

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 2012: 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.

August 2010 - Present: 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, Communications Society.

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

Senior Member of the IEEE, Neural Networks Society.

Member of the International Neural Network Society.

Member of the National Technical Chamber of Greece.

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 Millionaire's Club Inductee

ADMINISTRATIVE ACTIVITIES

Here, I provide some of my accomplishments as the CECS Interim Dean, Interim Assistant VP of the Office of Research and Commercialization, EXCEL Program Director, and Graduate Coordinator of the EE and CpE programs.

My accomplishments as the dean of CECS will be reflected in my vita in integer multiples of the years after my appointment as the College's dean (e.g., first report of my accomplishments as the dean of the College will be provided in May of 2014).

CECS Interim Dean

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 it 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 eli^2's efforts in **finding more mentors for the senior design projects**, facilitating **closer peer mentor interactions** of CECS students, and supporting the eli^2'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.

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

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

EXCEL is an NSF STEP grant (2006-Present): 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

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

Dean of CECS:

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

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.

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, currently I have 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 oversee is more than **\$2M**. In particular, the EXCEL budget supports 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 every academic semester except in Fall 2012, which is the first academic semester since I assumed the responsibilities of the CECS Interim 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 ever 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** (11 to completion; 5 in progress). All these students were EE (Electrical Engineering) and CpE (Computer Engineering) students.

I am currently actively advising (member of the dissertation committee) the research of **1 Ph.D. student** from IEMS (Industrial Engineering).

I have actively advised the research (member of the dissertation committee) of **6 Ph.D. students**. All of these students were EE or CpE students.

I have advised/advising the research (chair of thesis committee) of **17 Masters students** (17 to completion). All of these students were EE or CpE students.

I have advised/advising the research of **72 undergraduate students** (66 to completion).

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 working as a Principal Scientist at AdSummos, 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 one conference paper, one journal paper (almost published) and he has one more journal paper, soon to be submitted for publication.

Employment: SPAR WAR Systems Center, San Diego California.

12) **Chair** of the Ph.D. committee for the Ph.D. student **Chris Sentelle**.

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

Anticipated Completion Date: Spring 2014.

Publications: Will be reported when Chris completes his work.

Employment: NA

13) **Chair** of the Ph.D. committee for the Ph.D. student **Cong Li**.

Research Area: Machine Learning.

Anticipated Completion Date: Summer of 2015.

Publications: Will be reported when Cong completes his work.

Employment: NA

14) **Chair** of the Ph.D. committee for the Ph.D. student **Yinjie Huang**.

Research Area: Machine Learning.

Anticipated Completion Date: Summer of 2015.

Publications: Will be reported when Yinjie completes his work.

Employment: NA

15) **Chair** of the Ph.D. committee for the Ph.D. student **Tiantian Zhang**.

Research Area: Machine Learning.

Anticipated Completion Date: Summer of 2015.

Publications: Will be reported when Tiantian completes her work.

Employment: NA

16) **Advisor** of the Ph.D. student **Niloofar Yousefi** (Industrial Engineering); chair of her committee is Dr. Mansooreh Mollaghasemi from Industrial Engineering.

Research Area: Machine Learning.

Anticipated Completion Date: Summer of 2016.

Publications: Will be reported when Niloofar completes her work.

Employment: NA

17) I had actively advised 6 other Ph.D. UCF students, as a member of their Ph.D. dissertation committee. Their names are listed below.

- (a) **Heileman**; graduated 1990.
- (b) **Ho**; graduated 1995.
- (c) **Zooghby**; graduated 1998.
- (d) **Henninger**; graduated Fall 2000.
- (e) **Johnson**; graduated Spring of 2001.
- (f) **Charalampidis**; graduated Summer of 2001.

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).

Undergraduate Students

A total of 70 undergraduate students have been advised by me in Machine Learning research. 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 Carbonne 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 Shandow, 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, 69, 70, 71, 72) 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:

- 68. Dayakar Aluvala; SCC student
- 69. Trent Gilkey; SCC student
- 70. Raul Hernandez; SCC student
- 71. Joe French ; UCF student
- 72. 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. 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).
3. Becky Dowell, Titusville High School. Research Project: *Speech Processing*. Faculty Advisor: Veton Kepuska (FIT). Graduate Student Mentor: Zacob Zarusky (FIT).
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.

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. 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).
3. 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).
4. 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.

In total, through the AEGIS RET project, we have involved **13 teachers** in summer research experiences at UCF and FIT.

RESEARCH

I have published over **250 papers** in journals, book chapters, or conferences, of which:

- **69** are journal papers.
- **178** are conference papers of which **12** were invited.
- **11** are book chapters.
- **1** is a book.

