NOMINATION COVER SHEET
2012 Virginia Outstanding Faculty Awards

1. NAME

Full (Legal): **Rasha Morsi** Preferred First Name: **Rasha**

2. INSTITUTIONAL INFORMATION

Institution: **Norfolk State University**

Rank/Position Title: **Associate Professor**

Year Rank/Title Attained: **Fall 2008**

Years at Institution: **8**

Campus Email Address: **rmorsi@nsu.edu**

Campus Phone: **757-823-0047**

Campus Mailing Address: **700 Park Av. Norfolk VA, 23504**

Campus Communications Contact:
-Name: **Cheryl Bates-Lee**
-E-mail:**cabates-lee@nsu.edu**

3. PROFESSIONAL INFORMATION

Academic Discipline: **Engineering**

Specialization/Field: **Electrical and Computer Engineering**

Type of Terminal Degree: **Ph.D.**

Year Awarded: **2002**

Awarding Institution: **Old Dominion University**

4. PERSONAL INFORMATION

Home Phone:

Cell Phone Number:

Home Mailing Address:

Please check only one box:

RESEARCH/DOCTORAL INSTITUTION NOMINEE: ☐
MASTERS/COMPREHENSIVE INSTITUTION NOMINEE: ☐
BACCALAUREATE INSTITUTION NOMINEE: ☐
TWO-YEAR INSTITUTION NOMINEE: ☐
TEACHING WITH TECHNOLOGY NOMINEE: ☒
RISING STAR NOMINEE: ☐

Table of Contents

Signature (President or Chief Academic Officer) Tony Atwater

Printed Name: Tony Atwater

E-mail address: tatwater@nsu.edu Telephone: (757) 823-8670

MISSION STATEMENT OF NORFOLK STATE UNIVERSITY (NSU)

Norfolk State University's Mission is to provide an affordable, high-quality education for an ethnically and culturally diverse student population, equipping them with the capability to become productive citizens who continuously contribute to a global and rapidly changing society.

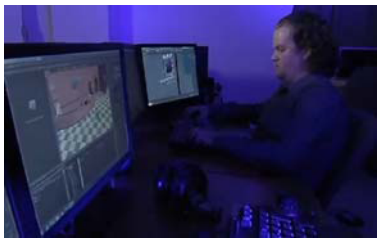
Strategic imperatives:

- Enhance students' success by providing high-quality academic instruction and support to ensure an improved graduation rate;
- Increase total funding by identifying multiple funding sources and new initiatives to form a solid fiscal foundation and to provide ongoing services for NSU's constituents.

SUMMARY OF ACCOMPLISHMENTS

As you walk into the Creative Gaming and Simulation (CGS) Lab at Norfolk State University, you see graduate and undergraduate students working intently at their computers; working on projects that can revolutionize the ways we teach and students learn. They are working in Dr. Morsi's lab on the development of games and simulations for use by her and others in the classroom. These applications cover a wide range of subject areas and are developed for different platforms:

- 3D iPhone/iPad apps for high school covering subjects such as Oceanography, Astronomy, and Chemistry
- 3D Xbox 360 games to teach basics of Digital Logic Design;
- Flash games to teach financial investment terminology for all age groups;
- 3D Virtual Nurse training tool to train nurses on curriculum-based content in a true virtual environment; and
- Online Flash-based training tools for basics in computer engineering and mathematics.



These are just a few of the projects that Dr. Morsi is working on in her lab. The goal is to provide curriculum and assessment-based games and simulations that can be used in the classroom as teaching and assessment aids. Having the ability to see assessment results provides the teacher with invaluable insight into his/her students' learning and progress.

TEACHING (Instruction)

For Dr. Morsi, teaching is a calling rather than a job. Her passion for ensuring that her students learn has made her one of the most loved teachers in her department. Students often approach her to ask questions, get advice, or just chat. She has always had an excellent rapport with her students, which has made them comfortable in approaching her as a teacher as well as a mentor. Dr. Morsi considers it a privilege when students approach her as a friend. It is this relationship and the ability to be there for her students in their times of need that Dr. Morsi cherishes the most. The ability to ensure learning through opening the channels of communications with her students allows her to always be there for them. It is this relationship that has allowed Dr. Morsi to create new ideas for serious games and simulations that has allowed her to aid her students in providing a more 'real' and 'up-to-date' form of education. Dr. Morsi decided early on in her career to perform research in Modeling and Simulation with the application of education. This path allowed her to develop the tools that she uses in her classroom and by that ensure the appropriateness of these tools in addressing the curriculum and student learning styles in her classroom. Dr. Morsi founded and is currently director of the Creative Gaming and Simulation (CGS) Lab, a research lab dedicated to the development of educational technologies to provide students with an advanced educational experience (CGS website: http://cgs.nsu.edu). Through her research lab, she has **provided undergraduate research** experiences for **19 students**, **12 of which were funded through her projects**. In the summer of 2009, she hired a rising sophomore on one of her research projects. Now over two years later, this student is one of her permanent researchers in the lab. He is currently hired in her lab on a project funded by The American Library Association through a partnership between the Chesapeake Public Library and her research lab to develop a Flash Game to teach children

and adults financial literacy and sound financial investments. He also worked on the development of an iPad app to teach Oceanography to high school students. This design won him the senior project award from his department (due to his research experience in the CGS lab, he was able to take the senior project course requirement a year early).

Since joining NSU in 2003, Dr. Morsi has developed and taught **14 different courses in Electrical and Computer Engineering**. Her teaching success is shown in her teaching evaluations, with averages consistently higher than the comparative 4 year institutions. She recently developed an Advanced Topics Course (EEN 690): Animation and Graphic Design, where students learn how to develop 3D animations and design and develop animated movie clips (see projects page on CGS website for one of these projects). During the past year, Dr. Morsi has deployed iPads in her classes and is evaluating their effect on student engagement and success.

Dr. Morsi's outstanding teaching, research, service abilities, and student successes have been recognized at the departmental, College, University, local, and national levels:

- **Top Faculty Award (Engineering Department)**, College of Science, Engineering, and Technology (CSET), NSU, 2008
- **Emerging Scholar**, *Diverse Issues in Higher Education, January* 2008 issue. This is an honor given to ten faculty members nationwide as recognition for outstanding performance as a teacher and researcher (see additional documentation).
- **Gaining through Gaming - Inside Business** article written about her work in Modeling & Simulation, March 17, 2008 (see additional documentation).
- **NSU University Award of Excellence**, "highest honor to be bestowed on a faculty at the university, awarded for excellence in research, teaching, and service", 2007
- **Teacher of the Year**, College of Science, Engineering, and Technology, NSU, 2006.

