Department: COMPUTER SCIENCE

Unit Goals for 2012 and Accomplishments

1.   We hired a new Assistant Professor, Dr. Timothy Roden, specialist in game design and development. The department made a purchase order for 16 computer stations operation Microsoft Office, Eclipse, Adobe Creative Suite, Lightwave 3D, Notepad++, PuTTY, SnagIt, Timeline FX. This goal was proposed in late 2011 and accomplished in 2012 under the leadership of Dr. Lawrence Osborne.

2.   Adopted 4 courses in game development in 2013 in preparation for adding a Game Development concentration in 2014. These have proposed by Dr. Timothy Roden, and the Faculty approved them.

3.   Continuing the yearly assessment and preparing the 6-year self-study for the ABET accreditation. All Faculty continued this goal.

1.   Compare enrollment (SCH + Student FTE) data for the past three (3) years. Comment on trended data and actions taken this year.

		Fall 2010		Fall 2011		Fall 2012	
		Female	Male	Female	Male	Female	Male
CIS	White	3	8	3	10	3	16
	Black	4	6	4	4	2	5
	Hispanic	0	0	0	0	0	1
	Asian	0	4	0	2	0	2
	American-Indian	0	0	0	0	0	0
	Multiracial	0	0	0	0	1	0
	Intl	0	0	0	0	0	0
	Unknown	0	0	1	0	0	1
	TOTAL	7	18	8	16	6	25
CS	White	3	55	4	65	7	80
	Black	8	17	8	26	7	19
	Hispanic	1	4	1	5	1	10
	Asian	0	4	0	2	4	4
	American-Indian	0	2	0	1	0	1
	Multiracial	0	0	1	0	0	0
	Intl	0	0	0	1	1	2
	Unknown	1	2	1	1	0	2
	TOTAL	13	84	15	101	20	118

MCS	White	0	1	0	1	0	3
	Black	0	1	0	0	0	0
	Hispanic	0	0	0	0	0	0
	Asian	0	4	0	1	1	3
	American-Indian	0	0	0	0	0	0
	Multiracial	0	0	0	5	0	0
	Intl	6	32	5	23	6	24
	Unknown	0	0	1	2	0	0
	TOTAL	6	38	6	32	7	30

	Fall 2010	Fall 2011	Fall 2012
CIS	319	283	390
CS	1236	1430	1665
MCS	383	311	318

Undergraduate major enrollment has increased from 122 in 2010 to 140 in 2011 (hence, an increase of 15%) and 169 in 2012 (hence, an increase of 21%) for an overall increase of 36% over three years. With respect to SCH from 2010 to 2011 the number from undergraduate credit hours increased from 1555 to 1713 for a 10% increase and from 2011 to 2012 the number from undergraduate credit hours increased from 1713 to 2055 for a 20% increase. These are very good numbers, which show a steady growth in enrollment especially in 2012.

Enrollment in the MCS program went from 44 in 2010 to 38 in 2011 and to 37 in 2012 for a decrease of 14% and 2%, respectively. The SCH dropped from 383 in 2010 to 311 in 2011 and 318 in 2012 which is down 19% for 2011, but it is back up by 2% in 2012. We hope it will grow back to 'good old times' when the figure was acceptable to the department. According to the new 8-5-3 THECB requirements, we need at least 25 graduates every five years. The reasons they come to Lamar are usually based on country, cost, resources and housing available on campus, and, perhaps most important, the reputation of the school and program. Our graduates appear to be very satisfied according to the results of anonymous exit surveys and testimonials from graduates who have found employment. Hopefully, the U.S. will continue to grant visas to high potential students to study in this country and more areas will become familiar with Lamar due to active recruitment. We learned that the Graduate Studies website for students has been improved. Our department is also looking into ways of improving advisement and the curriculum for the final project as ways to retain graduate students.

2.   Examine unit's ability to contribute to teaching, research, and service missions of the organization.

        The CS faculty is competitive with the faculties of similar institutions in teaching, research and service. We hired a new Assistant Professor, expert in game design and development. Our faculty continue to publish in prestigious international journals and conference proceedings and to be awarded NSF grants. We have a very active faculty in teaching and service as well with several members either in faculty senate or previously

holding leadership positions in faculty senate. As long as our numbers of students remain stable, we should continue to perform strongly.

3.   Compare graduation rates for past three (3) years, what do these numbers/trends mean and what do you need to change or improve?

