgios Anagnostopoulos**.

Research area: ART Neural networks.

Dissertation Title: Novel Approaches in Adaptive Resonance Theory for machine Learning.

Completed: Summer 2001.

Publications: Georgios Anagnostopoulos' research at UCF produced **2 journal** and **16 conference papers**.

Employment: Currently Georgios Anagnostopoulos is an Associate Professor at FIT (Department of ECE).

5) **Chair** of the Ph.D. committee for the Ph.D. student **Jose Castro**.

Research Area: ART Neural Networks.

Dissertation Title: "Modifications of the Fuzzy--ARTMAP Algorithm For Distributed Learning in Large Data Sets".

Completed: Spring 2004.

Publications: Jose Castro's research at UCF produced **3 journal** and **9 conference papers**.

Employment: Currently Jose Castro is an Assistant Professor at the Technological University of Costa Rica and Director of the Institute of Informatics.

6) **Chair** of the Ph.D. committee for the Ph.D. student **Ahmad Al-Daraiseh**.

Research Area: Machine Learning.

Dissertation Title: Genetically Engineered ART Neural Networks

Completion Date: Spring 06.

Publications: Ahmad Al-Dairaseh's research at UCF has produced **2 journal**, **1 book chapter** and **2 conference papers**.

Employment: Currently, Ahmad Al-Daraiseh is an Assistant Professor at King Saud University, Saudi Arabia.

7) **Chair** of the Ph.D. committee for the Ph.D. student **Mingyu Zhong**.

Research Area: Machine Learning with Emphasis on Decision Tree Classifiers.

Completion Date: Summer of 07.

Publications: Mingyu Zhong's research at UCF has produced **3 journal papers**, **1 book chapter** and **6 conference papers**.

Employment: Mingyu Zhong is with Google Corporation

8) **Chair** of the Ph.D. committee for the Ph.D. student **Assem Kaylani**.

Research Area: Machine Learning with emphasis on genetically engineered ART neural networks.

Completion Date: Summer of 2008.

Publications: Assem Kaylani's research has produced **3 journal papers, 1 book chapter** and **5 conference papers**.

Employment: Assem Kaylani is with GE at Melbourne, Florida.

9) **Chair** of the Ph.D. committee for the Ph.D. student **Anna Koufakou**.

Research Area: Machine Learning with emphasis on Association Mining and Distributed Computing.

Completion Date: Summer of 2009.

Publications: Anna Koufakou has produced **3 journal papers, 1 book chapter** and **6 conference papers**.

Employment: Anna Koufakou is an Assistant Professor in the College of Engineering at the Gulf Coast University.

10) **Chair** of the Ph.D. committee for the Ph.D. student **Jimmy Secretan**.

Research Area: Machine Learning with on privacy preserving data-mining and grid-computing.

Completion Date: Fall 2009.

Publications: Jimmy Secretan has produced **3 journal papers, 2 book chapters** and **8 conference papers**.

Employment: Jimmy Secretan is VP Of Engineering at Sonobi, Orlando, FL.

11) **Chair** of the Ph.D. committee for the Ph.D. student **John Reeder**.

Research Area: Machine Learning with Emphasis on Life Long Learning neural network architectures.

Completion Date: Summer 2013.

Publications: Has published **1 conference paper and 1 journal paper**.

Employment: SPAR WAR Systems Center, San Diego California.

12) **Chair** of the Ph.D. committee for the Ph.D. student **Chris Sentelle**; co-chair is Professor Georgios Anagnostopoulos.

Research Area: Machine Learning with emphasis on Support Vector Machines.

Completion Date: Spring 2014.

Publications: He has published **3 journal papers and 5 conference papers**.

Employment: He works at L3 Communications (Senior Scientist), Orlando, FL.

13) **Chair** of the Ph.D. committee for the Ph.D. student **Cong Li**; co-chair is Professor Georgios Anagnostopoulos.

Research Area: Machine Learning.

Completion Date: Fall 2014.

Publications: He has published **4 journal papers and 5 conference papers**.

Employment: He works at Google, Inc., Mountain View, California.

14) **Chair** of the Ph.D. committee for the Ph.D. student **Yinjie Huang**; co-chair is Professor Georgios Anagnostopoulos.

Research Area: Machine Learning.

Completion Date: Summer of 2016.

Publications: He has **3 published conference papers**.

Employment: He works at Twitter, San Francisco, CA.

15) **Chair** of the Ph.D. committee for the Ph.D. student **Tiantian Zhang**; co-chair is Professor Georgios Anagnostopoulos.

Research Area: Machine Learning.

Completion Date: Spring 2016.

Publications: She has published **2 journals, and 5 conference papers.**

Employment: She works at Google, Inc., Mountain View, California.

16) I had actively advised 7 other Ph.D. UCF students, as a member of their Ph.D. dissertation committee. Their names are listed below.

- (a) **Heileman (CpE)**; graduated 1990.
- (b) **Ho (EE)**; graduated 1995.
- (c) **Zooghby (EE)**; graduated 1998.
- (d) **Henninger (CpE)**; graduated Fall 2000.
- (e) **Johnson (IEMS)**; graduated Spring of 2001.
- (f) **Charalampidis (EE)**; graduated Summer of 2001.
- (g) **Yousefi (IEMS)**; graduated Summer of 2017.
- (h) **Sedghi (ECE)**; graduated Fall 2020.

The major advisor for these students was another colleague from UCF. I have published with each one of these students while they were pursuing their Ph.D. degree, and with some after they have earned their Doctorate (please see publication list in my resume).

Master's theses

- 1) "A simulation study of a limited sensing random access algorithm for a local area network with voice users," by Robert M. Spillers, Fall 1987 (**Chair** of the Master's thesis committee).
- 2) "A study of the generalization in multi-layer feed-forward neural networks," by Frank G. Gerrity, Spring 1989 (**Chair** of Research Report committee).
- 3) "Performance of BCH and convolutional codes in direct sequence spread spectrum packet radio networks," by Hugh T. Owens, Spring 1989 (**Chair** of the Master's thesis committee).
- 4) "A simulation study of the ETHERNET and GBRAM LAN access protocols for networking real-time simulation devices," by Nicos Christou, Fall 1989 (**Chair** of the Master's thesis committee).
- 5) "Comparison of BCH and convolutional codes in a DS-SS multiple access environment," by Bancroft O. B. Smith, Fall 1990 (**Chair** of the Master's thesis committee).
- 6) "Self-organizing neural network implemented in analog circuitry requires supervisory, scaling and parametric optimization attributable to 1/f noise," by Erich Nold, Fall 1990 (**Chair** of the Master's thesis committee).

- 7) “A comprehensive study of Back-Prop Algorithm and modifications,” by Ali Sidani, Fall 1993 (**Chair** of the Master's thesis committee).
- 8) “Analysis and simulation of the Fuzzy ART and Fuzzy ARTMAP artificial neural network models,” by Hans Fernlund, Summer 1995 (**Chair** of the Master's thesis committee).
- 9) “Optimal linear combinations of experts”, by G. Anagnostopoulos, Spring 1997 (**Chair** of the Masters thesis committee).
- 10) “Short term electrical load forecasting using a Fuzzy ARTMAP neural network,” by Stefan Kamran, Fall 1997 (**Chair** of the Master's thesis committee).
- 11) “Labview Implementation of a Neural Network Based Solution to the Angle of Arrival Estimation Problem”, by Lin Haralambous, Fall 1999. (**Chair** of the Master's thesis committee).
- 12) “Cross-Validation in Fuzzy ARTMAP for Large Databases”, by Anna Koufakou, Fall 2000, (**Chair** of the Master's thesis committee).
- 13) “Extensive Experimentation with the Neural Network Based Smart Antenna Multiple Source Tracking (N-MUST) Algorithm”, by Sureshkumar Ramasamy. Completed all thesis requirements in the Summer 2001. (**Chair** of the Master's thesis committee).
- 14) “Extensive Experimentation of the Angle of Arrival Estimation Stage of the Neural Network Based Smart Antenna Multiple Source Tracking (N-MUST) Algorithm”, by Aliasgar Birader. Completed all thesis requirements in the Summer 2001. (**Chair** of the Master's thesis committee).
- 15) “Exemplar-Based Pattern Recognition via Semi-Supervised Learning”, by Madan Bharadwaj. Completed all thesis requirements in the Fall of 2003. (**Chair** of the Master’s thesis committee).
- 16) “Improving the Speed of Convergence of the RTRL Recurrent Neural Network”, by Aniket Vartak. Completed all thesis requirements in the Summer of 2004. (**Chair** of the Master’s thesis committee; **Co-Chair:** Georgios Anagnostopoulos from FIT).
- 17) “Comparisons of supervised Gaussian ARTMAP and semi-supervised Gaussian ARTMAP”, by Roopa Chalasani. Completed all thesis requirements in the Spring of 2005 (**Chair** of the Master’s thesis committee).
- 18) “Learning Kernel-Based Approximate Isometries”, by Mahlagha Sedghi. Completed all thesis requirements in Summer 2017 (**Chair** of the master’s thesis committee; co-chair is Georgios Anagnostopoulos).

Undergraduate Students

A total of 74 (this does not correspond to distinct students because some students have worked with me more than once) undergraduate students have been advised by me in Machine Learning research. Some of these students were co-advised by Professor Georgios Anagnostopoulos. Some of the students have produced a definitive outcome, which is

reported, others did not, because there was not sufficient time or involvement to produce such an outcome.

1) Kristen Cannava (UCF), Senior Design Student (Fall 2003, Spring 2004). Senior Design Topic: *Comparison of ssFAM and sssFAM Classifiers*. Advisor: Michael Georgiopoulos, Co-Advisor: Georgios Anagnostopoulos.

2) Kipp Carr (UCF), Senior Design Student (Fall 2003, Spring 2004). Senior Design Topic: *Comparison of ssFAM and sssFAM Classifiers*. Advisor: Michael Georgiopoulos, Co-Advisor: Georgios Anagnostopoulos.

3) Robert Pescatore (UCF), Senior Design Student (Fall 2003, Spring 2004). Senior Design Topic: *Comparison of ssFAM and sssFAM Classifiers*. Advisor: Michael Georgiopoulos, Co-Advisor: Georgios Anagnostopoulos.

Note: A senior design report was produced as a result of the work by Kristen Cannava, Kipp Carr and Robert Pescatore. Joshua Hecker, Ian Maidhof, and Philip Shibly. The senior design work of Kristen Cannava, Kip Carr, and Robert Pescatore was presented and published at the **2004 ANNIE (Artificial Neural Networks in Engineering) conference**, held at St. Louis, MI, November 2004.

4) Phillip Shibly (UCF), Spring 2004 Machine Learning I (EEL 4817(H)) student. Research Project: *Probabilistic Neural Networks: Implementation on a Beowulf Cluster*. Advisor: Michael Georgiopoulos.

Note: A project report was produced as a result of Phillip Shibly's work.

5) Bryan Rosander (UCF), Spring 2004 Machine Learning II (EEL 4817(H)) student. Research Project: *Comparison of GAM, micro-ARTMAP, ssFAM, ssEAM and ssGAM Classifiers*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

Note: The research project work by Bryan Rosander was presented and published at the **2005 ANNIE (Artificial Neural Networks in Engineering) conference**, held at St. Louis, MI, November 2005. Furthermore, Bryan Rosander's work has been published at the **World Congress for Computational Intelligence 2006 [WCCI 2006]** and has been also published at the **Neural Networks journal**.

6) Jimmy Secretan (UCF), Spring 2004 Machine Learning II (EEL 4817(H)) student. Research Project: *Pipelining of Fuzzy ARTMAP Neural Networks without Match-Tracking*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Jose Castro.

Note: The research project work by Jimmy Secretan was presented at the **2004 World Congress of Nonlinear Analysis conference**, held in Orlando, FL in July 2004. This work was also presented and published at the **2004 ANNIE (Artificial Neural Networks in Engineering) conference**, held at St. Louis, MI, November 2004. Finally, portion of this work was published at the **journal of Nonlinear Analysis in 2005**, and another portion of this work has **been published at the Neural Networks journal**.

7) Gary Stein (UCF), Spring 2004 Machine Learning II (EEL 4817(H)) student. Research Project: *GNNCAD: Gary's Neural Network Classifier and Driver*. Advisor: Michael Georgiopoulos.

Note: A project report was produced as a result of Gary Stein's work.

8) John Reeder (UCF), Spring 2005 Machine Learning II (EEL 4817(H)) student, Honors Student. Honors Thesis: *Hilbert Space Filing Curve Nearest Neighbor*. Advisor: Michael Georgiopoulos.

9) Ketema Harris (SCC), Spring 2004 Seminole Community College (SCC) student. Ketema worked jointly with John Reeder on the topic of Nearest Neighbor Classifiers. Ketema Harris is now pursuing his BS degree at the University of Central Florida (computer Engineering program).