TEACHING (Student Development and Learning)

Dr. Morsi has been an outstanding advisor throughout her tenure at NSU. She has advised students with passion and has taken it upon herself to develop advising documents that not only aid the faculty during advising but also aid the students in understanding where they are within their curriculum. She also introduced curriculum flowcharts to help the students track their progress in the curriculum. She is viewed by her students, not only as a concerned faculty member, but also as a friend: *"my dear advisor, and backbone through the entire senior year paperwork troubles… Thanks for all your help, and encouragement. I made it and it was thanks to you and some of your colleagues. So thanks." Stacey-Ann Simpson, 2007*.

While chair of the departmental Advising Committee ('06-'08), she developed a departmental advising manual to enable faculty to advise engineering students. Dr. Morsi is currently the Graduate Program Coordinator for the Engineering Department. Since being appointed, she has developed advising forms, including program completion worksheets and a Graduate Student Handbook, to provide students a better understanding of the program requirements and policies. The graduate program enrollment has more than doubled since she was appointed to this position. Graduation rates have also increased. This is a direct reflection of her selfless dedication to the recruitment and advising of these students. She has taken over all the advising duties for the graduate program (~34 students). Dr. Morsi introduced the Turnitin check for masters theses last year. She recognized the need to teach the graduating masters students the importance of ethical responsibility through the thesis review process. With the internet being the easy way out for any student working on a project or report, it is even more important now to stress the need for ethical responsibility in writing.

As chair of the Student Success Seminars Committee (2004–2010), Dr. Morsi has provided students with the survival skills necessary for a successful undergraduate education at NSU. The seminars cover topics such as time management, study skills, note taking, formal report writing, and formal presentations, and ethics in research. The seminars have been a great success as presented in a paper at the Frontiers In Education (FIE) Conference – 2007.

Dr. Morsi's undergraduate and graduate research students have been honored with many awards and have won numerous poster and oral presentation awards. At one conference, her three research students swept all the awards (as shown below); this is a direct reflection of her outstanding mentoring in research.

- Computer Science student and CGS researcher Michael Chase was awarded the **top senior project award** by the Computer Science Department at Norfolk State University (2011).
- CGS graduate, Brandon Little-Darku was awarded the **Dr. Ernest E. Just Science Medal** by the Omega Psi Phi Fraternity Inc. 2009. Brandon was funded for two years on Dr. Morsi's grants.
- CGS graduate, Terin Reed wins the NSU **Graduate School Academic Excellence Award** for his outstanding academic achievement in the Master of Science in Electronics Engineering degree program, 2009. Terin was also funded on Dr. Morsi's grants for a full year.
- CGS graduate, Edward Jackson, wins the **2009 Council of Historically Black Graduate Schools' Proquest Thesis Award** for his work entitled "Dynamic Output Analysis of a Port Simulation." Edward had been continuously funded on several of Dr. Morsi's grants ('04-'09).
- Edward Jackson, Rasha Morsi, "PORTSIM 6.0 Output Analysis" 2008 conference on Broadening Participation in Computing Disciplines, October 9-10, 2008. **(First Place Poster Winner)**
- Terin Reed, Rasha Morsi, "CGS Brain Busters", 2008 conference on Broadening Participation in Computing Disciplines, October 9-10, 2008.**(Second Place Poster Winner)**
- Brandon Little-Darku, Rasha Morsi, "VCGS: Virtual Center for Gaming and Simulation", 2008 conference on Broadening Participation in Computing Disciplines, October 9-10, 2008. **(Third Place Poster Winner)**
- iMEd: iPhone Interactive Math Modules for Education, Brandon Little-Darku, Virginia State University 3rd Annual HBCU-UP Symposium, April 2009 (**3rd Place Oral Presentation)**

DISCOVERY (Scholarly Activities and Works)

Dr. Morsi is aggressive in her research, which is evident in her funding level. Since 2002, she has submitted **36 grant proposals** of which **16** have been awarded. This is a **44% success rate** amounting to over **$5.3M in funding** of which **$4.8M is as Principal Investigator (PI)** (either single PI or PI with one Co-PI). An interview with a local radio station, discussing a recent award of $2.1M from the US Army Medical Research and Material Command, can be found at http://cgs.nsu.edu. This project can also be seen as the flagship research promoted in NSU's recent YouTube video found at: http://www.youtube.com/watch?v=-JlgcDW8U_Y. Dr. Morsi has successfully advised **8 masters thesis and 2 masters project** students at NSU and was a member on the committee of one successful Ph.D. Dissertation at Old Dominion University. **She is currently research advisor to 8 masters thesis, and 1 graduate and 2 undergraduate research students. All but two are funded through her research grants**. Since 2005, Dr. Morsi has been yearly awarded CSET's Outstanding Grantsmanship award as a reflection of her achievements. Dr. Morsi's research successes were reported by *Inside Business* (March 19th, 2008) in an article reflecting her achievements in her innovative research and lab projects.

One of Dr. Morsi's important projects (CPortS project ('02-'08)) was funded by the Department of Defense. Her stellar work on this project is evident from Mr. Joseph Joines' (CPortS Program Manager, Military Surface Deployment and Distribution Command Transportation Engineering Agency, Systems Integration Division) comments in 2006:

> *"Dr. Morsi's work on the seaports simulation CPorts, is a credit to her profession and Norfolk State University. Her efforts have been instrumental to the success of the CPorts program and the mission of our agency…. Dr. Morsi epitomizes the "best and brightest" by her expertise in the field of computer science, her work ethic, and her outstanding leadership qualities. Dr. Morsi consistently brings innovative yet practical solutions to our model development challenges…."*

Dr. Morsi has co-authored a chapter in the ***Handbook of Nanoceramics and Their Based Nanodevices*** *(5-Volume Set)*, edited by T. Y. Tseng and H. S. Nalwa, and published by American Scientific Publishers (2009). The review chapter is entitled **"Carbon Nanotube (CNT) Reinforced-Ceramic Composites: Processing, Properties and Nanotube Simulation***".* Her expertise in modeling and simulation was instrumental to the success of this publication.