Refereed Journal Publications

Note 1: For the journal 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 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. Bebis, G. M. Papadourakis and M. Georgiopoulos, "Back-Propagation: Increasing rate of convergence by predictable pattern loading," *Intelligent Systems Review*, Vol. I, No. 3, Spring 1989, pp. 14-30.
5. 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.
6. 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.
7. 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.
8. 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. (Journal)
9. 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.
10. 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.
11. 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)
12. 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.

13. 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.
14. 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.
15. M. Georgiopoulos, J. Huang and G. L. Heileman, "Properties of learning in ARTMAP," *Neural Networks*, Vol. 7, No. 3, 1994, pp. 495-506.
16. C. S. Ho, J. J. Liou, and M. Georgiopoulos, "Mixed Analog/Digital VLSI implementation of ART1 memories", *Journal of Microelectronic Systems Integration*, Vol. 2, No. 1, 1994, pp. 23-40. (Journal)
17. G. Bebis, M. Georgiopoulos, "Feed-forward neural networks", *IEEE Potentials*, October 1994, Vol. 13, No. 4, pp. 27-31.
18. 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.
19. 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.
20. 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. (Journal)
21. J. Huang, M. Georgiopoulos and G. L. Heileman, "Fuzzy ART properties," *Neural Networks*, Vol. 8, No. 2, 1995, pp. 203-213.
22. 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.
23. 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.
24. 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.

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27. 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.
28. 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.
29. 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.
30. 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.
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33. 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.
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35. 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.
36. 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.

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41. G. C. Anagnostopoulos (*), and M. Georgiopoulos, "Category Regions as New Geometrical Concepts in Fuzzy ART and Fuzzy ARTMAP" *Neural Networks*, Vol. 15, No. 10, December 2002, pp. 1205-1221.
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43. J. Klodzinski, A. Al-Daraiseh (*), M. Georgiopoulos, and H. M. Al-Deek, "Development of a Java Applet for generating trucks from freight data," *Journal of Transportation Research Record*, National Research Council, No. 1870, October 2004, pp. 10-17.
44. J. Vargas, R. F. DeMara, M. Georgiopoulos, A. J. Gonzalez, and H. Marshall, "PDU Bundling and Replication for Reduction of Distributed Simulation Communication Traffic," *Journal of Defense Modeling and Simulation*, Vol. 1, No. 3, August, 2004, pp. 171 – 183.
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partitioning approach and the data partitioning approach”, *Nonlinear Analysis: Theory, Methods and Applications*, Volume 63, Issues 5-7, 30 November 2005-15 December 2005, pages e877-e889.

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51. S. Verzi, G. L. Heileman, and M. Georgiopoulos, “Boosted ARTMAP: Modifications to Fuzzy ARTMAP motivated by Boosting Theory”, *Neural Networks*, Volume 19, Issue 4, May 2006, pp. 446-468.

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53. J. Castro (*), J. Secretan (**), M. Georgiopoulos, R. DeMara, G. Anagnostopoulos, and A. Gonzalez, “Pipelining of Fuzzy ARTMAP without Matchtracking: Correctness, Performance Bound, and Beowulf Evaluation,” *Neural Networks*, Vol. 20, No. 1, January 2007, pp. 109-128.

54. M. Zhong (*), B. Rosander (**), M. Georgiopoulos, G. Anagnostopoulos, M. Mollaghasemi, and S. Richie, “Experiments with Safe μ -ARTMAP: Effect of the Network Parameters on the Network Performance,” *Neural Networks*, Vol. 20, No. 2, March 2007, pp. 245-259.

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57. A. Gonzalez, M. Georgiopoulos, R. DeMara, “Using context-based neural networks to maintain coherence among entities’ states in distributed simulations,” *The Journal of Defense Modeling and Simulation* , Vol. 4, No. 2, 2007, pp. 147-172.

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60. M. Georgiopoulos, R. F. DeMara, A. J. Gonzalez, A. S. Wu, M. Mollaghasemi, E. Gelenbe, M. Kysilka, J. Secretan, C. A. Sharma, A. J. Alnsour, “A Sustainable Model for Integrating Current Topics in Machine Learning Research into the Undergraduate Curriculum,” *IEEE Transactions on Education*, Vol. 52, No. 4, Nov. 2009, pp. 503-512.
61. M. Koufakou (*), M. Georgiopoulos, “A fast outlier detection strategy for distributed high dimensional datasets with mixed attributes,” *Data Mining and Knowledge Discovery*, Vol. 20, Issue 2, March 2010, pp. 259-289.
62. A. Kaylani (*), M. Georgiopoulos (*), M. Mollaghasemi, G. Anagnostopoulos, C. Sentelle, M. Zhong, “An adaptive multi-objective approach to evolving ART architectures,” *IEEE Transactions on Neural Networks*, Volume 21, No. 4, April 2010, pp. 529-550.
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69. J. Reeder (*), M. Georgiopoulos, “Generative Neural Networks for Multi-Task Life-Long Learning,” *The Computer Journal*, accepted for publication (August 2013).