Note: An Honor's thesis project report was produced as a result of John Reeder's work.

10) Joshua Hecker (UCF), Fall 2004, Spring 2005 senior design student: Senior Design Project: *Experiments with the Probabilistic Neural Network: Implementation on a Beowulf Cluster*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

11) Ian Maidhof (UCF), Fall 2004, Spring 2005 senior design student, Spring 2005 Machine Learning II (EEL 4817(H)) student: Senior Design Project: *Experiments with the Probabilistic Neural Network: Implementation on a Beowulf Cluster*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

12) Philip Shibly (UCF), Fall 2004, Spring 2005 senior design student, Spring 2005 Machine Learning II (EEL 4817(H)) student: Senior Design Project: *Experiments with the Probabilistic Neural Network (PNN): Implementation on a Beowulf Cluster*. Advisor: Michael Georgiopoulos, Graduate Student Mentors: Mingyu Zhong and Jimmy Secretan.

Note: A senior design report was produced as a result of the work by Joshua Hecker, Ian Maidhof, and Philip Shibly. Part of the research project work by Joshua Hecker, Ian Maidhof, and Philip Shibly (the one pertaining to the PNN) was presented and published at the **2005 ANNIE (Artificial Neural Networks in Engineering) conference**, held at St. Louis, MI, November 2005. Another part of the research project work by Joshua Hecker, Ian Maidhof, and Philip Shibly (the one pertaining to the implementation of the PNN on the Beowulf cluster) has also been published at the **World Congress for Computational Intelligence 2006 [WCCI 2006]**.

13) Wyatt Herbert (UCF), Summer 2004, Fall 2004 senior design student. Senior Design Project: *Experiments with Decision Tree Classifiers: Discretization of Numerical Attributes*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

14) Kimberley Robinson (UCF), Summer 2004, Fall 2004 senior design student. Senior Design Project: *Experiments with Decision Tree Classifiers: Discretization of Numerical Attributes*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

15) Michael Barbieri (UCF), Summer 2004, Fall 2004 senior design student. Senior Design Project: *Experiments with Decision Tree Classifiers: Discretization of Numerical Attributes*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

16) Kenneth Dayton (UCF), Summer 2004, Fall 2004 senior design student. Senior Design Project: *Experiments with Decision Tree Classifiers: Discretization of Numerical Attributes*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

Note: A senior design report was produced as a result of the work by Wyatt Herbert, Kimberley Johnson, Michael Barbieri and Kenneth Dayton.

17) L. Quang (FIT), Spring 2004, Summer 2004, and Fall 2004 senior design student from the Florida Institute of Technology (FIT). Senior Design Project: *Experiments with Decision Tree Classifiers: Discretization of Numerical Attributes*. Advisor: Georgios Anagnostopoulos, Co-Advisor: Michael Georgiopoulos.

Note: The research project work by L. Quang was presented and published at the **2005 International Joint Conference on Neural Networks (IJCNN 2005)**, held in Montreal, Canada, in July 2005

18) Joe Tapia (UCF), Fall 2004, Spring 2005 senior design student, and Spring 2005 Machine learning II (EEL 4817(H)) student: Senior Design Project: *Experiments with the ART Neural Networks: Implementation on a Beowulf Cluster*. Advisor: Michael Georgiopoulos, Graduate Student Mentors: Anna Koufakou and Jimmy Secretan.

19) Brian Huber (UCF), Fall 2004, Spring 2005 senior design student, and Spring 2005 Machine learning II (EEL 4817(H)) student: Senior Design Project: *Experiments with the ART Neural Networks: Implementation on a Beowulf Cluster*. Advisor: Michael Georgiopoulos, Graduate Student Mentors: Anna Koufakou and Jimmy Secretan.

20) Amit Chadha (UCF), Fall 2004, Spring 2005 senior design student, and Spring 2005 Machine learning II (EEL 4817(H)) student: Senior Design Project: *Experiments with the ART Neural Networks: Implementation on a Beowulf Cluster*. Advisor: Michael Georgiopoulos, Graduate Student Mentors: Anna Koufakou and Jimmy Secretan.

Note: A senior design report was produced as a result of the work by Joe Tapia, Brian Huber, and Amit Chadha. Part of the research project work by Joe Tapia, Brian Huber and Amit Chadha (the one pertaining to the implementation of Fuzzy ARTMAP on a Beowulf cluster) was presented and published at the **2005 International Joint Conference on Neural Networks (IJCNN 2005)**, held in Montreal, Canada, in July 2005. Another part of the work by Joe Tapia, Brian Huber and Amit Chadha (the one pertaining to the implementation of no-match tracking ART architectures on a Beowulf cluster) was presented and published at the **2005 ANNIE (Artificial Neural Networks in Engineering) conference**, held at St. Louis, MI, November 2005.

21) David Coggeshall (UCF) Summer 2005, Fall 2005 senior design student: Senior Design Project: *Experiments with the GRNN Neural Networks*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

22) Ehsan Ghaneie (UCF), Summer 2005, Fall 2005 senior design student: Senior Design Project: *Experiments with the GRNN Neural Networks*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

23) Thomas Pope (UCF), Summer 2005, Fall 2005 senior design student: Senior Design Project: *Experiments with the GRNN Neural Networks*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

24) Mark A. Rivera (UCF), Summer 2005, Fall 2005 senior design student: Senior Design Project: *Experiments with the GRNN Neural Networks*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

Note: A senior design report was produced as a result of the work by David Coggeshall, Ehsan Ghaneie, Thomas Pope, and Mark Rivera. The research project work by David Coggeshall, Ehsan Ghaneie, Thomas Pope and Mark A. Rivera has been published at the **World Congress for Computational Intelligence 2006 [WCCI 2006]**. Furthermore, their work has **published at the Neural Computation journal**.

25) Ryan Faircloth (UCF), Summer 2005, Fall 2005 Independent Study student: Research Project: *Experiments with the Simple Bayesian Classifier*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

26) Philip Berkowitz (UCF), Summer 2005, Fall 2005 Independent Study student: Research Project: *Experiments with the Simple Bayesian Classifier*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

Note: Due to lack of time Ryan Faircloth and Phillip Berkowitz did not produce a technical report describing their work. However they created and documented the Machine Learning code that they have produced as part of their Machine Learning project work.

27) Rita Fuston (SCC), Summer 2005, Fall 2005, Spring 2006 Seminole Community College (SCC) student: *Experiments with the Simple Bayesian Classifier*. Advisor: Michael Georgiopoulos. Rita will finish her part of the work in Spring 2006, thus coinciding with the time of completion of the work by Ryan Faircloth and Philip Berkowitz.

Note: Rita Fuston has created a power-point presentation, explaining in detail the results of her work in the Machine Learning project that she focused on.

28) Bryan Farley (UCF), Fall 2005, Spring 2006 senior design student: Senior Design Project: *Experiments with Quantitative Association Rule Mining Algorithms*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Anna Koufakou.

29) Joe Halk (UCF), Summer 2005, Fall 2005 senior design student: Senior Design Project: *Experiments with Quantitative Association Rule Mining Algorithms*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Anna Koufakou.

30) Khanh Bakthy (UCF), Summer 2005, Fall 2005 senior design student: Senior Design Project: *Experiments with Quantitative Association Rule Mining Algorithms*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Anna Koufakou.

Note: A senior design report was produced as a result of the work by Bryan Farley, Joe Halk, and Khanh Bakthy.

31) Brian Becker (UCF), Spring 2006 Machine learning II (EEL 4817(H)) student. Research Project: Object Recognition in a Robotic Vision System using ART Neural Network Classifiers. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Anna Koufakou.

Note: A project report was produced as a result of the work that Brian Becker accomplished in the Machine Learning II class.

32) Siu Lun Hong (UCF), Spring 2006, Summer 2006 Honors student: Honors Thesis Research Project: *Experiments with the k-Means Clustering Algorithms*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Chris Sentelle.

Note: His work is published at **11th IASTED International Conference on Artificial Intelligence and Soft Computing (ASC 2007)**, Malorca, Spain, September 2007.

33) Jason Beck (UCF), Spring 2006, Summer 2006, Fall 2006 Honors student: Honors Thesis Research Project: *Experiments with the Regression Trees and MARS Algorithm*. Advisor: Michael Georgiopoulos, Graduate Student Mentor: Mingyu Zhong.

Note: Jason Beck's Honors thesis was completed in the Summer of 2007.

34) Enrique Ortiz (UCF), Spring 2006, Summer 2006, Fall 2006 Honors student: Honors Thesis Research Project: *Outlier Detection Algorithms for Categorical Data*. Advisor: Michael Georgiopoulos, Graduate Student Mentors: Anna Koufakou.

Note: Ortiz's thesis was completed in the Spring of 2007. His work was published at the **International Conference on Tools of Artificial Intelligence (ICTAI)**, held in Patras, in October of 2007.

35) Jonathan Carbone (UCF), Spring 2007, Machine Learning II (EEL 4817). Research Project: *Visual Obstacle Detection and Classification using Neural Networks*. Advisor; Michael Georgiopoulos.

Note: A project report was produced as a result of the work that Jonathan Carbone accomplished in the Machine Learning II class.

36) Maria Garcia (University of Puerto Rico), Summer 2007 REU student. Research Project: *Backward Adjusting Strategy for the C4.5 Decision Tree Classifiers*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Mingyu Zhong.

37) Jason Beck (UCF), Summer 2007 REU student. Research Project: *Backward Adjusting Strategy for the C4.5 Decision Tree Classifiers*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Mingyu Zhong.

Note: The REU work by Jason and Maria is **published at the 21st Florida Artificial Intelligence Research Symposium (FLAIRS)**, May 14-17, 2008, Coconut Grove, FL.

38) Kelvin Cardona (University of Puerto Rico), Summer 2007 REU student. Research Project: *A Grid Based System for Data Mining using Map Reduce*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Jimmy Secretan.

Note: The REU work by Kelvin Cardonna is **published at the 2008 International Joint Conference on Neural Networks**, Hong Kong, China, June 1-6, 2008. Furthermore, a journal paper, related to Cardona's work was published in the **journal of Future Computer Generation Systems, 2010**.

39) Kaniel Martin (UCF), Spring 2008. Research Project: *The Simple Bayesian Classifier*. Kaniel is an EXCEL sophomore student, pursuing undergraduate experiences in my lab.

Note: Kaniel Martin has presented his work at the 2009 Showcase of Undergraduate Research Experiences.

40) Roberto Miguez (UCF), Spring 2008, Machine Learning II (EEL 4817) and SMART student. Research Project: *Genetically Engineered Probabilistic Neural Networks*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Assem Kaylani.

41) Brian Spears (UCF), Spring 2008, Machine Learning II (EEL 4817). Research Project: *Genetically Engineered Probabilistic Neural Networks*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Assem Kaylani.

Note: The work by Roberto Miguez and Brian Spears was presented at the 2008 WCNA conference. Miguez's work was also published at the **journal of Nonlinear Analysis, 2010**.

42) Laitaras Stokes, 2009 EXCEL URE Student. Research Project: *Particle Swarm Optimization*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Mahsa Maghami.

Note: Laitaras Stokes submitted a 2-page report, explaining the details of his research experience, to Dr. Chris Parkinson, EXCEL URE Coordinator, at the end of Spring 2009.

43) Francesco Buzzetta, 2009 EXCEL URE Student. Research Project: *Reinforcement Learning Techniques*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: John Reeder.

Note: Francesco Buzzetta submitted a 2-page report, explaining the details of his research experience, to Dr. Chris Parkinson, EXCEL URE Coordinator, at the end of Spring 2009.

44) Brad Higgins, 2009 Current Topics in Machine Learning II student. Research Project: *Particle Swarm Optimization of FAM and ssFAM Parameters*. Advisor: Michael Georgiopoulos.

Note: In mid-summer 2009, Brad Higgins, submitted a 10-page report delineating the results of his work.

46) Roberto Miguez (University of Central Florida), Summer 2008 REU Student. Research Project: *Interactively Evolved Modular Neural Networks for Agent Control*. Advisor: Michael Georgiopoulos. Graduate Student: John Reeder.

47) Jessica C. Sparks (Purdue University), Summer 2008 REU Student. Research Project: *Interactively Evolved Modular Neural Networks for Agent Control*. Advisor: Michael Georgiopoulos. Graduate Student: John Reeder.

Note: Roberto Miguez and Jessica C. Sparks, working as a team in the 2008 AMALTHEA REU Program, produced a technical report delineating their research. Their work has been **published** at the **2008 IEEE Symposium on Computational Intelligence and Games (CIG 2008)**, Perth, Australia, December 15-18, 2008.

48) Michelle S. Fox (Milwaukee School of Engineering), Summer 2008 REU Student. Research Project: *Detecting Outliers in Categorical Data Sets using Non-Derivable Itemsets*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Anna Koufakou.