				FY10	FY11	FY12	Three Year Total
11010100	2	BS	COMPUTER SCIENCE	9	4	10	23
11010100	2	BSCIS	COMPUTER INFORMATION SCIENCES	9	4	10	23
11070100	3	MSCS	COMPUTER SCIENCE	23	13	14	50

Both BS and BSCIS degrees are treated as one program by the the Texas Higher Education Coordinating Board standpoint (that is, the both their CIP codes are identical with 11010100). For the past three years, our undergraduate total is 23, while the graduate total is 50. We think that these numbers improved because enrollment is gradually rising anyway after several years of decreases following the crash of the dotcom companies in 2001. We think that adding a new specialization in game programming and graphics will improve our undergraduate enrollment.

4.   Institutional Effectiveness Plans—Summarize how your unit is doing in setting, evaluating and using data to make revise, maintain, add or eliminate topics or courses.

Each year, our department does an assessment report which is based on the ABET accreditation process. The reports are at http://cs.lamar.edu/abet/abethome.htm. We document our Educational Objectives, Student Outcomes, Performance Criteria, Targets, and faculty responsible for various aspects of the assessment. We take the data collected and analyze it. The data are both direct and indirect, qualitative and quantitative. We then document what actions we are going to take and for what reasons in order to improve the program. Our efforts at continuous improvement include closing the loop and monitoring the results of our improvements to see whether they have been effective. Each year the entire faculty meets several times in the fall to consider the results of the previous academic year and to approve recommendations from the Assessment Committee and the Curriculum Committees. Periodically members of the department attend workshops and symposiums hosted by ABET to update programs on the latest changes in the ABET process of accreditation. The next visit from the ABET organization will be in October 20-22, 2013.

As part of the process, we look not only at curriculum, but also at other matters including student satisfaction with advisement, scheduling, instruction in teamwork and leadership, opportunities for independent study, participation in student organizations, and knowledge of the impact of computing on the well-being of the environment and global society.

Student Workers

1.   Number employed and how utilized

There were 47 students hired between January 1 and December 31 in 2011. These students were mainly used as graders and teaching assistants, but there were nine that worked as network technicians, two that were webmasters, and three that were office assistants.

2.   Total costs/semester and year

Total Cost for Spring 2012: $38,579.00
Total Cost for Summer 2012: $ 8,926.00
Total Cost of Fall 2012: $22,700.00
2012 Total: $70,205.00

Faculty Productivity Measures
1.   Publications

__1__ # of Manuscripts submitted not yet published
__24__ # of Manuscripts published

__23__ Refereed
__1__ Non-refereed

__1__ # Books published (book chapters)

2.   Professional Presentations

__1__ Local presentations
__1__ State / Regional
__2__ National
__13__ International
__17__ TOTAL #

3.   Research Grants (# and amount)

_____ Internally Funded – Lamar University of TSUS

Grant Title	Amount
Research Enhancement Grant, Lamar University - Title – Efficacy of Data Serialization Formatting Methods for Mobile Environment, *May 2012*, PI is Dr. Kami Makki	$5,000

_____ State Funded

Grant Title	Amount
Total	

_____ National Funded

Grant Title	Amount
2012 - 2017: co-PI of the National Science Foundation Grant "*Addressing the Gulf Coast Region's Graduation Rate Crisis in Mathematics and Computer Science*", Award No. DUE-1154606, PI is Dr. Kumer Das, co-PIs: D. Lawrence Osborne, Dr. Daniel Dale, Dr. Stefan Andrei	$583,096
2012 – 2013: Academic Partnership Grant #CS5014 "Building an Online Computer Science Course with Embedded Signing Avatars for Deaf and Hard of Hearing Students.", PI is Dr. Stefan Andrei	$3000
Sept. 2009 – present: $400,000 from National Science Foundation (NSF), "CAREER: An Effective Integration of Research and Education on High-Speed and Energy-Efficient Interconnects for Multi-Core and Multi-Thread Systems," PI is Dr. Jane Liu	$400,000
September 9, 2010 - December 31, 2013: Principal Investigator on Students Advancing through Involvement in Research Science Talent Expansion Program (STAIRSTEP) grant from the National Science Foundation; additional support of award, PI is Dr. Peggy Doerschuk	$199,270
1/1/2009 – 12/31/2012: "Students Advancing through Involvement in Research Student Talent Expansion Program (STAIRSTEP),". PI is Dr. Peggy Doerschuk, Co-PIs C. Bahrim, J. Daniel, J. Kruger, J. Mann, C. Martin	$800,534
2011-2013: National Science Foundation's research project "Computer Algebra Research Student Support for the 17th International Conference on Applications of Computer Algebra (ACA 2011)" (NSF-1115922). PI is Dr. Quoc-Nam Tran	$7,000
2009-2013: National Science Foundation's research project "Efficient Groebner Bases Computation in Boolean Rings for Temporal Logic Reasoning and Model Checking" (NSF-0917257). PI is Dr. Quoc-Nam Tran	$221,000
Total	$2,213,900