Dr. Morsi has also authored/co-authored **24** peer-reviewed publications (including conferences) and 8 peer reviewed posters, and made **over 50** invited, workshop, and conference presentations discussing her research and advances in technology. Her most recent presentation was as **a keynote speaker** at the Rensselaer Eleventh Annual Colloquium on Teaching and Learning discussing her current research and the use of social media in education (May 2011).

KNOWLEDGE INTEGRATION (Teaching with Technology)

As a software developer, Dr. Morsi is in a unique position to be able to develop the technologies with which she wishes to teach. She has developed novel online practice tools for Digital Logic Design (a core course in Engineering). She makes use of simulation and analytical tools to produce interactive tools that evaluate the correctness of student responses Just-In-Time (JIT). This is a novel idea since the majority of ongoing research is in the development of tutorial-based tools, what she considers 'homework helpers'. Dr. Morsi has developed e-tools that provide ECE students with the ability to practice what they have learned in the classroom. The Combinational Logic Design Tool (CLDT) (http://cgs.nsu.edu/projects.php?view=featured), provides students with randomly generated problems for them to solve. The tool provides them with a 'correct' or 'incorrect' response and allows them to analyze their responses.

Dr. Morsi has been integrating her research into her teaching by using the tools developed in her lab as teaching aids in her classroom. She uses the CLDT with her students providing them with a tool to practice and receive feedback online and outside of the classroom. Over the last three years, Dr. Morsi has formally evaluated this use of CLDT in her classroom using an external evaluator (funded by NSF). The results showed that: "students realized a higher grade from pre-tool-use to post-tool-use" and the tool "has proven to help students improve in their learning, monitoring their learning, and engaging in ways to improve the tools that facilitate learning." Dr. Morsi has also used an Xbox 360 game (BINX) developed in her lab. BINX addresses Number Systems and their arithmetic operations. The gameplay takes place inside a computer where a malicious virus is threatening the computer's operability. The player has to find the virus and eradicate it by disconnecting the terminals of the graphics processor. In the practice phase, the player practices number conversions without fear of penalties. In the Challenge phase, the player is timed and has to perform the number conversions before the

allotted time expires. BINX has been formally evaluated in Dr. Morsi's classroom and has also proven to be "engaging and fun" as well as helping students to score higher on their assignments and in the class. The results also showed unanimous interest in the game and evaluation of the game as a game where the students forgot that they were learning and were actually playing the game for fun.

Dr. Morsi also develops games and applications for integration into K-16 curricula in general. Following is a list of current games and their applications:

- CGS Brain Busters, an educational boxing game that allows students to play while practicing, through 'identification and association', core concepts of any learning content. The framework is designed to allow the non-programmer the ability to edit educational content with minimal effort. Content ranges from basic geometry shapes to circuits and electronics to languages. A formal evaluation of CGS Brain Busters is underway.
- NAEQG is a Flash quiz game designed and developed for use in the K-12 system. The game uses released SOL tests as part of a question bank. The user can select from grade levels and subjects. NAEQG is designed to allow easy addition of subsequent released tests through use of an XML input file.
- iPad apps (funded by the WHRO local TV station for integration into their virtual high school curriculum): Oceanography, Astronomy, and Chemistry apps have been developed and are near completion. These apps will undergo a formal evaluation this Fall in order to assess their learning capability. They will be freely available on the iTunes store. Using this mobile environment for development of educational applications should produce a high impact due to the popularity of the platform.

KNOWLEDGE INTEGRATION (Curricular Development and Meaningful Connections between Discovery and Teaching)

In 2007, Dr. Morsi developed a new Introduction to Wireless Communications technical elective course in the department of Engineering at NSU. This course presents the latest wireless technologies and their design to seniors in the department. She has also developed an Animation and Graphic Design course, as a means of integrating her gaming, modeling, and simulation discovery into teaching. As the graduate coordinator, Dr. Morsi has been instrumental in the development of curriculum changes required for graduate program implementation. Dr. Morsi is currently working on the design of a graduate certificate program in game design and simulation which she expects to start offering Fall 2012.

Some of Dr. Morsi's projects are also ***cross-disciplinary*** in nature. The CGS Brain Busters boxing game is designed to use any curriculum content. This allows for content such as *languages, science, geography, history*, *and other subject matter* requiring knowledge of association and identification of facts. The $ave $teve game (a collaboration with the Chesapeake Public Library in Hampton Roads) presents a slew of mini games and interactive tools to teach *financial literacy* in America's libraries. $ave $teve has been launched nationwide and has proven, through a formal evaluation conducted by the library, to be a success among young and mature users alike. Dr. Morsi's most recent and Flagship project, VNurse, is a fully interactive 3D

training environment funded by the Department of Defense. VNurse addresses current issues regarding *nurse preparation*. It will provide an opportunity to increase the training and efficiency of nursing students. The project will evaluate the learning of clinical content and how this is translated into performance of clinical tasks. Dr. Morsi uses the latest Motion Capture technology to produce the animations in VNurse that make it a hyper-real training environment for nurses. This tool is expected to be evaluated starting this Fall and continue evaluation in 10 different sites nationwide over the next two years.

SERVICE (Institution and Community/Society Outreach and Service)

Dr. Morsi's service to the community of Hampton Roads has recently been recognized by the honor of the **YWCA Woman of Distinction Award** for Science and Technology. This very prestigious award is a testament to her service to her university and community. Dr. Morsi's service to the College, University, and community was also recognized with her being awarded CSET's "Contributor of the Year Award" in 2005. She was given this award for her continuous service and for "always willing to lend a hand whenever needed".

Dr. Morsi's name is consistently associated with the Integration of Gaming and Modeling and Simulation (M&S) into K-16 curricula. She has been invited on numerous panels and has organized and conducted **11 workshops for K-16 teachers**, **students, and college faculty** discussing methods and techniques for this integration. She has also conducted and organized/co-organized five workshops presenting the integration of wireless technologies into K-12 curricula. Her most recent workshop introduced 20 office professionals to social and professional networking sites, how to set up an account, and how to set up the security settings for such accounts. Not only is Dr. Morsi applying her knowledge of M&S and wireless technologies into curricula integration, she is also sharing this knowledge by teaching others how to do it.