49) Gary Gramajo (Florida State University), Summer 2008 REU Student. Research Project: *Detecting Outliers in Categorical Data Sets using Non-Derivable Itemsets*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Anna Koufakou.

Note: Michelle Fox and Gary Gramajo, working as a team in the 2008 AMALTHEA REU Program, produced a technical report delineating their research. Their work has been **published** at the **2009 DMIN conference**, Las Vegas, Nevada, July 13-16, 2009.

50) Eric P. Astor (Swarthmore University), Summer 2008 REU Student. Research Project: *Iterative inner solvers for revised simplex SVM training*. Advisor: Michael Georgiopoulos, Graduate Mentor: Ruben Ramirez-Padron.

51) Winnie J. Lung (Texas A&M University), Summer 2008 REU Student. Research Project: Iterative inner solvers for revised simplex SVM training. Advisor: Michael Georgiopoulos, Graduate Mentor: Ruben Ramirez-Padron.

Note: Eric P. Astor and Winnie J. Lung, working as a team in the 2008 AMALTHEA REU Program, produced a technical report delineating their research.

52) Adina Rubinoff (University of Rochester), Summer 2009 REU student. Research Project: *Social Network Analysis for Target Recognition in Swarm Robotics*. Advisor Michael Georgiopoulos. Graduate Student Mentor: Mahsa Maghami.

53) Mike Koval (Rutgers University), Summer 2009 REU student. Research Project: *Social Network Analysis for Target Recognition in Swarm Robotics*. Advisor Michael Georgiopoulos. Graduate Student Mentor: Mahsa Maghami.

Note: Adina Rubinoff and Mike Koval, working as a team in the 2009 AMALTHEA REU Program, produced a technical report delineating their research.

54) David Foregger (Wesleyan University), Summer 2009 REU student. Research Project: *Kernel Similarity Scores for Outlier Detection in Mixed Attribute Data-Sets*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Ruben Ramirez-Padron.

55) Julie L. Manuel (University of South Florida), Summer 2009 REU student. Research Project: *Kernel Similarity Scores for Outlier Detection in Mixed Attribute Data-Sets*. Advisor: Michael Georgiopoulos. Graduate Student Mentor: Ruben Ramirez-Padron.

Note: David Foregger and Julie Manuel, working as a team in the 2009 AMALTHEA REU Program, produced a technical report delineating their research. Their work was published at the **Ninth International Symposium on Intelligent Data Analysis**, Tucson, Arizona, 19-21, May 2010.

56) Giselle Borrero, 09-10, 10-11 YES Student. Research Project: *Evolutional Approaches to Global Function Optimization*. Advisor: Michael Georgiopoulos.

Note: Giselle Borrero participated in the 2010 SURE event. Giselle has submitted a technical report delineating her research. Giselle Borrero participated in the 2011 SURE event. Giselle's work was published at the GECCO 2012 conference.

57) Talitha Rubio, 09-10, 10-11 RAMP Student. Research Project: *Multi-objective Optimization of the Probabilistic Neural Network*. Advisor: Michael Georgiopoulos.

Note: Talitha Rubio participated in the SURE 2010 event. Her work was published at the IJCNN 2011 conference. Talitha Rubio participated in the SURE 2011 event.

58) Stacy Glass, 2010 EXCEL URE Student. Research Project: *Particle Swarm Optimization Approaches to Global Function Optimization*. Advisor: Michael Georgiopoulos.

59) Kenzo Mendoza, 2010 EXCEL URE Student. Research Project: *Particle Swarm Optimization Approaches to Global Function Optimization Problems*.

Note: Stacy and Kenzo produced a technical report at the end of Summer 2010. They participated with a poster in SURE 2011.

60) Charles Newton, Spring 2011, Machine Learning II (EEL 4817H) student. Research Project: *Evolutionary Approaches for Neural Network Training*.

61) Ramon Vazquez, Spring 2011, Machine Learning II (EEL 4817H) student. Research Project: *Evolutionary Approaches for Neural Network Training*.

Note: Charles and Ramon work on a joint research project. They produced a power-point presentation and a report at the end of Spring 2011 (actually only Charles Newton continued and completed this research effort).

62) Andres Mora, 2011 EXCEL URE student. Research Project: *DE Variants for the Global Optimization of Functions*.

Note: Andres completed his work in Spring 2011 and submitted a final report.

63) Dylan Lambe, Spring 2012, Machine Learning II (EEL 4817H) student. Research Project: *Winner Take All Approach to Solving Optimization Problems using Evolutionary Approaches: Expanding the Algorithm Suite*.

64) Jennifer Stout, 2012 EXCEL URE student. Research Project: *PSO Variants for the Global Optimization of functions.*

Note: Jennifer completed her work in Spring 2012 and submitted a final report.

65) Michael Lakus, 2012 EXCEL URE student. Research Project: DE Variants for the Global Optimization of functions.

66) Aaron Shadow, 2013 EXCEL URE student. Research Project: 3-D Data Visualization.

Note: Aaron completed his work in Spring 2013 and submitted a final report.

67) Patrick Shickel, 2013 EXCEL URE student. Research Project: 3-D Data Visualization.

Note: Patrick completed his work in Spring 2013 and submitted a final report.

68) Jovanna Marquez (Computer Science), 2014 EXCEL URE student. Research Project: Web-Based Image Retrieval through Hashing.

Note: Jovanna completed her work in Spring 2014 and submitted a final report.

69) Alexander Santiago (Aerospace Engineering), 2014 EXCEL URE student. Research Project: Harvesting Twitter Feeds for Analysis of Internet Threats.

Note: Alexander completed his work in Spring 2014 and submitted a final report.

70, 71, 72, 73, 74) Other undergraduate students from Seminole Community College (SCC) and UCF that I have advised in projects related to Machine Learning research did not work on their research long enough to produce a definitive outcome, such as a project report or a publication in a conference, journal venue. These students were:

- 70. Dayakar Aluvala; SCC student
- 71. Trent Gilkey; SCC student
- 72. Raul Hernandez; SCC student
- 73. Joe French ; UCF student
- 74. Poorna Shavi; SCC/UCF student

Independent Study Research Projects with Graduate Students

1) Ryan T. Fitz-Gibbons (UCF, non-thesis Masters CpE), Independent Study, Fall 2005. Research Project: *Experiments with the Regression Trees.* Advisor: Michael Georgiopoulos.

2) Nick Weihs (UCF, MS., Major Advisor: Dr. A. Gonzalez, from the SEECs), Independent Study, Fall 2005. Research Project: *Validation of Gaussian ARTMAP and Distributed Gaussian ARTMAP Performance for Small Datasets.* Independent Study Advisor: Michael Georgiopoulos

Note: The work by Nick Weihs has been published at the **ANNIE 2006 conference**.

3) Mustafa Gul (UCF, Ph.D., Major Advisor: Necati Catbas from Civil), Independent Study, Spring 2006. Research Project: *Outlier Detection Algorithms and their Application in the Health Monitoring of Civil Engineering Structures*. Independent Study Advisor: Michael Georgiopoulos.

Note: The work by Mustafa Gul is published at the **SPIE 2007 conference**.

4) Mustafa Gul (UCF, Ph.D., Major Advisor: Necati Catbas from Civil), Independent Study, Fall 2007. Research Project: *Health Monitoring of Structures using ARMAX Models*. Independent Study Advisor: Michael Georgiopoulos.

K-12 Teachers

In the summer of 2012, we (UCF and FIT) worked on a collaborative NSF-funded RET (Research Experiences for Teachers) project. The intellectual focus of this project is *Signals and Images*. In the summer of 2012 UCF and FIT hosted 5 high school teachers and 1 middle school teacher. These teachers participated in a six-week summer research experience. The teacher teams and their projects are listed below.

1. Rebecca Lee and Dawn Fenton from Timber Creek High School. Research Project: *Canny Edge Detection and Its Applications*. Faculty Advisor: Michael Georgiopoulos (UCF), Graduate Student: Yinjie Huang (UCF); 2 teachers.
2. Chinyen Cho, Seminole High School, and Irma Fiametta, East River High School. Research Project: *Image Segmentation Using K-Means and Differential Evolution*. Faculty Advisor: Michael Georgiopoulos (UCF), Graduate Student: Tiantian Zhang (UCF); 2 teachers.
3. Becky Dowell, Titusville High School. Research Project: *Speech Processing*. Faculty Advisor: Veton Kepuska (FIT). Graduate Student Mentor: Zacob Zarusky (FIT); 1 teacher.
4. John Ho Ayun, Corner Lake Middle School. This teacher served as a liaison between UCF, FIT staff and the other K-12 teachers and participated in all research projects; 1 teacher.

2012 Total: 6 teachers.

In the summer of 2013, we (UCF and FIT) worked on a collaborative NSF-funded RET (Research Experiences for Teachers) project. The intellectual focus of this project is *Signals and Images*. In the summer of 2013 UCF and FIT hosted 7 high school teachers. These teachers participated in a six-week summer research experience. The teacher teams and their projects are listed below.

1. Robert Clark (Timber Creek High School) and Ryba Johnson (Cypress Creek High School). Research Project: *Error Control Coding for Image Transmission*. Faculty Advisor: Lei Wei (UCF), Graduate Student: Bowen Bai (UCF); 2 teachers.
2. Emily Collins (Maynard Evans High School) and Aisha Osborne (Oak Ridge High School). Research Project: *Automatic Feature Detection and Image Morphing*. Faculty Advisor: Michael Georgiopoulos (UCF), Graduate Student: Yinjie Huang (UCF); 2 teachers.

- Richard Flores (Lake Nona High School), Lori Johnson (Ocoee High School), Research Project: *Image Registration and Mosaicking*. Faculty Advisor: Michael Georgiopoulos (UCF). Graduate Student Mentor: Tiantian Zhang (UCF); 2 teachers.
- Becky Dowell (Titusville High School). This teacher served as a liaison between UCF, FIT staff and the other K-12 teachers and participated in all research projects; 1 teacher.

2013 Total: 7 teachers.

In the summer of 2014, we (UCF and FIT) worked on a collaborative NSF-funded RET (Research Experiences for Teachers) project. The intellectual focus of this project is *Signals and Images*. In the summer of 2014 UCF and FIT hosted 12 high school teachers. These teachers participated in a six-week summer research experience. The teacher teams and their projects are listed below.

- Francisco Chaparro-Torress (Olympia High School), Natasha Zapata (Olympia High School) . Research Project: *Image Hiding*. Faculty Advisor: Georgios Anagnostopoulos (FIT/UCF), Graduate Student: Huihui (UCF); 2 teachers.
- Zach Barr (Lake Mary High School), Eric Cooper (Liberty High School). Research Project: *Traffic Sign Detection in Images*. Faculty Advisor: Georgios Anagnostopoulos (FIT/UCF), Graduate Student: Niloofar Yousefi (UCF); 2 teachers.
- Jared Herretes (Oak Ridge High School), Gregory Knudsen (Apopka High School). Research Project: *Automatic Detection in Natural Scene Images*. Faculty Advisor: Georgios Anagnostopoulos (FIT/UCF). Graduate Student Mentor: Yinjie Huang (UCF); 2 teachers.
- Laura Springstoh (Viera High School), Jennifer Mikenas (Melbourne High School), Jeremy Moore (Edgewater Jr./Sr. High School), William Hanna (Sebastian River High School). Research Project: Poisson Image Blending, Faculty Advisor: Georgios Anagnostopoulos (FIT); 4 teachers.
- Becky Dowell (Titusville High School), Chinyen Cho (previously at Seminole High School). These teachers, previous AEGIS participants, served as teacher mentors for the AEGIS project. They helped the other teachers with their lesson plans; 1 teacher.

2014 Total: 11 teachers.

2015 Total: 8 teachers (Maria Charter (Lake Mary High School), Stephany Eley (Brevard District), Sean Johnson (Edgewood Jr./Sr. High School), John Clark (Deltona High School), Khalil Figueroa (Gateway High School), Terry Barchfeld (Timber Creek High School), Natasha Zapata (Olympia High School), Jeremy Moore (Edgewater Jr./Sr. High School); Natasha and Jeremy served as teacher mentors).

2016 Total: 9 teachers (Samantha Marshall (Titusville High School), Tiffany Tawney (Titusville High School), Ryan Jones (Edgewood Jr./Sr. High School), Shannon Behler (Edgewood Jr./Sr. High School), Daniela Dizeu (Dr. Phillips High School), Katherine Folger (Lyman High School), Anna Gonzalez de Enriquez (Osceola County School of the Arts), Sean Johnson (Edgewood Jr./Sr. High School), Khalil Figueroa (Gateway High School); Sean and Khalil served as teacher mentors.