4.   Teaching/Program Grants (# and amount)

_____ Internally Funded – Lamar University or TSUS

Grant Title	Amount

_____ State Funded

Grant Title	Amount
Total	

_____ Nationally Funded

Grant Title	Amount

5.   Faculty holding office in national/international professional organization - **Only**

Faculty	Organization	Office
Stefan Andrei	The *2012 IEEE/ACM International Conference on Green Computing and Communications (GreenCom 2012)*, http://greencom.univ-fcomte.fr/, November 20-23, 2012, Besancon, France;	Member of the Program Committee
Stefan Andrei	The *9th International Conference on Informatics in Control, Automation and Robotics (ICINCO)*, http://www.icinco.org/, July 28 - 31, 2012, Meliá Roma Aurelia Antica, Rome, Italy	Member of the Program Committee
Stefan Andrei	The *14th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC 2012)*, http://synasc12.info.uvt.ro, IEEE Computer Society, September 25-28, 2012, Timisoara, Romania;	Member of the Program Committee
Stefan Andrei	The *2012 IEEE International Conference on Embedded Software and Systems (ICESS-2012)*, http://www.scim.brad.ac.uk/~hmibrahi/ICESS2012/, Liverpool, England, UK, 25-27 June 2012	Member of the Program Committee
Stefan Andrei	*Broad Research in Artificial Intelligence and Neuroscience*, Volume 3, Issue 2, May 2012, ISSN 2067-3957 (online), ISSN 2068 - 0473 (print), **www.brain.broadresearch.org**	Member of the Editorial Board of BRAIN
Kami Makki	International Conference on Computing, Networking and Communications, (ICNC 2012), Maui, Hawaii, USA, January 30 - February 2, 2012.	Co-Chair
Kami Makki	International Conference on Enterprise Information Systems (ICEIS 2012), June 28 – July 1, Wroclaw, Poland, 2012.	Technical Program Committee Member
Kami Makki	The Fourth International Workshop on Wireless Network Algorithm and Theory (WiNA 2012), September 4-7, Fukuoka, Japan, 2012.	Technical Program Committee Member
Kami Makki	International Conference on Data Communication Networking (DCNET 2012), 24-27 July, Rome, Italy, 2012.	Technical Program Committee Member
Kami Makki	International Conference on Wireless Information Networks and Systems (WINSYS 2012), 24-27 July, Rome, Italy, 2012.	Technical Program Committee Member
Kami Makki	SCS/IEEE Symposium on Performance and Evaluation of Computer and Telecommunications Systems (SPECTS 2012), July 8-11, Genoa, Italy, 2012.	Technical Program Committee Member
Kami Makki	International Conference on Computer, Information and Telecommunication Systems CITS 2012, Maui, Hawaii, USA, January 30 - February 2, 2012.	Technical Program Committee Member
Kami Makki	The IADIS International Conference Theory and Practice in Modern Computing, 17-19 July, Lisbon, Portugal, 2012.	Technical Program Committee Member
Timothy Roden	Journal of Graphics Tools (JGT).	Associate Editor
Timothy Roden	International Journal of Computer Game	Associate Editor

	Development and Education (IJCGDE).	
Bo Sun	International Journal of Sensor Networks, Sept. 2010 - Present	Associate Editor

6.   Faculty Honors

Faculty	Honors

7.   Student Honors and Accomplishments

Does your Department have a Mirabeau Scholar? Yes   No

Yes, we have the same 2011 awarded Mirabeau Scholars: Kaitlyn Hinch and Brenden Smith. There were no new Mirabeau Scholars for 2012. However, we have four new Mirabeau Scholars for 2013: Cameron Henry, Christopher LaChance, Shane Granger, and Timothy Gonzales. The next Annual Report will describe their status. It is first time when the Department of Computer Science has so many Mirabeau Scholars awarded in a year.

If yes, please state their involvement and progress to date.

Student	Honors/Accomplishments
Kaitlyn Hinch	GPA = 3.871 (Dean's List)
Brenden Smith	GPA = 4.0 (President's and Dean's Lists)

8.   Development activities undertaken by you or faculty in your area.

Most of the Department of Computer Science Faculty are involved in research, publishing papers and writing grants. All of the Department of Computer Science Faculty are involved in teaching, improving their courses and revising their online courses. All Faculty submitted their assessment materials, necessary for the ABET accreditation. In addition, Faculty uploaded their assessment results in the online website designed by Dr. Lawrence Osborne in 2008. All Faculty reviewed publications including journals, books, and conferences.