Dr. Morsi has provided outstanding service to her institution that has far surpassed what is expected of a faculty member. She is/has been **a member (and sometimes chaired) 26** departmental, college, and university committees. She was selected to be on two presidential committees and has served on and chaired the University Outstanding Faculty Awards committee for the university.

Dr. Morsi was a sponsor of an Engineering club at Oakland Elementary School (2006 – 2008). This club taught fourth and fifth graders basics in Electronics Engineering. She has also conducted numerous workshops and seminars for high school and middle school students introducing Engineering as a career. Dr. Morsi consistently conducts gaming workshops for middle and high school students as well as the Girl Scouts of Colonial Coast. Since 2005, Dr. Morsi has hosted the TEAMS competition at NSU. This is a national one-day competition that encourages high school students to work and think as engineers. She has supported small women-owned businesses as well as local schools with her technical expertise.

SERVICE (Professional Service)

Professionally, Dr. Morsi is a member of the technical program committee for the *Communications and Networking Simulation Symposium (CNS '08 – '11*) and the VMASC advisory board. She is an active technical reviewer for the IEEE Transactions on Education ('08- to date), Int. Journal of Modeling & Simulation ('04 – to date), Int. Journal of Modern Engineering (IJME) Board of Reviewers member ('04-'10), NSF GRFP and NSF CCLI Panelist '09-'11 and '08 respectively, Frontiers in Education (FIE); '03, '04, '06, '07, American Society for Engineering Education Conferences, ('04 – '08), and Wireless Telecommunications Symposium (WTS) in '07.

PERSONAL STATEMENT

"Give a man a fish and you feed him for a day.
Teach him how to fish and you feed him for a lifetime."
Quote from Lao Tzu, Chinese philosopher, poet, 6th century BC

Teaching has been a dream of mine ever since I was 14 years old. I've always been fascinated by the power of a teacher and the ability to feed the young minds that resemble sponges waiting to be soaked in knowledge. Mathematics had always been my favorite subject, but I always thought it was natural to love math. It was not until I had an amazing math teacher - Mrs. Shaw - that I realized I had a talent that I was unaware of. She was the perfect teacher. Her words of encouragement and belief in my abilities helped me in more ways than she knew. My dream became a goal. I wanted to be a teacher who provided the ability to learn not just relay information. More importantly, I wanted to be a teacher who provided encouragement and who helped not only the top students, but also those students who had the potential to be successful but never found an encouraging word to set them on their way.

Teaching to me is a passion not a job. I am always excited about what I teach and try to project this excitement onto my students, hoping this excitement will somehow transfer to them and get them excited about their work. Lao Tzu's quote speaks volumes as far as my teaching philosophy and strategies are concerned. I like to steer away from 'spoon-feeding' the students the information, but rather I try to lead them to the right path and *help* them acquire it. I encourage and promote independent thinking and always try to provide an environment which is conducive to learning and success both in my classroom as well as in my research lab. I always try to help my students admire, if not love, what they are doing. From experience, if you love what you do, you will excel at it. I also truly believe that a teacher is also a friend. Teaching has allowed me to be a mentor to some of my students, and this has helped in many ways, the most important of which was the ability to help a student suffering from a crisis of any sort. Being a friend as well as a teacher has made it easier for students to come to me with their problems and trust that I have their best interests in mind. It has often put me in a position where I can encourage and help them overcome their problems and continue with their education and love of knowledge. If you gain their trust, you will gain their undivided attention in the classroom.

Being a university professor means having a love for teaching, research, advising, and mentoring, and a commitment and belief in the need to better your community. This requires you to be selfless. I have a rule in my classes: if I receive an email from a student, I provide response within 24 hours (more often, within the hour). Showing this kind of commitment is a real example to them of what it is to be dedicated to one's job and mission in life. If how I teach and treat my students provides them with the ability to produce useful knowledge for the world, then my job is accomplished.

Students are our future. Our attention needs to always be committed to providing them with the opportunities to conduct real-world application research as early as possible in their college years. This is why undergraduate research experiences are crucial in producing successful professionals in our society. My undergraduate researchers have gone on to pursue graduate degrees at Georgia Tech and Boston University, among others. My research graduates pursuing careers in the industry and government have been appointed at companies such as AOL, Goldman Sachs, Missile Defense Agency, Army Corps of Engineers, and Siemens among others. I remain in touch with all my past students and am proud of their stellar accomplishments. I am proud and humbled when they offer to support me and my lab at events

we host knowing that they have no obligation to do so. It pleases me that I have taught them well; to be selfless and to consider the betterment of mankind.

I was pleasantly surprised one Saturday afternoon when I received an email from a past student who was a Computer Science Major with a minor in Computer Engineering and had taken a senior level course (Microcontrollers) with me. The Microcontrollers course is one of the most difficult courses in the curriculum. She had just returned from her graduation ceremony and took the time to email me and thank me for encouraging her and pushing her to succeed and not give up (despite personal problems that could have led to that). It is messages like this that make all the hard work and effort that go into teaching and mentoring worthwhile. To know that you have made a difference in someone's life is the very reason that I chose to be a university professor.

My teaching methods are structured around principles that I have acquired from over 30 years of teaching and learning experiences. I assign homework that allows students to integrate the fundamentals learned in classroom with their inquisitive minds and encourages them to start asking the questions "why?" and "how?", I relate assignments to real-life problems and teach the students how to approach an assignment by example. I truly enjoy being able to sit with the students, one-on-one, and go through the process of learning. Most of the courses I teach have recently been computer hardware courses. Working hands-on with students on hardware problems and providing the ability to realize the setup and debugging of a microcontroller, for example, then to see how their eyes light up with excitement when knowledge has actually been acquired is priceless.

Use of technology in teaching should be a requirement, not an option, for university professors. Our classrooms are now populated with the 'digital native' which means we have to make use of the technologies that they were born with in order to keep their interest in the classroom as well as in education in general. This is why I chose the application of education in my Modeling and Simulation research. **My research integrates seamlessly with this declaration** since my goals are to develop sound models for developing games and interactive applications for education using the latest technologies known to our 'digital natives'. In my research lab (CGS), interactive PC and iPhone/iPod Touch applications as well Xbox 360 and PC games focused on education are being continuously developed. Tools developed at CGS target both the teacher and the student. In order to integrate research applications in teaching, both constituents need to realize the gain from using such tools.