In total, through the AEGIS RET project (2012-2016), we have involved **41 teachers** (some teachers have been involved with AEGIS more than once) in summer research experiences at UCF and FIT. Furthermore, **4 faculty and 9 graduate students** have actively participated and contributed in this RET effort.

In 2017, the AEGIS RET conducted a 3-day workshop run by previous RET teachers, one of the AEGIS PI and a graduate student. Eleven (11) teachers participated in this 3-day workshop. In particular the following activities happened during this 3-day workshop. Day 1: Orientation, Lesson Plan Overview, Octave (MATLAB) basics; Day 2: Basics of Signal and Image Processing (SIP), SIP with Octave; Day 3: Teachers chose the lesson plan (LP) that they wanted to be trained on and received training (went through the LP materials and ran the Octave scripts).

RESEARCH

I have published **285 papers** in journals, book chapters, or conferences, of which:

- **79** are journal papers.
- **195** are conference papers of which **12** were invited.
- **11** are book chapters.

I have also published **1 book**.

According to Google Scholar (December 2017) I have more than **5,500 citations and h-index of 36**. Eleven of my papers have been cited more than 100 times. The book that I co-authored has been cited almost 500 times.

Refereed Journal Publications

Note 1: For the journal papers published during the time period of 2001-present, **graduate students** that I advised or advised and/or supported are designated with **one asterisk**; this is work that they have conceived as a result of their research, while at UCF.

Note 2: For the journal papers published during the time period of 2001-present, **undergraduate students** that have performed Machine Learning research under my supervision are designated with **two asterisks**.

1. M. Georgiopoulos and P. Papantoni-Kazakos, "Collision resolution protocols utilizing absorptions and collision multiplicities," *IEEE Trans. on Comm.*, Vol. 33, No. 7, July 1985, pp. 721-724.
2. M. Georgiopoulos and P. Papantoni-Kazakos, "A high performance asynchronous limited sensing algorithm for multiple access networks," *Local Area and Multiple Access Networks*, Editor R. Pickholtz, Computer Science Press, 1986, pp. 185-215. (Chapter in Book; this paper was rigorously refereed by three well-known experts in the field as if it was a journal)
3. M. Georgiopoulos, "Packet error probabilities in frequency hopped spread spectrum packet radio networks--Memoryless frequency hopping patterns considered," *IEEE Transactions on Communications*, Vol. 36, No. 6, June 1988, pp. 720-723.
4. G. L. Heileman, G. M. Papadourakis and M. Georgiopoulos, "A neural network associative memory for real-time applications," *Neural Computation*, Vol. 2, No. 1, Spring 1990, pp. 107-115.

5. M. Georgiopoulos, "On the error probability of coded frequency hopped spread spectrum multiple access systems with more than one code symbols per dwell interval," *IEEE Trans. on Communications*, Vol. 38, No. 9, September 1990, pp. 1321-1324.
6. M. Georgiopoulos, "Packet error probabilities in direct sequence spread spectrum packet radio networks," *IEEE Transactions on Communications*, Vol. 38, No. 9, September 1990, pp. 1599-1606.
7. M. Georgiopoulos, G. L. Heileman and J. Huang, "Convergence properties of learning in ART1," *Neural Computation*, Vol. 2, No. 4, Winter 1990, pp. 502-509.
8. M. Georgiopoulos, Correction to "Packet error probabilities in frequency hopped spread spectrum packet radio networks--Memoryless frequency hopping patterns considered," *IEEE Transactions on Communications*, Vol. 39, No. 3, March 1991, pp. 362-364.
9. M. Georgiopoulos, G. L. Heileman and J. Huang, "Properties of learning related to pattern diversity in ART1," *Neural Networks*, Vol. 4, No. 6, November 1991, pp. 751-757.
10. G. L. Heileman, M. Georgiopoulos and W. D. Roome, "A general framework for concurrent simulation of neural network models," *IEEE Transactions on Software Engineering*, Vol. 18, No. 7, July 1992, pp. 551-562. (Journal)
11. M. Georgiopoulos, G. L. Heileman and J. Huang, "The N--N--N Conjecture in ART1," *Neural Networks*, Vol. 5, No.5, September-October 1992, pp. 745-753.
12. D. Wuerz Jr., J. J. Liou, and M. Georgiopoulos, "Circuit simulation of adaptive resonance (ART) neural networks using PSpice," *International Journal of Electronics*, Vol. 74, No. 1, January 1993, pp. 101-110.
13. C. S. Ho, J. J. Liou, M. Georgiopoulos, G. L. Heileman, and C. Christodoulou, "Analog circuit design and implementation of an adaptive resonance theory (ART) neural network architecture," *International Journal of Electronics*, Vol. 76, No. 2, 1994, pp. 271-291.
14. M. Georgiopoulos, J. Huang and G. L. Heileman, "Properties of learning in ARTMAP," *Neural Networks*, Vol. 7, No. 3, 1994, pp. 495-506.
15. C. S. Ho, J. J. Liou, M. Georgiopoulos, G. L. Heileman, C. Christodoulou, "Analog Circuit-Design and Implementation of an Adaptive Resonance Theory (ART) Neural Network Architecture," Mixed Analog/Digital VLSI implementation of ART1 memories", *International Journal of Electronics*, Vol. 76, No. 2, pp. 271-291, 1994.
16. G. Bebis, M. Georgiopoulos, "Feed-forward neural networks", *IEEE Potentials*, October 1994, Vol. 13, No. 4, pp. 27-31.
17. G. L. Heileman, M. Georgiopoulos, and C. Abdallah, "A dynamical adaptive resonance architecture," *IEEE Transactions on Neural Networks*, Vol. 5, No. 6, 1994, pp. 873-889.

18. C. Christodoulou, J. Huang, M. Georgiopoulos, J. J. Liou, "Design of gratings and frequency selective surfaces using Fuzzy ARTMAP neural networks," *Journal of Electromagnetic Waves and Applications*, Vol. 9, No. 1/2, January/February 1995, pp. 17-36.
19. C. Christodoulou, J. Huang, M. Georgiopoulos, J. J. Liou, "On the Application of a Neural Network in the Design of Cascaded Gratings", *Microwave and Optical Technology Letters*, March 1995, Vol. 8, No. 4, pp. 171-175.
20. J. Huang, M. Georgiopoulos and G. L. Heileman, "Fuzzy ART properties," *Neural Networks*, Vol. 8, No. 2, 1995, pp. 203-213.
21. T. Kasparis, M. Georgiopoulos, and Q. Memon, "Direct-sequence spread-spectrum with transform domain interference suppression," *Journal of Circuits, Systems and Computers*, Vol.5, No. 2, 1995, pp. 167-179.
22. C. S. Ho, J. J. Liou, M. Georgiopoulos, and C. Christodoulou, "A mixed analog/digital VLSI design and simulation of an adaptive resonance theory (ART) neural network architecture," *Simulation Journal*, Vol. 66, No. 1, January 1996, pp. 31-39.
23. C. Abdallah, G. L. Heileman, M. Georgiopoulos, and D. Hush, "An overview of neural network results for Systems and Control," *International Journal of Intelligent Control and Systems*, Vol. 1, No. 2, pp. 177-194, June 1996.
24. M. Georgiopoulos, H. Fernlund, G. Bebis and G. L. Heileman, "Order of search in Fuzzy ART and Fuzzy ARTMAP: Effect of the choice parameter," *Neural Networks*, Vol. 9, No. 9, 1996, pp. 1541-1559.
25. A. E. Zooghby, C. G. Christodoulou, and M. Georgiopoulos, "Performance of radial basis function networks for direction of arrival estimation with antenna arrays," *IEEE Transactions on Antennas and Propagation*, Vol. 45, No. 11, November 1997, pp. 1611-1617.
26. G. Bebis, M. Georgiopoulos and T. Kasparis, "Coupling weight elimination and genetic algorithms to reduce network size and preserve generalization," *Neurocomputing*, Vol. 17, No. 3&4, November 1997, pp. 167-194.
27. G. Bebis, M. Georgiopoulos, N. da Victoria Lobo, "Using self-organizing maps to learn geometric hash functions for model-based object recognition," *IEEE Transactions on Neural Networks*, Vol. 9, No. 3, May 1998, pp. 560-570.
28. M. Mollaghasemi, K. LeCroy, and M. Georgiopoulos, "Application of neural networks and simulation modeling in manufacturing system design," *INTERFACES*, Vol. 28, No. 5, Sep-Oct 98, pp. 100-114.

- 29.** G. Bebis, M. Georgiopoulos, M. Shah, and N. da Vitoria Lobo, "Indexing based on algebraic function of views," *Computer Vision and Image Understanding*, Vol. 72, No. 3, December 1998, pp. 360-378.
- 30.** A. H. E. Zooghby, C. G. Christodoulou, and M. Georgiopoulos, "Neural network-based adaptive beamforming for one and two dimensional antenna arrays," *IEEE Transactions on Antennas and Propagation*, Vol. 46, No. 12, December 1998, pp. 1891-1893.
- 31.** A. H. El Zooghby, C. G. Christodoulou and M. Georgiopoulos, "A neural network based linearly constrained minimum variance beamformer," *Microwave and Optical Technology Letters*, Vol. 21, No. 6, June 1999, pp. 451-455.
- 32.** I. Dagher, M. Georgiopoulos, G. L. Heileman, and G. Bebis, "An ordering algorithm for pattern presentation in Fuzzy ARTMAP that tends to improve generalization performance," *IEEE Transactions on Neural Networks*, Vol. 10, No. 4, July 1999, pp. 768-778.
- 33.** M. Georgiopoulos, I. Dagher, G. L. Heileman, and G. Bebis, "Properties of learning of a Fuzzy ART Variant," *Neural Networks*, Vol. 12, No. 6, July 1999, pp. 837-850.
- 34.** G. Bebis, M. Georgiopoulos, N. da Vitoria Lobo, and M. Shah, "Learning affine transformations," *Pattern Recognition*, Vol. 32, No. 10, October 1999, pp. 1783-1799.
- 35.** A. H. El Zooghby, C. G. Christodoulou and M. Georgiopoulos, "A neural network based smart antenna for multiple source tracking," *IEEE Transactions on Antennas and Propagation*, Vol. 48, No. 5, May 2000, pp. 768-776.
- 36.** G. Bebis, S. Uthiram, and M. Georgiopoulos, "Face detection and verification using genetic search," *International Journal of Artificial Intelligence Tools*, Vol. 9, No. 2, June 2000, pp. 225-246.
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Books

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Book Chapter Publications

Note 1: For the book chapters published during the time period of 2001-present, **my graduate students** are designated with **one asterisk**; this is work that they have conceived as a result of their research, while at UCF.

Note 2: For the book chapters published during the time period of 2001-present, **undergraduate students** that have performed Machine Learning research under my supervision are designated with **two asterisks**.

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Conference Publications

All the conference papers are refereed unless otherwise stated. Special review conditions are appropriately identified after every paper, if applicable.

Note 1: For the conference papers published during the time period of 2001-present, **my graduate students** are designated with **one asterisk**; this is work that they have conceived as a result of their research, while at UCF.

Note 2: For the conference papers published during the time period of 2001-present, **undergraduate students** that have performed Machine Learning research under my supervision are designated with **two asterisks**.

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- 130.** M. Zhong (*), B. Rosander (**), M. Georgiopoulos, G. Anagnostopoulos, M. Mollaghasemi, and S. Richie, "Experiments with safe Micro-ARTMAP and comparisons to other ART networks," *International Joint Conference on Neural Networks*, Vancouver, Canada, July 16-21, 2006, pp. 720-727.
- 131.** M. Zhong (*), D. Coggeshall (**), E. G. Ghaneie (**), T. Pope (**), M. A. Rivera (**), M. Georgiopoulos, G. C. Anagnostopoulos, M. Mollaghasemi, and S. Richie, "Gap-Based Estimation: Choosing the smoothing parameters for Probabilistic and General Regression Neural Networks," *International Joint Conference on Neural Networks*, Vancouver, Canada, July 16-21, 2006, pp. 1870-1877.
- 132.** J. Secretan (*), M. Georgiopoulos, J. Hecker (**), I. Maidhoff (**), and P. Shibly (**), "Methods for Parallelizing the Probabilistic Neural Network on a Beowulf Cluster Computer," *International Joint Conference on Neural Networks*, Vancouver, Canada, July 16-21, 2006, pp. 2378-2385.
- 133.** A. Koufakou (*), N. Weihs (**), M. Georgiopoulos, A. Al-Daraiseh, "Comparisons of Gaussian ARTMAP and Distributed Gaussian ARTMAP: The Category Proliferation problem," *Proceedings of ANNIE 2006*, St. Louis, Missouri, November 2006; also published as a chapter in a book, edited by Dagli, Buczak, Enke, Embrechts, and Elsroy, ASME Press.