Refereed Journal papers under Review

1. C. Li (*), M. Georgiopoulos, G. C. Anagnostopoulos, "A Unifying Framework for Typical Multi-Task Multiple Kernel Learning Problems," *IEEE Transactions on Neural Networks and Learning Systems*, under review (submitted in October 2012).
2. C. Li (*), M. Georgiopoulos, G. C. Anagnostopoulos, "Pareto-Path, Multi-Task, Multiple Kernel Learning," *IEEE Transactions on Neural Networks and Learning Systems*, under review (submitted December 2012).
3. C. Sentelle (*), M. Georgiopoulos, G. C. Anagnostopoulos, "A Simple Method for Solving the SVM Regularization Path for Semi-definite Kernels," *IEEE Transactions on Neural Networks and Learning Systems*, under review (submitted September 2013).

Book Reviews

1. M. Georgiopoulos, "Neural Network Systems, Techniques and Applications, *Control Engineering Practice*, Vol. 7, No. 2, pp. 279-281, February 1999.

Books

1. C. Christodoulou and M. Georgiopoulos. Applications of Neural Networks in Electromagnetics. Artech House, January 2001, 512 pages, ISBN 0-89006-880-1.

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**.

1. G. L. Heileman, M. Georgiopoulos, H. R. Myler and G. M. Papadourakis, "Improved back-propagation learning algorithms for neural networks," *Advances in Artificial Intelligence Research*, Vol. 2, Editors Mark B. Fishman and Janet L. Robards, JAI Press, 1992, pp. 177-211. (Chapter in Book; this paper has been chosen to be included in the book after a rigorous and highly competitive selection process from the papers presented at the FLAIRS 1989 Conference)
2. G. L. Heileman, H. R. Myler and M. Georgiopoulos, "An object-oriented approach to the simulation of artificial neural networks," *Progress in Simulation*, Vol. 1, Editors Z. W. Zobrist and J. V.

Lenard, Ablex Publishing Company, 1992, pp. 126-158. (Chapter in Book; an extended abstract of the paper has been reviewed and approved by the Editor)

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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.

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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 UCFs ORC (Office of Research and Commercialization) web-site, which reports funded efforts after 1993, the **amount of my funded research (PI, Co-PI), since 1993, is almost \$17M (my share exceeds \$6.5M).**

According to ORC data the **amount of my funded research (PI, Co-PI) in the last 10 years (2003-today) exceeds \$15M (my share exceeds \$6M).**

The major portion of this funding comes from federally funded research, such NSF, Navy, US Army, NIJ, WORKFORCE CENTRAL FLORIDA, DOL, among others.

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) --- CRCD Program (*federal grant*) ...**CRCD**...

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 2013.

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

Note: The first four-year funding of \$818,842 was awarded. The rest will be awarded after the submission and approval of the project's yearly reports.

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 2014.

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 – April 2016.

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

Matching Funds: Matching funds for the amount of more than 3,000,000 will be 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: June 2012 – July 2015.

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: July 2012 – September 2017.

Amount of Funding: \$1,799,944.

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.

Note: The first three year funding for this award have been allocated to UCF (\$1,062,788). The rest of the funding (years 4 and 5 of the grant) will be allocated upon a 3rd year project review and verification of successful progress of this effort.

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.

Grants Pending

Agency: National Science Foundation --- (federal grant) ...**WIDER-MATH...**

Title: UCF WIDER-MATH

Area of Research: All STEM areas

Principal Investigator: Cynthia Young (Math-UCF)

Co-Principal Investigators: Piotr Mikusinski (Math-UCF), Melissa Dagley (CECS-COS), Joseph LaViola (EECS-UCF), Erin Saita (FCTL-UCF), M. Georgiopoulos (ECE-CECS).

Period of Funding: May 2014- April 2017.

Amount of Requested Funding: \$1,999,904.

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: May 2014- April 2019.

Amount of Requested Funding: \$600,000

Matching Funds: Matching funds for the amount of approximately \$34,500 provided by CECS, COS, UG Studies, and ORC.

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.* Currently, my research emphasis is 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 are 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 in 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 committee 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).