Being able to use what I produce in my classrooms and see how it helps my students learn better, makes all the hard work worthwhile! Formally evaluating the applications developed in my lab is a crucial juncture in the realization of real learning through their use. The e-learning tools that I have developed have been extremely well accepted by my students as ***practice*** tools that do not provide solutions but engage the student and promote learning experiences that encourage them to utilize the skills learned to solve problems.

Community service is also something that I strive to excel in. I like to share my professional expertise with others. I am a supporter of the Girl Scouts of Colonial Coast and am currently a Member-At-Large on their board. I have conducted numerous game development workshops for the Girl Scouts as well as middle and high school students.

I only wish that Mrs. Shaw could see me now. Like her, I have the passion for being a mentor and model teacher, and I hope to pass on that passion to my students and my children.

Abbreviated Curriculum Vitae (Rasha Morsi)

Education

B.Eng.	Computer Systems and Electronics Engineering, King's College, University of London, First Class Honors, July 1991
M.E.	Computer Engineering, Old Dominion University, December 1996
Ph.D.	Electrical and Computer Engineering, Old Dominion University, May 2002

Abbreviated Professional Experience

2008-to date	Associate Professor, Engineering, Norfolk State University (NSU)
2004-2008	Assistant Professor, Engineering, NSU
2003-2004	Assistant Professor, Engineering/Technology, Joint Appointment, NSU
2002-2003	Lecturer of Electrical and Computer Engineering (ECE), Old Dominion University (ODU)
2000-2002	Part time Instructor of ECE at ODU

Select Honors and Awards

2009	**YWCA Woman of the Year** – Science and Technology
2008	**Emerging Scholar**, *Diverse Issues in Higher Education*
2008	**Top Faculty Award (Engineering Department)**, College of Science Engineering, and Technology (CSET), Norfolk State University
2007	**University Award of Excellence**, NSU
2006	**Teacher of the Year**, CSET, NSU
2005-2008	**Outstanding Grantsmanship** award, CSET, NSU

Partial Funding List ($5.3M Total funding- $4.8M as PI (single or with one co-PI)):

- **Principal Investigator (PI):** VNurse Phase II, **Amount:** $2.101 M **Agency:** US Army Medical Research and Materiel Command (USAMRMC). **Period:** 24 Aug. '10 - 23 Aug. '12
- **PI:** iPhone/iTouch App Development for the E2T2 Project; **Amount:** $69,665.00; **Agency:** WHRO TV Station; **Period:** 27 Aug, '10 - 30 Sept. '11
- **PI:** VNurse: Modular Dynamic Virtual Simulation Framework for Nurse Training, **Amount:** $2.103 M **Agency:** US Army Medical Research and Materiel Command (USAMRMC). **Period:** 24 Aug. '09 - 23 Mar. '12
- **Co-PI:** Collaborative Research: Capitalizing on Opportunity: Narrowing the Gender Divide in Engineering and Computer Science through Professional Development, **Amount:** $48,725. **Agency:** National Science Foundation. **Period:** 1 Jan. '10 – 31 Dec. '12
- **Collaborative Project (PI for NSU):** ALA Grant proposal, $ave $teve Project, **Amount**: $55,470.90. **Period:** Mar. '09 – Jul. '11.
- **PI:** OPT-FOR-A in ECE, NSF CCLI (DUE-0737242); **Agency:** NSF, **Amount:** $149,480. **Period**: 15 Mar. '08 – 31 Jan. '10
- **PI:** Configurable Port Simulation (CPorts) Output Analyzer for the DIESEL engine, Research undertaken in support of the Military Traffic Management Command Transportation Engineering Agency (MTMCTEA) mission. **Renewal Amount:** $43,751.62 **Agency:** MYMIC, LLC. **Period:** 1 Sept. '07 – 31 Aug. '08 (**Total prior funding on project: $353,231.38**)

Publications and Scholarship (Select Publications of 27 including an invited book chapter)

- **Rasha Morsi**, Chad Richards, Mona Rizvi, "Work in Progress - BINX: A 3D XNA Educational Game for Engineering Education", IEEE Frontiers in Education (FIE) Conference, Washington DC, October 27-30, 2010
- **Rasha Morsi**, Mona Rizvi, "VNurse: Modular Dynamic Simulation Framework for Nurse Training", *E-LEARN 2009*, Vancouver, Canada, October 2009.

- Changlong Zhu, **Rasha Morsi**, "Formal Specification of FFHMIPv6 Packets Using PVS", *12th Communications and Networking Simulation Symposium (CNS'09),* San Diego CA, March 2009 (Short Paper)
- **Rasha Morsi**, Linton Russell, 'CLDT: A Combinational Logic Design Interactive Web-based Tool', *International Journal for Modern Engineering (IJME)*, Volume 8, Number 1, Fall 2007
- **Rasha Morsi**, Wael Ibrahim, Edward Jackson, "Concept Map Presentation Tool (CMPT): Teaching Wireless Communications using Concept Maps", *ASEE SE Section Annual Conference*, Marietta, GA, April 5-7, 2009.
- **Rasha Morsi**, Wael Ibrahim, Frances Williams, 'Concept Maps: Development and Validation of Engineering Curricula', *FIE Conference*, Milwaukee, WI, Oct. 10-13, 2007
- **Rasha Morsi**, Edward Jackson, 'Playing and Learning? Educational Gaming for Engineering Education', *FIE Conference*, Milwaukee, WI, Oct., 2007
- **Rasha Morsi**, Patrice C. Smith, Sandra J. DeLoatch, 'Student Success Seminars: A School Level Freshman Intervention Program', *FIE Conference*, Milwaukee, WI, Oct. 10-13, 2007
- Wael Ibrahim, **Rasha Morsi**, "A review of Online Degrees in Electrical and Computer Engineering", Invited paper, *International Journal of Modern Engineering (IJME)*, Sept. 2005.