- 134.** M. Zhong (*), M. Georgiopoulos, and G. C. Anagnostopoulos, “Experiments with an Innovative Tree Pruning Algorithm.” *Proceedings of the LASTED International Conference on Artificial Intelligence and Applications*, Innsbruck, Austria, February 12-14, 2007, pp. 353-358.
- 135.** M. Gul, F. N. Catbas, and M. Georgiopoulos, “Application of Pattern Recognition Techniques to Identify Structural Change in a Laboratory Specimen”, *Proceedings of the SPIE Sensor and Smart Structures Technology for Civil, Mechanical and Aerospace Systems*, San Diego, CA, March 19-22, 2007.
- 136.** A. Kaylani (*), M. Georgiopoulos, M. Mollaghasemi, and G. C. Anagnostopoulos, “M-GFAM: An elegant approach to genetically optimize Fuzzy ARTMAP Neural Network architectures,” *Proceedings of Joint Conference on Information Sciences (JCIS)*, Salt Lake City, July 18-24, 2007, pp. 1617-1623.
- 137.** A. Kaylani (*), A. Al-Daraiseh (*), M. Georgiopoulos, M. Mollaghasemi, G. C. Anagnostopoulos, and A. S. Wu, “Genetic optimization of ART neural network architectures,” *Proceedings of the IEEE-INNS-ENNS International Joint Conference on Neural Networks (IJCNN)*, Orlando, FL, August 12-17, 2007, pp. 379-384
- 138.** J. Castro, M. Georgiopoulos, and J. Secretan (*), “Analyzing the Fuzzy ARTMAP match tracking mechanism with co-objective optimization theory,” *Proceedings of the International IEEE-INNS-ENNS Joint Conference on Neural Networks (IJCNN)*, Orlando, FL, August 12-17, 2007, pp. 743-748.
- 139.** C. Sentelle (*), M. Georgiopoulos, G. C. Anagnostopoulos, and C. Young, “On extending the SMO algorithm sub-problem” *Proceedings of the International IEEE-INNS-ENNS Joint Conference on Neural Networks (IJCNN)*, Orlando, FL, August 12-17, 2007, pp. 886-891.
- 140.** J. Secretan (*), M. Georgiopoulos, and J. Castro, “A privacy preserving Probabilistic Neural Network for horizontally partitioned databases,” *Proceedings of the IEEE-INNS-ENNS International Joint Conference on Neural Networks (IJCNN)*, Orlando, FL, August 12-17, 2007, pp. 1554-1559.
- 141.** M. Zhong (*), M. Georgiopoulos, and G. C. Anagnostopoulos, “A k-norm misclassification rate estimation for Decision Tree classifiers,” *The 11th LASTED International Conference on Artificial Intelligence and Soft Computing (ASC 2007)*, Palma de Malorca, Spain, August 29-31, 2007, pp. 163-168.
- 142.** A. Kaylani (*), M. Georgiopoulos, M. Mollaghasemi, and G. C. Anagnostopoulos, “Genetic optimization of ART neural network architectures,” *The 11th LASTED International Conference on Artificial Intelligence and Soft Computing (ASC 2007)*, Palma de Malorca, Spain, August 29-31, 2007, pp. 225-230.
- 143.** C. Sentelle (*), S. L. Hong (**), M. Georgiopoulos, and G. C. Anagnostopoulos, “A Fuzzy Gap-statistic for Fuzzy C-Means,” *The 11th LASTED International Conference on Artificial Intelligence and Soft Computing (ASC 2007)*, Palma de Malorca, Spain, August 29-31, 2007, pp. 68-73.
- 144.** A. Koufakou (*), E. Ortiz (**), M. Georgiopoulos, G. C. Anagnostopoulos, and M. K. Reynolds, “A scalable and efficient outlier detection strategy for categorical data,” *19th IEEE International Conference on Tools with Artificial Intelligence, 2007 (ICTAI 2007)*, Patras, Greece, October 29-31, 2007, pp. 210-217.

- 145.** J. R. Beck (**), M. E. Garcia (**), M. Zhong (*), M. Georgiopoulos, and G. C. Anagnostopoulos, "A Backward adjusting strategy and optimization of the C4.5 parameters to improve C4.5's performance," *21st International Artificial Intelligence Research Symposium*, Coconut Grove, FL, May 15-17, 2008.
- 146.** A. Koufakou (*), J. Secretan (*), J. Reeder (*), K. Cardona (**), M. Georgiopoulos, "Fast Parallel Outlier Detection for Categorical Datasets, Using the MapReduce," *2008 International Joint Conference on Neural Networks (IEEE IJCNN 2008)*, Hong Kong, June 1-6, 2008, pp. 3298-3304.
- 147.** J. Reeder (*), R. Miguez (**), J. C. Sparks (**), and M. Georgiopoulos, "Interactively Evolved Modular Neural Networks for Game Agent Control," *Proceedings of the 2008 IEEE Symposium on Computational Intelligence and Games (CIG 08)*, Perth, Australia, December 15-18, 2008, pp. 167-174.
- 148.** A. Kaylani (*), M. Georgiopoulos, M. Mollaghasemi, G. Anagnostopoulos, "Efficient Evolution of ART Neural Networks," *2008 IEEE Congress on Evolutionary Computation (IEEE CEC 2008)*, Hong Kong, June 1-6, 2008, pp. 3456-3463.
- 149.** A. Kaylani (*), M. Georgiopoulos, M. Mollaghasemi, G. Anagnostopoulos, "MO-GART: Multi-Objective Optimization of ART Architectures," *2008 IEEE Congress on Evolutionary Computation (IEEE CEC 2008)*, Hong Kong, June 1-6, 2008, 1425-1432.
- 150.** J. Secretan (*), A. Koufakou (*), M. Georgiopoulos, "APHID: A practical architecture for high-performance, privacy preserving, data mining," *International Conference on Data Mining, DMIN 2009*, July 13-16, 2009, Las Vegas, NV, pp. 410-416.
- 151.** M. Georgiopoulos, C. Young, C. Geiger, S. Hagen, C. Parkinson, A. Morrison-Shetlar, T. Crouse, P. Krist, P. Lancey, M. Dagley-Falls, P. Ramsey, D. Forde, A. Koufakou, "Progress of the EXCEL Program at the University of Central Florida: An NSF STEP Funded Project," *2009 ASEE, Annual Conference and Exposition: Excellence in Education*, June 14-17, 2009, Austin, TX.
- 152.** A. Koufakou (*), J. Secretan (*), M. Fox (**), G. Gramajo (**), G. C. Anagnostopoulos, and M. Georgiopoulos, "Outlier detection for large high-dimensional categorical data using non-derivable and non-almost-derivable sets," *International Conference on Data Mining, DMIN 2009*, July 13-16, 2009, Las Vegas, NV, pp. 505-511.
- 153.** C. Sentelle (*), G. C. Anagnostopoulos, and M. Georgiopoulos, "An efficient active set method for SVM training without singular inner problems," *Proceedings of the IEEE-INNS-ENNS International Joint Conference on Neural Networks (IJCNN 2009)*, Atlanta, GA, June 14-19, 2009, pp. 2875-2882.
- 154.** C. Puklavage (**), A. Pirela (**), A. J. Gonzalez, M. Georgiopoulos, "Imitating personalized expressions in an Avatar through Machine Learning," *Proceedings of the 23rd International FLAIRS conference*, May 19-21, 2010, Daytona Beach, FL, pp. 68-73.

- 155.** R. Ramirez-Padron (*), D. Foregger (**), J. Manuel (**), M. Georgiopoulos, and B. Mederos, “Similarity Kernels for Nearest Neighbor-based Outlier Detection”, *The Ninth International Symposium on Intelligent Data Analysis*, Tucson, Arizona, 19-21 May, 2010; *Lectures Notes in Computer Science*, 6065, pp 157-170, Springer-Verlag, 2010.
- 156.** L. Massi, M. Georgiopoulos, C. Young, A. Ducharme, C. Ford, K. Small, P. Lancey, D. Bhati, “YES: An NSF S-STEM Scholarship Program Experience at the University of Central Florida,” *Proceedings of the 2010 ASEE Conference and Exposition*, Session AC 2010-259, Louisville, KY, June 20-23, 2010.
- 157.** C. Young, M. Georgiopoulos, T. Crouse, C. Geiger, A. Islas, S. Hagen, M. Dagley-Falls, P. Ramsey, P. Lancey, “EXCEL in Mathematics: Applications of Calculus,” *Proceedings of the 2010 ASEE Conference and Exposition*, Session AC 2010-171, Louisville, KY, June 20-23, 2010.
- 158.** M. Dagley-Falls, M. Georgiopoulos, C. Young, “Influencing sense of community in a STEM living-learning community: An NSF STEP funded project,” *Proceedings of the 2010 ASEE Conference and Exposition*, Session AC 2010-777, Louisville, KY, June 20-23, 2010.
- 159.** L. Massi, M. Georgiopoulos, C. Young, C. Geiger, P. Lancey, D. Bhati, “Defining an Evaluation Framework for Undergraduate Research Experiences,” *Proceedings of the 2011 ASEE Conference and Exposition*, Session AC 2011-1377, Vancouver, BC, Canada, June 26-29, 2011.
- 160.** T. Rubio (**), T. Zhang (*), M. Georgiopoulos, A. Kaylani, “Multi-Objective Evolutionary Optimization of Exemplar-Based Classifiers: A PNN Test Case,” *International Joint Conference on Neural Networks (IJCNN)*, July 31st-August 5th, 2011, San Jose, CA, pp. 1722-1731. **[Acceptance rate 75% (468/620)]**
- 161.** C. Li (*), M. Georgiopoulos, and G. C. Anagnostopoulos, “Kernel Principal Subspace Mahalanobis Distances for Outlier Detection,” *International Joint Conference on Neural Networks (IJCNN)*, July 31st-August 5th, 2011, San Jose, CA, pp. 2528-2535. **[Acceptance rate 75% (468/620)]**
- 162.** Y. Huang (*), M. Georgiopoulos, and G. C. Anagnostopoulos, “Accelerated Learning of Generalized Sammon Mappings,” *International Joint Conference on Neural Networks (IJCNN)*, July 31st-August 5th, 2011, San Jose, CA, pp. 2952-2960. **[Acceptance rate 75% (468/620)]**
- 163.** T. Zhang (*), G. Borrero (**), M. Georgiopoulos, “A Winner-Take-All Methodology: Finding the Best Evolutionary Algorithm for the Global Optimization of Functions,” *Genetic and Evolutionary Computation Conference*, July 7th- July 11th, Philadelphia, 2012, pp. 1515-1516.
- 164.** L. Massi, P. Lancey, U. Nair, R. Straney, M. Georgiopoulos, C. Young, “Engineering and Computer Science Community College Transfers and Native Freshmen Students: Relationships Among Participation in Extra-Curricular and Co-Curricular Activities, Connecting to the University Campus, and Academic Success,” *2012 Frontiers in Education Conference*, Seattle, WA, October 3-6, 2012.
- 165.** L. Massi, M. Georgiopoulos, C. Y. Young, C. M. Ford, P. Lancey, D. Bhati, K. A. Small, “Internships and Undergraduate Research: Impact, Support, and Institutionalization of an NSF S-

STEM Program through Partnerships with Industry and Funding from Federal and Local Workforce Agencies,” *Proceedings of the 120th ASEE Conference and Exposition*, Session AC 2011-1377, Atlanta, GA, June 23-26, 2013.