9.   HEAF summary (goals accomplished, dollars spent and major goal for next year)

HEAF Goals Accomplished	Dollars Spent
30 OptiPlex 9010 Minitower w/Standard PSU, Windows 8 Professional, 64-bit	30 x $1,257 = $37,710.00
new cabling and new switch for instructional labs 208, 212, and 214	N/A (LU money)
Total	

Major HEAF goals for next year:

1. Renovation of Commons Area in Maes 202 (paid by Lamar University);

2. We also need additional memory for our server rack in Maes 208. Dell PowerEdge R620 Rack for Servers, RAID 1, $44,870.00 Intel Xeon 2.5 GHx, 15 M Cache, 7.2T/s QPI, DIMM; Blanks for Systems with 2 Processors. Mission Critical, Package: 4-Hour 7 x 24 On-Site Service, 4 Year Extended. This item is mission critical for us. We have a server rack that has six of our department's servers. Unfortunately, it is five years old, and during 2011-2012 it crashed. When this happens all of our servers for the department go down and no one can access any of our networked computers. Fortunately, only a couple of weeks earlier we had reluctantly renewed our service agreement. However, the rack is a product of Sun Microsystems which no longer exists, and we need a reliable rack with sufficient storage for the department to continue to operate during the next few years. Hence, we want to purchase a Dell server rack with 24 TB of storage with a 4 year extended service warranty.

3. 12 HEWLETT PACKARD : HP Z1 All-in-One Linux Workstation $1,718 x 12 = $20,616.00. The detailed description is Nvidia Quadro 500M 1 GB Graphics Card, 8GB DDR3; Unbuffered RAM. Last year we replaced 8 or the 20 machines in that room, which is our only Linux lab and, therefore, of great importance for many of our classes that our majors take. We chose the HP workstations rather than Dell, because HP is configured naturally to use Linux unlike Dell which normally runs Windows. In addition, these workstations include high quality monitors as part of the computer itself. No additional money is needed for monitors. Maes 208 is used for instruction, student homework assignments, and, for research projects such as summer REUs.

4. We want to create a faculty lounge for the computer science department.

Major goals for course fee monies for this year:

Goal Accomplished	Dollars Spent
Licenses for Matlab and related software	$1750
Dell portable hard drive	$500
Oracle software updates and licenses	$3280
Microsoft Subscription	$1200
Hernandez Office Supplies	$851.16

Total:	$7581.16

10.   Evaluation of accomplishments of your unit this year.

We have hired Dr. Timothy Roden in fall 2012, an Assistant Professor with research and instructional experience in the area of computer graphics and computer gaming, areas in which we were previously weak. The undergraduate program will most likely continue to grow as a consequence.

Our new Senior Administrative Associate, Mrs. Denise Rode, has brought order and organization to our department Office. She is recognized already for her ability to interact with all types of people and to use technology to improve the efficiency of our operations. The entire faculty appreciates the improvement in all procedures.

The ABET report has been done and submitted to the ABET Headquarters and the ABET team members. Dr. Timothy Roden coordinated the Assessment activities and the writing of the self-study report and supplementary appendix.

Our faculty is looking carefully at our graduate program to ensure the quality of the curriculum and advisement.

The CUDA Teaching Lab is now in room 212B. The space and equipment is ready to be used for students.

11.   Report of centers in your department (*goals accomplished, problems, and major goals for next year*).

Research Labs in Computer Science Department served as both research and teaching areas for many students. The research labs are as follows:
Maes 105-107: Bioinformatics (Dr. Tran);
Maes 104-106: Computer Architecture (Dr. Liu);
Maes 201: Robotics and Outreach (Dr. Doerschuk);
Maes 208: Database Design (Dr. Makki);
Maes 209: Wireless Sensor Networks (Dr. Sun);
Maes 209 B: Real-time Systems (Dr. Andrei);
Maes 95: Game Design and Development (Dr. Roden).

These labs enable their directors to complete the requirements of grant proposals. Among the problems are keeping the equipment up-to-date since in most cases, no money was placed in the grant nor promised by an entity at Lamar for sustaining the activities begun by the grant. Our goals are simply to continue to advance the state of computing through dedicated research.

In addition to research labs, we designated room 97 for the ABET Assessment to be used by our Faculty to keep records of assessments, and to conduct the analysis of the assessment.

12.   Report of activities/accomplishments of Endowed Chairs in your department.

N.A.

13.   Report any initiatives under taken this year by your unit.

The CS department participated in the renovation of the second floor of Maes during 2012.

14.   Identify special projects or initiative you plan for next year.

1.   Renovate instructional lab in Room 216 so that it is divided into 2 labs (Game Design and Development and Computer Architecture), one of which will have 16 computers and the other 14.
2.   Renovate Maes 202 (Commons Area)
3.   Create a faculty lounge. Currently, CS does not have one. We are using part of a custodian's storage room for mailboxes and a microwave, but it is not appropriate to serve as a lounge due mainly to space.

15.   Any **BRAG** points not identified in the above.

None that we are aware of.