Thesis/Research Advisor:

MS Thesis (current): EEN: Toria Duke, Michael Westbrook, Togba Liberty*, Linmin Pei*, Charles Chirchir*, Hui Sun*; CSC: Stacey Downing*, Changlong Zhu*; *Past:* 8 MS, 1 PhD committee member; **MS Non-thesis (current):** Christopher Fritzel*; *Past:* CSC: 6 & 3 EEN; **Undergraduate (current):** Michael Chase* and Joshua Sherfield*; Past: 20 students (9 funded). * *denotes funded research*

Select Public and Academic Service:

Invited Panel Presentations:

- 13. Keynote Speaker: "Playing and Learning? Educational Gaming for Engineering Education", Rensselaer Eleventh Annual Colloquium on Teaching and Learning: Social Networking- The Power of Many, May 23rd and 24th, 2011
- "Beating the Odds: Embracing Diversity", 2009 Virginia Network Annual State Conference, Putting the Pieces Together: Bringing Unity and Balance into Your Life, Petersburg VA, May 29th 2009.
- K-12 Panel presentation, "M&S in Education Challenges at the College Level", MODSIM World Conference & Expo, VA Beach, VA, September 16, 2008

Member: Technical Program Committee**,** 11th,12th, and 13th Communications and Networking Simulation Symposium (CNS'08, '09, and '10), VMASC Advisory board

Organized: Office professionals workshop "Social Media: Get Connected", Sept. '10, NSU; High School Teacher development workshop, "Using Scratch in the classroom", Apr. '09, NSU, Middle School Technology Coordinator Teacher development workshop, "Using Scratch in the classroom", Oct. '08, NSU

Reviewer: American Society for Engineering Education Conferences, ('04-'08); Wireless Telecommunications Symposium (WTS '07); International Journal of Modeling and Simulation ('04–to date); International Journal of Modern Engineering (IJME) Member - Board of Reviewers ('04–to date); IEEE Education Journal ('07–to date).

University: Member, Research Advisory Committee (University) ('06 – to date); VMASC Advisory Board ('07-to date); departmental committees (Curriculum, assessment, advising chair, dissemination); Graduate Program Coordinator ('09 – to date); Chair, STARS Student Success Seminars (School)

Community: **Member-at-Large**, Board of Directors, Girl Scout Council of Colonial Coast (07-11), **Coordinator**, JETS TEAM competition host, NSU ('07-to date); **Member**, Advisory board, Elijah Foundation

LETTERS OF SUPPORT (EXCERPTS)

"Dr. Morsi is an exceptional scholar and winner of NSU's first University Award of Excellence in recognition of her teaching, research, and service contributions. She has brought distinction to NSU and the Hampton Roads community through her innovative use of technology in teaching and learning. Her recently, and substantially funded, VNurse Project is an exemplar, bringing together the talents of engineers, computer scientists, and nurses to develop a revolutionary tool for nurse education and training."

Dr. Tony Atwater, President, Norfolk State University (NSU)

Rasha Morsi is the most technology savvy faculty in the Engineering Department. She engages students in her class using virtual reality technologies that are interactive to get home the ideas. No wonder students are keen to register for her classes. Coupled with her enthusiasm in teaching, Dr. Morsi is making great strides using technology in the classroom.

Dr. Sacharia Albin, Chair, Engineering Department (NSU)

"I have known 4-5 recipients of this award. Rasha, in my opinion, should be selected to receive this very prestigious award. I've known Rasha for almost three years, most recently interacting with her as part of the Hampton Roads Modeling and Simulation Initiative. I have served with her on academic committees, I have observed her lead professional development workshops, and I have collaborated with her in planning MODSIM World 2009 Conference and Expo… In all of these endeavors, Rasha is the consummate professional. What impresses me the most about Rasha, however, are her leadership skills; her successful integration (use) of technology into her classes; and her ability to (1) motivate her students to produce impressive results, (2) extract the very best from all of her students, and (3) her willingness to "be available" to her students. In closing,… It is rare that I have an opportunity to serve as a reference for such a deserving individual as Dr. Rasha Morsi."

Dr. Thomas E. Pinelli, University Affairs Officer, NASA Langley Research Center (2009)
(Professional colleague)

"I have benefited personally from Dr. Rasha Morsi since I arrived here at Norfolk State University (NSU) as the Director of DNIMAS Program and Associate Professor of Chemistry. Dr. Morsi has volunteered to serve as a faculty mentor to me. She has advised me on several publications and on some proposal ideas. She is always available to answer any questions relating to academics or any administrative issues. Without Dr. Morsi's assistance, I can definitely say that I would have had a difficult time adjusting as a professor here at NSU. Her mentorship has been a great benefit to me ..."

Dr. Aliecia McClain, Associate Professor, Chemistry (Colleague-NSU)

"I have been a colleague and friend of Dr. Rasha Morsi for 4 years, and I have found her to be tireless in her efforts to advance her area of research and to educate students. As an educator, she strives to perfect her classes, in the quality of the material and its presentation, and in the quality and amount of real learning that takes place. As a research advisor, she pushes her students to do the absolute best work they are capable of doing, and she constantly searches out opportunities for her students to enhance their knowledge, self-confidence, and preparation for their futures in further education, research or in industry…"

Dr. Mona Rizvi, Assistant Professor, Computer Science (Colleague-NSU)

"[Dr. Morsi] is an exceptional candidate for this recognition…I have worked closely with Dr. Morsi … on a special project called $ave $teve, a *Smart Investing@Your Library*® program,

funded by the Financial Regulatory Agency (FINRA) and the American Library Association (ALA). From the first meeting where we discussed ideas for the project, Dr. Morsi passionately embraced this collaborative effort with the library designed to offer basic financial education to the public in a fun way… She continually demonstrates her professional expertise and enthusiasm for the project by expanding and enhancing the original proposal. Her creativity and technical knowledge are impressive; … I also want to note how pleasant it is to work with Dr. Morsi. She is very open to new ideas, she keeps me fully updated on the progress of the project, and she manages the grant funds accurately and with integrity. This is particularly important to me when reporting our progress to FINRA and ALA. In summary, Dr. Morsi is an accomplished professional, a consummate leader, and a sterling ambassador for Norfolk State University. She is truly deserving of the SCHEV Outstanding Faculty Award."