166. T. Zhang (*), M. Georgiopoulos, and G. C. Anagnostopoulos, “S-RACE: A Multi-objective Racing Algorithm,” *GECCO 2013, Proceedings of the fifteenth annual conference on Genetic and evolutionary computation conference*, Amsterdam, the Netherlands, July 6-10, 2013, pages 1565-1572. **[Finalist or best paper award]; [Acceptance Rate: 36% (204/570)]**

167. C. Li (*), M. Georgiopoulos and G.C. Anagnostopoulos, “Kernel-based Distance Metric Learning in the Output Space”, *International Joint Conference on Neural Networks (IJCNN)*, Dallas, TX, August 04-09, 2013, pp. 1-8. **[Nominated for best paper award]; [Acceptance Rate: 72% (435/605)]**

168. Y. Huang (*), C. Li (*), M. Georgiopoulos, and G. C. Anagnostopoulos, “Reduced Rank Local Distance Metric Learning,” European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (*ECML and PKDD 2013*), Prague, Czech Republic, September 23-27, 2013. In Hendrik Blockeel, Kristian Kersting, Siegfried Nijssen, and Filip Zelezny, editors, European Conference on Machine Learning (ECML), volume 8190 of Lecture Notes in Computer Science, pages 224–239. Springer, 2013. **[Acceptance Rate: 25% (111/443)]**

169. T. Zhang (*), M. Georgiopoulos, G. C. Anagnostopoulos, “Online Model Racing Based on Extreme Performance”, *Genetic and Evolutionary Computation Conference (GECCO) 2014*, Vancouver Canada, July 12-16, 2014, pp. 1351-1358. **[Nominated for best paper award]; [Acceptance Rate: 33% (180/544)]**

170. C. Li (*), M. Georgiopoulos, Georgios C. Anagnostopoulos, “Conic Multi-Task Classification”, *ECML PKDD 2014*, September 15-19, 2014, Nancy, France. In Toon Calders, Floriana Esposito, Eyke Hullermeier, and Rosa Meo, editors, Machine Learning and Knowledge Discovery in Databases - European Conference, ECML PKDD 2014, Nancy, France, September 15-19, 2014. Proceedings, Part II, volume 8725 of Lecture Notes in Computer Science, pages 193–208. Springer, 2014. **[Acceptance Rate: 23.8% (115/483)]**

171. T. Zhang (*), M. Georgiopoulos and G. C. Anagnostopoulos, “SPRINT Multi-Objective Model Racing” *GECCO 2015, Proceedings of the Genetic and Evolutionary Computation Conference*, (GECCO-2015), Madrid, Spain, July 11-15, 2015, pp. 1383-1390. **[Acceptance Rate: 36% (182/505)]**

172. Y. Huang (*), M. Georgiopoulos, and G. C. Anagnostopoulos, “Hash Function Learning via Codewords,” *2015 ECML PKDD European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases*, Porto, Portugal, September 7-11, 2015. In Annalisa Appice, Pedro Pereira Rodrigues, Vitor Santos Costa, Carlos Soares, Joo Gama, and Alpio Jorge, editors, Machine Learning and Knowledge Discovery in Databases, volume 9284 of Lecture Notes in Computer Science, pages 659–674. Springer International Publishing, 2015. **[Acceptance Rate: 23.4% (89/380)]**

173. N. Yousefi (*), M. Georgiopoulos, and G. C. Anagnostopoulos, “Multi-Task Learning with Group-Specific Feature Space Sharing,” *2015 ECML PKDD European Conference on Machine Learning and*

Principles and Practice of Knowledge Discovery in Databases, Porto, Portugal, September 7-11, 2015. In Annalisa Appice, Pedro Pereira Rodrigues, Vitor Santos Costa, Joo Gama, Alpio Jorge, and Carlos Soares, editors, *Machine Learning and Knowledge Discovery in Databases*, volume 9285 of *Lecture Notes in Computer Science*, pages 120–136. Springer International Publishing, 2015. **[Acceptance Rate: 23.4% (89/380)]**

174. M. Sedghi (*), M. Georgiopoulos, G. A. Anagnostopoulos, “Sparse Inductive Embedding: An Explorative Data Visualization Technique,” *ICTAI 2017, 29th, International Conference on Tools for Artificial Intelligence*, November 6-8, 2017, Boston, MA.

175. M. Taheri, M. Ross, Z. Hazari, M.A. Weiss, M. Georgiopoulos, K.J. Christensen, T. Solis, Atalie Garcia, D. Chari, “A Structural Equation Model Analysis of Computing Identity Sub-Constructs and Student Academic Persistence,” *2018 IEEE Frontiers in Education Conference (FIE), 03-06 October 2018*, San Jose, CA, pp. 1-7.

176. M. Sedghi (*), Y. Huang, M. Georgiopoulos, G. A. Anagnostopoulos, “Multi-Label Learning via Codewords,” *ICTAI 2018, 30th International Conference on Tools for Artificial Intelligence*, November 5-7, 2018, Volos, Greece, pp. 221-228.

177. M. Sedghi (*), G. K. Atia, M. Georgiopoulos, “Kernel Conference Pursuit: A Manifold learning-based Outlier Detection Technique,” *2018 52nd Asilomar Conference on Signals, Systems and Computers*, November 28-31, 2018, Pacific Grove, CA, pp. 2017-2021.

178. M. Sedghi (*), George K. Atia, M. Georgiopoulos, “Low-Dimensional Decomposition of Manifolds in the Presence of Outliers,” *2019 IEEE 29th International Workshop on Machine Learning for Signal Processing (MLSP)*, 13-16 October 2019, Pittsburg, PA, pp. 1-6.

179. M. Kargarmoakhar, M. Ross, Z. Hazari, M.A. Weiss, M. Georgiopoulos, K.J. Christensen, T. Solis, “Computing Pathways: A Quantitative Inquiry into the dynamic pathways of students in Computing with Gender Comparisons,” *2020 ASEEE Virtual Annual Conference*.

180. M. Kargarmoakhar, S. Lunn, L. Zahedi, M. Ross, Z. Hazari, M.A. Weiss, M. Georgiopoulos, K.J. Christensen, T. Solis, “Understanding the Experiences that Contribute to the Inclusion of Underrepresented Groups in Computing,” *2020 IEEE Frontiers in Education Conference (FIE)*, 21-24 October 2020, Uppsala, Sweden, pp. 1-9.

181. M. Sedghi (*), G. K. Atia, M. Georgiopoulos, “Non-linear Manifold Clustering based on Conformity Index,” *2020 54th Asilomar Conference on Signals, Systems and Computers*, November 1-4, 2020, Pacific Grove, CA, pp. 607-611.

182. S. Lunn, M. Ross, Z. Hazari, M.A. Weiss, M. Georgiopoulos, K.J. Christensen, “The Impact of Technical Interviews, and Other Professional and Cultural Experiences on Students’ Computing Identities,” *Proceedings of the 26th Conference on Innovation and Technology in Computer Science Education (ITiCSE)*, June 26, 2021, pp. 415-421.

183. S. Lunn, M.S. Ross, Z. Hazari, M.A. Weiss, M. Georgiopoulos, K.J. Christensen, T. Solis, “Uneven Playing Field: Examining Preparation for Technical Interviews in Computing and the Role of Cultural Experiences,” *2021 ASEE Virtual Annual Conference*.

Invited Conference Publications

- 1.** M. Georgiopoulos, “Packet error probabilities in frequency hopped spread spectrum packet radio networks--Memoryless frequency hopping patterns considered,” *Proceedings of the 26th IEEE Conference on Decision and Control*, Los Angeles, California, December 9-11, 1987, pp. 693-696. (Invited Paper)
- 2.** L. Merakos and M. Georgiopoulos, “Analysis of a multi-hop CDMA packet radio network,” *Proceedings of the 26th IEEE Conference on Decision and Control*, Los Angeles, California, December 1987, pp. 708-712. (Invited Paper)
- 3.** M. Georgiopoulos, J. Huang and G. L. Heileman, “Analysis of the ARTMAP neural network architecture,” *Proceedings in the 1994 World Congress on Neural Networks (WCNN), Mathematical Foundations Session*, San Diego, CA, June 5-9, 1994, pp. II-360-365. (Invited Paper)
- 4.** G. L. Heileman, M. Georgiopoulos, and J. Huang, “A survey of learning results for ART1 networks,” *IEEE World Congress on Computational Intelligence*, Orlando, FL, June 26-July 2, 1994, Vol. II, pp. 1222-1225. (Invited Paper)
- 5.** M. Georgiopoulos, J. Huang and G. L. Heileman, “A survey of learning results in ART architectures,” *Conference on Applications and Science of Neural Networks VI, SPIE 95*, April 17-21, 1995, pp. 416-424, Orlando, FL. (Invited paper)
- 6.** M. Georgiopoulos, H. Fernlund, G. Bebis, and G. L. Heileman, “Order of Search in Fuzzy ART and Fuzzy ARTMAP: A geometrical interpretation,” *International Conference on Neural Networks (ICNN 1996)*, Washington, DC, June 3-6, 1996, pp. 215-220. (Invited paper)
- 7.** D. Charalampidis, T. Kasparis, M. Georgiopoulos, and J. Rolland, “A Fuzzy ARTMAP based classification technique of natural textures,” *Proceedings of the 18th International Conference of the North American Fuzzy Information Processing Society (NAFIPS) 99*, June 10-12, 1999, New York, NY, pp. 507-511. (Invited Paper)
- 8.** C. G. Christodoulou, A. H. EL Zooghby, and M. Georgiopoulos, “Neural network processing for adaptive array antennas,” *Proceedings of the IEEE AP/USRI Symposium*, Orlando, FL, July 11-16, 1999, pp. 2584-2587. (Invited paper)
- 9.** M. Georgiopoulos, G. C. Anagnostopoulos, and M. Bharadwaj (*), “Experimental comparisons of semi-supervised and supervised ART classifiers,” *The 16th International Flairs Conference*, St. Augustine, FL, pp. 433, May 12-14, 2003. (Invited Paper)

10. J. Secretan (*), J. Castro, M. Georgiopoulos, J. Tapia (**), A. Chadha (**), B. Huber (**), G. Anagnostopoulos, and S. Richie, "Parallelizing Fuzzy ARTMAP on a Beowulf Cluster," 2005 *International Joint Conference on Neural Networks*, Montreal, Quebec, July 31- August 4, 2005, pp. 475-480. (Invited Paper)

11. A. Al-Dairaseh (*), M. Georgiopoulos, A. S. Wu, G. Anagnostopoulos, and M. Mollaghasemi, "GFAM: A genetic algorithm optimization of Fuzzy ARTMAP," 2006 *IEEE International Conference on Fuzzy Systems*, Vancouver, Canada, July 16-21, 2006, pp. 315-322. (Invited Paper).

12. M. Georgiopoulos, C. Li (*), T. Kocak, "Learning in the Feed-Forward Random Neural Network: A Critical Review," *Proceedings of the 25th International Symposium on Computer and Information Sciences*, London, UK, September 22-24, 2010; *Lecture Notes in Electrical Engineering*, 62, editors: E. Gelenbe, R. Lent, G. Sakellari, A. Sacan, H. Toroslu, A. Yadici, pp. 155-160, 2010.

Conference papers under Review

None at this time.

Presentations

Gave a guest lecture at the ECE Graduate Seminar on February 1993. The topic of the presentation was "Neural Networks".

Gave a guest lecture at the Computer Science Colloquium on March 1993. The topic of the presentation was "ART Neural Network Architectures and Applications".

Gave a presentation to the Honors class on February 23, 1995. The title of the presentation was "Neural Networks and Applications".

Gave a guest lecture on the Summer 1995 "Expert Systems" class of Dr. Pamela McCauley Bell (Industrial Engineering). The topic of the guest lecture was "Neural Networks and Applications".

Gave a guest lecture in Spring 1997 at the "Principles of Electrical Engineering" class, taught by professor Wahid. The topic of the guest lecture was "Applications of Circuit Theory in Communications".

Gave a guest lecture in the Spring of 2002, entitled "Neural Networks and Applications of Neural Networks" at the University of New Mexico Graduate Seminar Series.

Gave a guest lecture in the Spring of 2010 at the University of Athens, Greece, titled "MO-GART: Multi-objective Optimization of ART Neural Networks".

Gave a guest lecture in the Fall of 2010 at the Institute of Telecommunications and Informatics Thessaloniki, Greece, titled "MO-GART: Multi-objective Optimization of ART Neural Networks".

Technical Reports

1. M. Georgiopoulos and M. Mollaghasemi, "Development of a neural network model for predicting physician's behavior," *submitted to RPR*, November 5, 1996.
2. M. Georgiopoulos, "Modeling human-like variability in combat models using Fuzzy Neural Networks," *submitted to the Institute of Simulation for Training (IST)*, August, 1997.
3. L. Jones, M. Lucas, and M. Georgiopoulos, "Satellite remote sensing of soil moisture," *submitted to FSGC*, October 1999.
4. D. Ling, R. DeMara, M. Georgiopoulos, A. Gonzalez, R. Eaglin, K. Michael Reynolds, R. Cory Watkins, "DRUID Database Deconfliction Tool," *submitted to FDLE*, March 8, 2001.
5. M. Georgiopoulos, C. Bing, R. DeMara, A. Gonzalez, R. Eaglin, K. Michael Reynolds, R. Cory Watkins, "Specifications of AI Techniques for Money Laundering Applications," *submitted to FDLE*, March 8, 2001.
6. A. Henninger, A. Gonzalez, R. DeMara, M. Georgiopoulos, "Observational Procedures for Model Generation in the VMGOES project," *submitted to STRICOM*, Summer 2001.
7. B. Gerber, A. Gonzalez, R. DeMara, M. Georgiopoulos, "On-Line VMGOES Model Monitoring Procedures," *submitted to STRICOM*, Summer 2001.

Grants Awarded

I have been PI and Co-PI on many funded efforts.

According to UCF's ORC (Office of Research and Commercialization) website, which reports funded efforts after 1993, I have collaborated extensively (PI or Co-PI) with several colleagues on grant funded efforts. Some of these efforts involve grants that exceed \$1M, such as EXCEL, I³, COMPASS, CF-STEM, FLIT-PATH, others. The major portion of this funding comes from federally funded research, such NSF, Navy, US Army, NIJ, WORKFORCE CENTRAL FLORIDA, DOL, State of Florida, among others. The ORC funded research does not report funding that came through different routes (e.g., BOG funding of \$4.9M; awarded in Spring 2014).