Ms. Phyllis Shirley, $ave $teve Project Coordinator, Chesapeake Public Library (Current funding agency)

"… To this date, I have yet to meet a finer educator than Dr. Morsi. I could use this letter to retell countless stories about Dr. Morsi's teaching excellence. During my sophomore year, she was a refreshing positive instructor… During my senior-level classes, Dr. Morsi provided me every opportunity to exploit my engineering talents. However, it is Dr. Morsi's role as an advisor and mentor that I treasure most… Not many undergraduates can say they have published a paper, but thanks to Dr. Morsi, I could. Dr. Morsi is a fine professor and a fine mentor. I have seen her do so much for her students, and I have no doubt that she will continue to do as much. It brings me much joy to actually do something nice for her for a change. "

Joseph Shaw, Computer Engineer, Chief Technology Office Defense Information Systems Agency (Former student-ODU)

"I've had the honor of working with Dr. Rasha Morsi in and outside of the classroom, considering her not only a professor and mentor, but also, a friend… Her aptitude and problem-solving expertise are routinely exhibited through her interaction with faculty and students. Professionally, she has an uncanny ability to create a casual friendship with her students, while maintaining the understood professor-student and/or employer-employee relationship. As a teacher, Dr. Morsi has consistently gone the extra *miles* to ensure that every student understands the subject matter. Her dedication was further demonstrated by virtually on-the-spot office hours, which occasionally developed into group study sessions. As a Research advisor, Dr. Morsi is second to none. .. "

Edward D. Jackson, Missile Defense Agency (Former graduate student-NSU)

"[Dr. Morsi] would always go above and beyond the call of duty as a professor and stress her concerns for her students' progress in her class. She would do whatever it took to make sure that we understood the material in her class. She gave us a chance to grasp the material and was lenient when she noticed we were having trouble."

Maegan Wilhite, MS Electronics Engineering (Former Student-NSU)

"I cannot leave Norfolk State University without letting you know that you are one of the few inspirational people here. When I say inspirational I don't mean just to me but you influence and motivate the campus, through many things that you may or may not know. I have learned so much from you ". "Personally, I do not believe this recommendation can accurately portray all that Dr. Morsi represents. Her passion, confidence, enthusiasm, and dedication to her work, her students and her field are so immensely vast that a short thesis couldn't even sum up everything! …I have had the honor and pleasure of not only being her student, but advisee and mentee. In every case, she has shown a remarkable ability to lead each position with great strength, compassion and zeal. As an educator, I must say, in my time as a graduate student

she is by far the most interesting professor. Her style and method of teaching captures the essence of the subject; never allowing an opportunity to slip by without relating the subject matter to a real life application. …. As an advisor, you can readily see the passion she has for her research ... She is able instill in you a motivation that you couldn't see yourself. "

Erica L. Veal, MS. in Optical Engineering and
Graduate Student, Computer Science, NSU (Former MS student)

"She has been a great source of inspiration for me … She is one of the most dedicated hardworking and intellectual persons I have worked with. Her articulate ways of describing ideas and concepts have always amazed me. She has been very friendly and helpful to all the graduate and undergraduate students who work with her… she has always been a great support academically and personally. Dr. Morsi as an advisor, professor and a friend has made a great positive influence in my personality in several ways. "

Meenakshi Lakshmanan, IT Analyst (Former MS Student-NSU)

"Throughout my time interacting with Dr. Morsi I have observed many qualities that separate her from others. .. Over the past years I have personally observed some of Dr. Morsi's interactions with her students and no student has ever walked away from her feeling that they got anything but Dr. Morsi's best effort. I believe her presence in the engineering department at Norfolk State University drastically improves the learning environment for undergraduate as well as graduate students. Dr. Morsi constantly goes out of her way to hold workshops, presentations and activities to help K – 12 students realize that college can be in their future and education is fundamentally important to their future….Dr. Morsi has shown a desire to not be content with the wealth of knowledge she currently possesses, but to continually challenge herself to learn more. Students observe this behavior and challenge themselves to work harder with the same determination that Dr. Morsi shows. ... I myself have improved not only my work ethic but my writing and presentation skills by observing and interacting with Dr. Morsi."

Mr. Terin Reed, Siemens (Former MS student-NSU)

"Rasha was a wonderful asset to our organization. ….Rasha has offered her expertise with Sense Resource Center, a Non-Profit humanitarian company…. Rasha has also helped in my establishment of Dysfunction Junction, Inc. (DFJ). … Rasha is extremely intelligent and provides a wealth of knowledge on many subjects. She is thoughtful and kind and always willing to lend a hand. …She has been inspirational to many women in the area. ….."

Sharon Liddle, CEO, Dysfunction Junction

"Dr. Morsi has demonstrated a wide range of student management skills and advisory ability while building a record of outstanding performance in this role. Dr. Morsi's diligence, great tolerance in listening to student's problems, and unwavering commitment to helping her students enable her to achieve this success."

Mrs. Susan Zehra (current graduate advisee)

"I have found [Dr. Morsi] to be pleasant and generous person and who is never reluctant to take on a challenging task. … one of the most dedicated advisors I have had the privilege to work under. She is reliable, and a very approachable and flexible person and willing to assist us in any mater that is presented to her…. She has an excellent capability to connect students, guide in the right direction and motivate them which are truly superior. She advises students with great initiative and with a very positive attitude. I feel very comfortable to have her as my advisor and feel that she has become a friend whom we can always rely on for the best advice and guidance that she has to offer."

Mr. Moin Rahman (current graduate advisee)

ADDITIONAL DOCUMENTATION

NORFOLK STATE UNIVERSITY

Office of the Provost
700 Park Avenue, H. B. Wilson Hall, Suite 460, Norfolk, Virginia 23504
Tel: (757) 823-8408 Fax: (757) 823-9435
Web: http://www.nsu.edu

September 30, 2011
Selection Panel, SCHEV Outstanding Faculty Awards
State Council of Higher Education for Virginia
9th Floor, James Monroe Building
Richmond, Virginia 23219

Dear Selection Panel:

It is my distinct pleasure to recommend Dr. Rasha Morsi for the SCHEV Outstanding Faculty Award – Teaching with Technology. I have known Dr. Morsi since she joined the Norfolk State University (NSU) faculty in 2003 and have served as her supervisor and mentor.

Dr. Morsi is an outstanding teacher who is held in high regard by her students. She is quite innovative in her teaching strategies and has an honest interest in her student's success. A testament to her talent in the classroom is the high student evaluation scores she consistently earns. Dr. Morsi has been quite successful in the scholarship arena as well. She has secured almost $5.3 M in research grants during her tenure at NSU and supports several graduate students.