In the following, I am only showing grant efforts whose end date is in the new millennium.

1. **Agency:** Naval Air Warfare Training Center (NAVAIR Orlando) grant. (*federal grant*).
Title: Vehicle Model Generation and Optimization for Embedded Simulation.
Area of Research: Artificial Intelligence, Neural Networks, Computer Generated Forces Modeling.
Principal Investigator: A. Gonzalez (ECE-UCF)
Co-Principal Investigators: R. DeMara (ECE-UCF), M. Georgiopoulos (ECE-UCF).
Period of Funded Research: November 1997- December 2001.

Amount of Funding: \$402,496

2. **Agency:** Navy Air Warfare Training Systems Division (NAVAIR Orlando). (*federal grant*)
Title: Context-Based Representation of Intelligent Behavior in Degraded Systems Simulation.
Area of Research: AI Technologies, Computer Generated Forces.
Principal Investigator: A. Gonzalez (SEECs-UCF).
Co-Principal Investigators: R. DeMara (SEECs-UCF), and M. Georgiopoulos (SEECs-UCF).
Period of Funded Research: February 2000 – September 2001.
Amount of Funding: \$49,960.

3. **Agency:** Florida Department of Law Enforcement (FDLE). (*state grant*)
Title: FDLE Drug Intelligence Database.
Area of Research: Databases, AI Technologies.
Principal Investigator: M. Reynolds (CJ-UCF)
Co-Principal Investigators: R. DeMara (SEECs-UCF), R. Eaglin (COE-UCF), M. Georgiopoulos (SEECs-UCF), A. Gonzalez (SEECs-UCF), C. Watkins (CJ-UCF).
Period of Funded Research: April 2000 - June 2001.
Amount of Funding: \$250,000.

4. **Agency:** NAVAIR Orlando. (*federal grant*)
Title: An Advanced Representational Paradigm for Human Behavioral Modeling in Computer Generated Forces.
Area of Research: AI Technologies, Modeling, Simulation.
Principal Investigator: A. Gonzalez (SEECs-UCF).
Co-Principal Investigators: R. DeMara (SEECs-UCF), M. Georgiopoulos (SEECs-UCF).
Period of Funded Research: March 2001 - April 2002.
Amount Funded: \$198,889
UCF Match: \$15,323.

5. **Agency:** Defense Modeling and Simulation Office (DMSO) (*federal grant*)
Title: Automated Model Development Techniques for Human Behavior Models.
Area of Research: AI Technologies, Modeling, Simulation.
Principal Investigator: A. Gonzalez (SEECs-UCF).
Co-Principal Investigators: R. DeMara (SEECs-UCF), R. Franceschini (SEECs-UCF), M. Georgiopoulos (SEECs-UCF).
Period of Funded Research: May 2001 – August 2002.
Amount Funded: \$98,510.
UCF Match: \$9,834.

6. **Agency:** US Army STRICOM (*federal grant*)
Title: Learning Robotic Behavior from Observation of Human Performance.
Area of Research: AI Technologies, Modeling, Simulation.
Principal Investigator: A. Gonzalez (SEECs-UCF).
Co-Principal Investigators : R. DeMara (SEECs-UCF), M. Georgiopoulos (SEECs-UCF).
Period of Funded Research: May 2002 – May 2004.

Amount Funded: \$110,334.

7. **Agency:** US Army STRICOM (*federal grant*)

Title: Task 2: Bandwidth and Latency Implications of Integrated Training and Tactical Communication Networks.

Area of Research: Computer Architectures, AI Technologies, Modeling, Simulation.

Principal Investigator : R. DeMara (SEECs-UCF).

Co-Principal Investigators : M. Georgiopoulos (SEECs-UCF), A. Gonzalez (SEECs-UCF).

Period of Funded Research: May 2002 – September 2004.

Amount Funded: \$268,491.

8. **Agency:** National Science Foundation (NSF) --- CRCRD Program (*federal grant*) ...**CRCRD**...

Title: Machine Learning Advances for Engineering Education.

Area of Research: Machine Learning.

Principal Investigator: M. Georgiopoulos (SEECs-UCF).

Co-Principal Investigators: R. DeMara (SEECs-UCF), E. Gelenbe (SEECs-UCF), A. Gonzalez (SEECs-UCF), M. Mollaghasemi (IEMS-UCF), A. Wu (SEECs-UCF), M. Kysilka (Education-UCF).

Period of Funding: August 2002 - July 2007.

Amount of Funding: \$440,851.

UCF Match: \$165,077

9. **Agency:** National Science Foundation (NSF) --- Instrumentation Grant (*federal grant*)

Title: Acquisition of a Universal Wireless Communications System Emulator.

Area of Research: Communications.

Principal Investigator: Lei Wei (SEECs-UCF).

Co-Principal Investigators: M. Georgiopoulos (SEECs-UCF), P. Wahid (SEECs-UCF), E. Gelenbe (SEECs-UCF), M. Bassiouni (SEECs-UCF), T. Kasparis (SEECs-UCF)

Period of Funding: August 2002 - July 2003.

Amount of Funding: \$100,475

UCF Match: \$46,854

10. **Agency:** Florida Institute of Technology --- CCLI-EMD program (*subcontract to UCF from FIT via an NSF grant effort*)

Title: Project EMD-MLR: Educational Materials Development through the Integration of Machine Learning Results into the Senior Design Projects.

Area of Research: Machine Learning.

Principal Investigator of the NSF grant : G. Anagnostopoulos (ECE-FIT).

Period of Funding: May 2004 - April 2007.

Amount of Funding: \$15,950 (*the NSF funding for FIT was 99,996*)

11. **Agency:** Florida Department of Law Enforcement (*state grant*)

Title: Florida Data Sharing Consortium.

Area of Research: Data Bases, AI.

Principal Investigator: Michael Reynolds (CJ-UCF).

Co-Principal Investigators: M. Georgiopoulos (ECE-UCF), R. Eaglin (ET-UCF), D. Burroughs (ET-UCF).

Period of Funding: November 2004 - May 2006.

Amount of Funding: \$525,000

12. **Agency:** National Institute of Justice (NIJ) (*federal grant*)

Title: PSTC the Florida Law Enforcement Consortium: An Affordable Data Sharing Model

Area of Research: Data Bases, AI.

Principal Investigator: Ronald Eaglin (ET-UCF).

Co-Principal Investigators: M. Georgiopoulos (ECE-UCF), M. Reynolds (CJ-UCF), D. Burroughs (ET-UCF).

Period of Funding: January 2005 – April 2006.

Amount of Funding: \$293,768

13. **Agency:** National Science Foundation (NSF) --- STEP Program (*federal grant*) ..**EXCEL**..

Title: UCF STEP Pathways to STEM: From Promise to Prominence.

Area of Research: Machine Learning, Networking, Optics, others.

Principal Investigator: M. Georgiopoulos (SEECS-UCF).

Co-Principal Investigators: C. Young (Math-UCF).

Senior Personnel: Approximately 20 other faculty from the CECS and the COS.

Period of Funding: October 2005 – December 2012.

Amount of Funding: \$1,797,360

UCF Match: Approximately \$780,000; this match was provided by the Provost's Office, ORC, Graduate College, CECS, COS, and COM.

Progress Energy Match for undergraduate research experiences: \$15,000 for 2010, \$30,000 for 2011, \$30,000 for 2012 and \$45,000 for 2013.

14. **Agency:** National Science Foundation (NSF) --- (*federal grant*)

Title: Graduate Research Fellowship for Jimmy Secretan.

Area of Research: Machine Learning.

Principal Investigator: M. Georgiopoulos (SEECS-UCF).

Period of Funding: September 2005 – December 2008.

Amount of Funding: \$121,500

15. **Agency:** National Science Foundation (NSF) --- (*federal grant*) ...**AMALTHEA**...

Title: Collaborative Research: REU Site: Advances in Machine Learning Theory and Applications (AMALTHEA).

Area of Research: Machine Learning and Applications.

Principal Investigators: G. Anagnostopoulos (ECE-FIT), M. Georgiopoulos (SEECS-UCF).

Co-Principal Investigators: M. Georgiopoulos (SEECS-UCF), Alison Morrison-Shetlar (Biology-UCF), Veton Kepuska (ECE-FIT), P. Wahid (SEECS-UCF).

Period of Funding: March 2007 – February 2011.

Amount of Funding: \$319,451 (*UCF portion 138,750, FIT portion 180,701*)

UCF Match: \$42,000

16. **Agency:** National Science Foundation (NSF) --- (*federal grant*) ...**MeLi...**
Title: Collaborative Research: Building a community of learners and scholars to develop, assess and disseminate educational materials & teaching practices in Machine Learning: Expanding project EMD-MLR.
Area of Research: Machine Learning.
Principal Investigators: Georgios Anagnostopoulos (ECE-FIT), M. Georgiopoulos (SEECs-UCF), Alison Morrison-Shetlar (Biology-UCF).
Period of Funding: September 2007 – August 2011.
Amount of Funding: \$499,822 (*UCF Portion \$262,386, FIT portion \$237,436*)
UCF Match: \$18,948
17. **Agency:** National Science Foundation --- (*federal grant*) ...**YES...**
Title: Young Entrepreneur (YES) Scholarship Program.
Area of Research: All STEM areas.
Principal Investigators: M. Georgiopoulos (SEECs-UCF)
Co-Principal Investigators: Cynthia Young (Math-UCF), Lisa Massi (CECS-UCF), Alfred Durchame (ET-UCF), Cameron Ford (Business-UCF).
Period of Funding: September 2008 – August 2015.
Amount of Funding: \$600,000.
UCF Match: \$75,000
18. **Agency:** National Science Foundation --- (*federal grant*)
Title: Collaborative Research: SCC Advance: Strengthening the Foundation of STEM Education for Seminole Community College Students
Area of Research: All STEM areas.
Principal Investigator (from SCC side): Heather Edwards (Math-SCC)
Principal Investigators (from UCF Side): Michael Georgiopoulos (SEECs-UCF)
Co-Principal Investigators (from UCF side): Cynthia Young (Math-UCF), Cherie Geiger (Chemistry-UCF), Scott Hagen (CECE-UCF), Alison Morrison-Shetlar (Biology-UCF), Christopher Parkinson (Biology -UCF).
Period of Funding: January 2009- December 2011.
Amount of Funding: \$200,000 (*NSF*); \$150,000 (*SCC*), \$50,000 (*UCF*)
UCF Match: \$13,820
19. **Agency:** Seminole State College
Title: Student Support Services for SCC Advance
Area of Research: All STEM areas.
Principal Investigator: Michael Georgiopoulos (EECS-UCF)
Period of Funding: January 2009 - December 2011.
Amount of Funding: \$15,000
20. **Agency:** WORKFORCE CENTRAL FLORIDA (WCF)
Title: EXCEL in Math Persistence Program.
Area of Research: All STEM areas.
Principal Investigators: Michael Georgiopoulos (EECS-UCF), Cynthia Young (Math-UCF)

Period of Funding: February 2010-June 2010.

Amount of Funding: \$20,000

Explanations: This contract was awarded to UCF Foundation after negotiations that Dr. Georgiopoulos had with WCF. The contract was signed by Provost Terry Hickey. The monies were used to increase the success of EXCEL students in their gateway math freshman classes. The contract did not go through ORC.

21. **Agency:** WORKFORCE CENTRAL FLORIDA (WCF)

Title: Work Experiences for Targeted Industries.

Area of Research: All STEM areas.

Principal Investigator: Michael Georgiopoulos (EECS-UCF)

Period of Funding: March 2010-August 2010.

Amount of Funding: \$25,000

Explanations: This contract was awarded to UCF after negotiations that Dr. Georgiopoulos had with WCF. The contract was signed by Provost Terry Hickey. The monies were used to support UCF student research experiences at UCF during Spring 2010 and Summer 2010 semesters. The contract did not go through ORC.

22. **Agency:** WORKFORCE CENTRAL FLORIDA (WCF)

Title: ARRA: Work Experiences for STEM Undergraduate Students at the University of Central Florida

Area of Research: All STEM areas.

Principal Investigator: Michael Georgiopoulos (EECS-UCF)

Co-Principal Investigators: C. Parkinson (Biology-UCF).

Period of Funding: March 2010-December 2010.

Amount of Funding: \$88,800

UCF Match (URI funds): \$14,198

23. **Agency:** National Science Foundation --- (*federal grant*) ...I³...

Title: I³: The UCF Community Embraces the Knowledge-Based Economy

Area of Research: All STEM areas.

Principal Investigator: Tony Waldrop (UCF Provost)

Co-Principal Investigators: D. Reinhart (CECE/ORC-UCF), M. Georgiopoulos (EECS-UCF), B. Furino (CECS-UCF), T. Lotz (Art/Design-UCF), C. Efthimiou (Physics-UCF), Carla Poindexter (Art/Design - UCF)

Period of Funding: May 2010 – April 2015.

Amount of Funding: \$1,045,130

24. **Agency:** WORKFORCE CENTRAL FLORIDA (WCF) ...**WCF-STEM (1)** ...

Title: STEM Research/Subsidized Employment for Undergraduates.

Area of Research: All STEM areas.

Principal Investigator: M. Georgiopoulos (EECS-UCF)

Co-Principal Investigators: C. Parkinson (Biology-UCF).

Period of Funding: August 2010-June 2012.

Amount of Funding: \$130,850

25. **Agency:** WORKFORCE CENTRAL FLORIDA (WCF) ... **WCF-STEM (2)** ...

Title: STEM Research/Subsidized Employment for Undergraduates.

Area of Research: All STEM areas.

Principal Investigator: C. Parkinson (Biology-UCF).

Co-Principal Investigator: M. Georgiopoulos (EECS-UCF), Michael Aldarondo-Jeffries (RAMP and McNair-Office - Undergraduate Studies)

Period of Funding: August 2010-June 2012.

Amount of Funding: \$274,500

Note: The above two grants have the same title, because in essence is the same contract effort, where in the second year the PI and Co-PI structure changed.

26. **Agency:** WORKFORCE CENTRAL FLORIDA (WCF) ... **WCF-NEI...**

Title: New and Emerging Research/Subsidized Employment for Undergraduates.

Area of Research: All STEM areas.

Principal Investigator: M. Georgiopoulos (EECS-UCF)

Co-Principal Investigators: C. Parkinson (Biology-UCF), C. Ford (Business-UCF), M. Aldarondo-Jeffries (Office of Undergraduate Studies-UCF), S. Dressler (EXP/LEA – Office of Undergraduate Studies), J. Herold (EXP/LEA – Office of Undergraduate Studies)

Period of Funding: August 2010-June 2012.

Amount of Funding: \$700,000

27. **Agency:** WORKFORCE CENTRAL FLORIDA (WCF)... **GEMS...**

Title: STEM Persistence and Female Mentorship Program for Undergraduates.

Area of Research: All STEM areas.

Principal Investigator: M. Georgiopoulos (EECS-UCF)

Co-Principal Investigators: C. Young (Math-UCF), M. Dagley (CECS-UCF), C. Parkinson (Biology - UCF).

Period of Funding: August 2010-June 2012.

Amount of Funding: \$257,500

28. **Agency:** National Science Foundation --- (federal grant) ... **STEPWork...**

Title: STEP Workshop: STEPWork

Area of Research: All STEM areas.

Principal Investigator: Michael Georgiopoulos (EECS-UCF)

Co-Principal Investigators: C. Young (Mathematics-UCF), Melissa Dagley (CECS-UCF)

Period of Funding: June 2012 – May 2017.

Amount of Funding: \$50,000.

29. **Agency:** Department of Labor ... **CF STEM...**

Title: Central Florida – STEM Training Consortium

Area of Research: All STEM areas.

Principal Investigator: Tom O’Neal (ORC-UCF)

Co-Principal Investigator: Michael Georgiopoulos (EECS, ORC-UCF)

Other Partners: Lockheed Martin, AT&T, IBM, Workforce Central Florida.

Period of Funding: April 2012 – December 2016.

Amount of Funding: \$5,000,000.

Matching Funds: Matching funds for the amount of more than 3,000,000 were provided by the partners (Lockheed Martin, AT&T, IBM and Workforce Central Florida) in this contract effort.

30. **Agency:** National Science Foundation --- (federal grant) ...**AEGIS**...

Title: Collaborative Research: RET in Engineering and Computer Science Site: Research Experiences for Teachers focused on Applications of ImagEs and SiGnals In High Schools (AEGIS)

Area of Research: Signals and Images

Principal Investigator: Michael Georgiopoulos (EECS-UCF)

Co-Principal Investigators: L. Wei (EECS-UCF)

Period of Funding: August 2012 – July 2018.

Amount of Funding: \$262,500.

Matching Funds: Matching funds for the amount of \$16,293 have been promised by ORC, CECS, and EECS.

Note: This is a collaborative proposal with FIT. FIT has received another allocation of \$225,000 to host teachers at their university site. The Two RET sites are working collaboratively in this effort.

31. **Agency:** National Science Foundation --- (federal grant) ...**COMPASS**...

Title: UCF COMPASS: Convincing Outstanding-Math-Potential Admits to Succeed in STEM

Area of Research: All STEM Areas

Principal Investigator: Cynthia Young (Math-UCF)

Co-Principal Investigators: M. Georgiopoulos (EECS-UCF), C. Parkinson (Biology-UCF), A. Daire (Education-UCF), M. Dagley (CECS-UCF).

Period of Funding: September 2012 – October 2018.

Amount of Funding: \$1,799,943.

Matching Funds: Matching funds for the amount of approximately \$780,000 provided by the Provost's Office, the Graduate College, COS, CECS, COM, Biology, Chemistry, Physics and Math.

32. **Agency:** Department of Defense --- (federal grant)

Title: Hardware-Assisted Large-Scale Neuroevolution for Multiagent Learning

Area of Research: Neural Networks, Multi-Agent Systems

Principal Investigator: Mingjie Lin (EECS-UCF)

Co-Principal Investigators: K. Stanley (EECS-UCF), L. Wei (EECS-UCF), M. Georgiopoulos (EECS-UCF), P. Wahid (EECS-UCF), Ronald DeMara (EECS-UCF).

Period of Funding: June 2012 – June 2013.

Amount of Funding: \$201,500.

33. **Agency:** National Science Foundation --- (federal grant) ...**CAMP-YES**...

Title: CAMP-YES (Career Advancement Mentoring Program – Young Entrepreneurs and Scholars)

Area of Research: All STEM areas

Principal Investigator: Michael Georgiopoulos (ECE-UCF)

Co-Principal Investigators: Cynthia Young (Math-UCF), Lisa Massi (CECS-UCF), Cameron Ford (CBA-UCF), Michael Aldarondo Jeffries (UG Studies-UCF).

Period of Funding: August 2014 - July 2019.

Amount of Requested Funding: \$634,500

Matching Funds: Matching funds for the amount of approximately \$15,525 provided by CECS, COS, UG Studies, and ORC.

34. **Agency:** State of Florida --- (state grant) ...**IT Performance Funding...**

Title: IT Performance Funding

Area of Research: IT areas, such as CS, IT and CpE

Principal Investigator: This proposal was submitted by UCF (IKM Office) on behalf of a number of Colleges (CECS, COHPA, CAH) to support IT related activities at UCF. UCF was one of four Florida institutions that were awarded the IT performance funds (\$3.5M). CECS received \$1.713M for each of the 2013-2014 and 2014-2015 fiscal years.

CECS Investigators: Michael Georgiopoulos (CECS), Zhihua Qu (ECE), Gary Leavens (CS/IT), Chuck Reilly (CECS), others.

Period of Funding: July 1, 2013 – June 30, 2015.

Amount of Requested Funding: \$3,426,000

Note: From 2015 fiscal year this funding for CECS has become recurring, per Provost's approval.

35. **Agency:** State of Florida --- (state grant) ...**CSIT TEAm grant...**

Title: CSIT (UCF-USF-FIU) TEAm: An Urban University Coalition Response to Florida's Computer and Information Technology Workforce Needs.

Area of Research: IT areas, such as CS, IT and CpE

Principal Investigator: This proposal was submitted by three institutions, UCF, USF and FIU to the BOG (Board of Governor's) in response to an RFP from BOG to increase the number of IT degrees from the Florida higher education institutions. The proposal was a result of contributions from multiple people from these three institutions and it was led by UCF.

CECS (UCF) Investigators: Michael Georgiopoulos (CECS), Zhihua Qu (ECE), Gary Leavens (CS/IT), Chuck Reilly (CECS), Mostafa Bassiouni (CS/IT), others.

Period of Funding: April 1, 2014 – December 31, 2015.

Amount of Requested Funding: \$4,858,378; UCF's *portion of the funding is \$1,790,667.*

Note: From 2015 fiscal year this funding for CECS has become recurring, per Provost's approval.

36. **Agency:** National Science Foundation --- (federal grant) ...**FLIT-Path...**

Title: Collaborative Research: Florida IT Pathways to Success (Flit-Path)

Area of Research: All areas in CS, It and CpE

Principal Investigator: Mostafa Bassiouni (CS-UCF)

Co-Principal Investigators: Michael Georgiopoulos (ECE-UCF), Pamela Wisniewski (CS/IT-UCF), Boqing Gong (CS/CRCV-UCF), Mark Heinrich (CS-UCF), Fei Liu (CS-UCF), Yier Jin (ECE-UCF).

Period of Funding: October 2016 – September 2021.

Amount of Funding: \$1,527,307. This is part of a bigger, \$5M, collaborative grant with FIU and USF (Lead FIU; PI from FIU is Mark Weiss from CS at FIU) with the intent of increasing the success of CS, IT and CpE students in these three institutions.

37. **Agency:** National Science Foundation --- (federal grant) ...**FLIT-GAP...**

Title: Collaborative Research: Florida Information Technology Graduation Attainment Pathways (Flit-GAP)

Area of Research: All areas in CS, It and CpE

Principal Investigator: Michael Georgiopoulos (ECE-UCF)

Co-Principal Investigators: Pamela Wisniewski (CS/IT-UCF), Mark Heinrich (CS-UCF), Fei Liu (CS-UCF), George Atia (ECE-UCF).

Period of Funding: July 2021 – June 2026.

Amount of Funding: \$1,679,888. This is part of a bigger, \$5M, collaborative grant with FIU and USF (Lead FIU; PI from FIU is Mark Weiss from CS at FIU) with the intent of increasing the success of CS, IT and CpE students in these three institutions.

Grants Pending

NA.

Research Focus

I have worked on a variety of research topics. Such topics include *communication networks, spread spectrum communications, neural networks and applications of neural networks in: (a) computer generated forces modeling, (b) smart antennas, (c) pattern recognition and image processing, (d) electromagnetics, (e) computer vision, (f) manufacturing and (g) remote sensing.* My most prolific research focus has been on **neural network algorithms** (with special emphasis on ART neural network architectures), on **neuro-evolutionary techniques** to optimize neural networks and on **support vector machines**. Applications of machine learning algorithms that have been of interest to me, and I have done work on are: design of **smart antennas** using neural networks, **modeling of computer generated forces** using neural networks and symbolic techniques, and applications of neural networks and **machine learning techniques in homeland and law enforcement** applications. I have also published on topics related to **college student retention** and **research experiences for undergraduates**.

SERVICE

Committee Services

During my tenure at the University of Central Florida, I have participated on **many different committees** at the Department, College and University level. Of these committee assignments, I have been a **chair of six committees** (the Communications committee for many years, the ECE Administrative committee for 2 years in a row, the ECE Personnel committee, the EE and CpE Graduate Affairs Committee for 3 and a half years, the EE Graduate Affairs committee for 6 and a half years, and the College TIP Criteria Committee for one year). I have been the chair of the EECS Graduate committee for the academic years 2006-2009. I have participated as a member of more than 40 committees during my tenure at UCF.

Professional Service

I have been the **Associate Editor of the IEEE Transactions on Neural Networks** (2002 – 2006).

I am an **Associate Editor of the Neural Networks journal** (2006-2012).

I have reviewed papers in a variety of journals and conferences in my research fields of interest.

I have been a session chair and a program committee chair of many conferences in my fields of interest.

I have served as a Local Arrangements Chair of the 28th IEEE Conference on Decision and Control.

I have served as a **Technical Program Chair of the 1996 Southcon** Conference.

I served as the **Local Arrangements Co-Chair of the IJCNN 2007 conference**.

I served as the **General Chair of the S+SSPR 2008** workshops that was held in Orlando, FL (UCF); affiliated with the ICPR 2008, to be held in Tampa, FL, December 2008.

I have served as the **Technical Program Co-Chair of the IJCNN 2011**, held in San Jose, California.

I have served as one of the **guest editors of the Special Issue of Neural Networks**, Volume 32, August 2012, Selected IJCNN papers; Editors: Jean-Philippe, Ali Minai, Hava Siegelmann, Cesare Alippi and Michael Georgiopoulos.

I have served (2012-2013) as a **member at large** of the **Executive Committee for CICEP** (Commission on Innovation, Competitiveness and Economic Prosperity), a commission sponsored by APLU (Association of Public and Land Grant Universities).

I have served (started fall 2013) on the Diversity Committee of the EDI (Engineering Deans Council Institute).