Dr. Morsi's research in Modeling, Simulation, Visualization, and Training Technologies (MSV&TT) applies directly to her teaching. She designs and develops interactive simulation and game-based applications for the PC, mobile devices, and off-the-shelf game consoles that are a "niche over other's working in interactive simulation and game design and development." Her most recent Department of Defense funded project is to develop a 3D Virtual Nurse training tool (VNurse) which promises to be a breakthrough in nurse education and training. Her use of the advanced Motion Capture technology in her development of the VNurse animations allows the user (practitioner, student, or teacher) to be engaged in the learning environment which enhances the teaching and learning experience.

Dr. Morsi has been equally effective in her service to NSU. She leads a number of Science and Technology committees as well and is an active member of many more. She founded the GISET (Girls in Science Engineering and Technology) Club to promote the interest of girls in science and engineering disciplines. Despite her busy schedule, she always finds the time to support, attend, and participate in all College and University activities. It was her commitment, enthusiasm, and hard work that won her the 2005 School of Science and Technology's Contributor of the Year Award and the 2006 Teacher of the Year award. Her stellar contributions in teaching, service, and research netted her the 2007 Norfolk State University Distinguished Faculty Award as well as the YWCA's Women of Distinction Award for Science and Technology in 2009.

Dr. Morsi's distinguished accomplishments at NSU earned her tenure in record time. Given her exceptional performance, she is an ideal applicant for SCHEV Teaching with Technology Award and I am happy to offer my enthusiastic endorsement of her candidacy.

Sincerely,

Sandra J. DeLoatch,
Interim Provost and Vice president of Academic Affairs


Dr. Morsi with her research graduate students and postdocs (left) and presenting CGS research to attendees at the 2010 MODSIM world conference in Hampton Virginia (right) where she hosts a yearly booth.


Dr. Morsi's Engineering Club at Oakland Elementary in Suffolk, VA where she taught 4th and 5th graders how to use proto-boards and build and test electronics circuits (a car siren circuit)


ELECTRICAL ENGINEERING

A Teacher's Tenacity

RASHA MORSI


10 | Monday, February 18, 2008 INSIDE BUSINESS Special Report

Gaining through gaming

This NSU classroom has a 3-D TV, a Sony PlayStation and a Nintendo Wii

BY MICHAEL SCHWARTZ

michael.schwartz@insidebiz.com

Rasha Morsi's goal is to develop gaming technology that teaches and assesses performance.

Articles in newspapers and magazines applauding Dr. Morsi's work: Diverse Education, January 2008 issue (left) and Inside Business, March 19th 2008 (right)

YWCA Women of Distinction, 2009

Dr. Morsi explaining to high school STEM teachers how to use curriculum based Modeling and Simulation techniques to enhance the classroom experience (2008).

Dr. Morsi's workshop for college faculty teaching them wireless technology and game development (2008).

Dr. Morsi conducting a workshop for the Girl Scouts of Colonial Coast and teaching Girl Scouts how to develop games (2009).

Dr. Morsi sponsor's the JETS – TEAMS competition yearly at CGS. She presents the top 3 teams with trophies (2009).

Dr. Morsi helping 4th-8th graders learn how to develop games at a local library (2008).

Dr. Morsi organized a Wireless Technology Workshop for 30 professionals from local industries and government research entities in 2007.

Excerpts continued:

"For the past four years, I have closely worked with Dr. Morsi as an external evaluator on the grants and projects she has secured as the Director of Gaming and Simulation at NSU. During that time, I have found her to be professional, collegial, respectful, committed, and an extremely hard worker. Dr. Morsi exemplifies these characteristics both with her colleagues and with her students (graduate and undergraduate) … What I find most striking about Dr. Morsi is her commitment to producing the next generation of underrepresented minority STEM professionals for the Commonwealth of Virginia and the United States. She has worked endlessly with graduate students by mentoring them, allowing them the autonomy to discover their solutions while guiding them with in depth inquiry, and rewarding them for their accomplishments…"

Gwendolyn Lee-Thomas, CEO/Owner, Quality Measures, LLC (Colleague)

".. Dr. Morsi is an outstanding instructor…. Dr. Morsi has an amazing relationship with her students. She is a nice professor to get along with and always thinks for her students. Dr. Morsi established a wonderful lab for her students and tries to better the comfortable environment. Our students regard Dr. Morsi as a good friend and share our opinions on everything, not just on study and research. Studying at CGS, I feel I am like a member of this family."

Changlong Zhu, MS. in Electronics Engineering and
Graduate Student, Computer Science, NSU (current student)

---

*"*I have been working very closely with Dr. Morsi for three months on the VNurse research project. In this short period, Dr. Morsi provides me with outstanding mentorship in the disciplines of: planning, reporting, and organization of projects and events. She is an exceptional communicator who possesses the gift for making complex subjects understandable to her audience. Dr. Morsi is a highly dedicated professional who knows how to motivate her students to strive for excellence. She is approachable and loves to share her extensive knowledge with others, her students and colleagues in particular. She consistently assists me at every opportunity while I start teaching in the Department of Engineering at Norfolk State University. In my opinion, Dr. Morsi is the perfect model for a higher education professional. In many areas, she has taught and encouraged me to meet challenges that I had never before thought possible. I therefore enthusiastically recommend that Dr. Morsi to you for the SCHEV outstanding faculty award."

Dr. Jun Wang, Research Assistant Professor-CGS (Current employee)

"In these seven months I have known Dr. Rasha Morsi I have been impressed with her dedication to the job and the team at Creative Gaming and Simulation Lab. Dr. Morsi is organized, efficient, and extremely competent. She has an outstanding relationship with people of all ages and all ethnic backgrounds. Dr. Morsi has demonstrated time and time again a generous nature towards all her employees and students alike. In summary, I highly recommend Dr.Morsi for any award or venture that she may pursue. She is a perfect role model to any individual, young or old."

Mr. Bratislav Cvijetic, Research Associate-CGS (Current employee)

"Not only is Dr. Morsi a magnificent teacher and a graduate coordinator, she is an excellent research advisor…Instead of her talking at me and dictating my research topic, we discussed ideas together… She advised and brought forth ideas that would better suit me and be comfortable doing…Dr. Morsi is fiercely intelligent and a diligent advisor… Dr. Morsi is a trustworthy advisor that enjoys and respect other professors and students which makes it a lot easier to discuss problems that occur in classes, or in life."

Ms. Toria Duke (Current thesis student)