SELF-EVALUATION FORM

NAME: Shereen Khoja EVALUATION YEAR: 2007 - 2010

DEPARTMENT: Mathematics and Computer Science

Part One: Teaching and Advising

A. Teaching

2007-2008

Fall Semester

	Course Number	Title of Course	Credits	Workload Credits	Number of Students
1	CS150	Intro to CS I	4	4	24
2	CS490	Senior Capstone I	3	3	6
3					
4					
5					
6					

Winter III

	Course Number	Title of Course	Credits	Workload Credits	Number of Students
1					

Spring Semester

	Course Number	Title of Course	Credits	Workload Credits	Number of Students
1	CS315	Human Computer Interaction	3	3	16
2	CS380	Algorithm Design & Analysis	3	3	10
3	CS492	Senior Capstone II	3	3	6
4					
5					
6					

Workload Credit Summary:
Total teaching credits: 16
Did you earn workload credits for other activities? ___ NO X YES (No. of credits: 5)
If yes, please describe these activities, and please outline how you balance required credits over time:

This year I had received a Berglund Fellowship Award and bought out 4 credits to work on that project. The fellowship paid for the release time.

I had one credit that was owed to me from 06-07.

Please describe other responsibilities that contribute to your workload and that you would like to bring to the attention of FDPC:

Total Workload Credits (Teaching + Other): 21

2008-2009

Fall Semester

	Course Number	Title of Course	Credits	Workload Credits	Number of Students
1	CS150	Intro to CS I	4	4	20
2	CS300	Data Structures	3	3	12
3	CS430	Computer Architecture	4	4	6
4					
5					
6					

Winter III

	Course Number	Title of Course	Credits	Workload Credits	Number of Students
1					

Spring Semester

	Course Number	Title of Course	Credits	Workload Credits	Number of Students
1	CS250	Intro to CS II	3	3	25
2	CS380	Algorithm Design and Analysis	3	3	10
3					
4					
5					
6					

Workload Credit Summary:
Total teaching credits: 17
Did you earn workload credits for other activities? ___ NO X YES (No. of credits: 3)
If yes, please describe these activities, and please outline how you balance required credits over time:

I received 3 credits for department chair duties.

I received 1 credit for system administration. The three CS faculty members receive workload credit release time to administer the 15 dual-boot (Windows XP and OpenSUSE) computers in the lab and the six servers used for student accounts and storage, backup, faculty repository, web hosting, Unix account administration, etc. In the summer of 2007, the faculty rebuilt the CS lab. This involved putting all of the computer parts together for the 15 lab machines and installing both operating systems and all of the software. This is a time consuming but necessary part of the CS program, and we appreciate the release time we receive.

Please describe other responsibilities that contribute to your workload and that you would like to bring to the attention of FDPC:

Total Workload Credits (Teaching + Other): 21

Materials Used to Evaluate Excellence in Teaching.

Key requirements for excellence in teaching (as described in the Handbook) are listed in the chart below, along with the materials used to evaluate each aspect of performance. Note that some of the resources that could be used for evaluation will remain in possession of the faculty member, available to the FDPC upon request.

Please include with your self-evaluation syllabi for all courses taught during the period under evaluation. The FDPC also asks that you maintain, for courses taught during the past three years, representative examples of handouts, assignments, and texts.

Requirement	**Location of materials**	
	FDPC	**Faculty**
A concern for the students' total learning experience	Course Syllabi Course Evaluations Self Evaluation Dept / Div Chair Eval.	Examples of course materials.
Accessibility to students for providing advice, counsel, and other professorial services.	Course Syllabi Course Evaluations Self Evaluation Dept / Div Chair Eval.	
Communication of expectations, objectives, and organization to students.	Course Syllabi Course Evaluations Self Evaluation Dept / Div Chair Eval.	Examples of course materials
Maintenance of high academic standards.	Course Syllabi Course Evaluations Self Evaluation Dept / Div Chair Eval. Grades	Examples of course materials.
Serves as a role model for students by showing respect for people and exhibiting a love of knowledge and discipline, excitement for learning, and high academic standards.	Course Evaluations Self Evaluation Dept / Div Chair Eval.	
Reasonable flexibility in responding to student needs.	Course Evaluations Self Evaluation Dept / Div Chair Eval.	

Discussion of Teaching Effectiveness. Please discuss your teaching this year. What challenges did you face? What successes did you have? What changes do you anticipate making in the future? Please summarize your interpretation of your student course evaluations. Also, please respond to any concerns regarding teaching that were raised in your last FDPC evaluation letter.

I got my first taste of teaching when I was Ph.D. student at Lancaster University and I immediately knew what I wanted for my career. I am pleased to say that I still have the passion for teaching, and enjoy working with undergraduate students. I still get that buzz when I walk into the classroom, and some days, the class is so perfect, the interactions are almost electric, and I know that I am doing the right thing in my life.

As a teacher I am disciplined, organized, well prepared, consistent, fair, and fun. However, I am not an easy teacher and expect my students to work hard to earn their grades. My goal as a teacher is not just to impart new knowledge onto the students, but also to instill in them a love of learning and provide them with the tools to seek out knowledge for themselves. It is also important for me to prepare the students for the workplace by talking to them about professionalism, expecting them to act professionally in the classroom (i.e. respect everyone around them, arrive on time), and hopefully being a good role model for professional behavior.

One of the ways that I continue to grow as a teacher is through my interactions with my colleagues in computer science. Doug, Chadd, and I discuss our courses throughout the semester, visit each other's classes, and talk about pedagogical issues all the time. We place all of our course materials on a private, secure server, and this was useful to me in the fall of 2008 when Doug was on sabbatical and I taught CS300 Data Structures and CS430 Computer Architecture, which Doug had taught in previous years. I was able to see what he had done and adapt it to my needs. Doug, Chadd and I work well together, and I am indeed lucky to have them both as colleagues.

With regards to my student evaluations, the students find me fun but deceptively challenging. While it is not my intention to be deceptive, it is my intention to be challenging as students learn best when challenged. Students also comment that I am available when they need me and helpful. This is important to me as that is the value of a private education and is an integral part of the culture here at Pacific. Finally, some students commented that they could see the value in the material that is covered. This is insightful from the students and doesn't always happen. It is usually two or three years after the students graduate when they realize and appreciate the topics that were covered.

My biggest success has been in developing and fine-tuning the CS380 Algorithms course. This course was added to the CS program and taught for the first time in 2006. I have taught this course three times, and the last time I taught it was the most successful. It is finally at the right level for a sophomore/junior level course with a good combination of theory (including proofs) and practical examples of algorithms.

B. Advising: Please provide information on your advising activities.

In addition to my regular advising activities, I participated on the on-campus advising session for two summers, and I was a faculty advisor in Hawaii in 2007.

Part Two: University Service

Please discuss your participation in University activities, committees, administrative duties, professional service to the community, other than those for which you received workload credit. Please include descriptions of any community service outside the University.
(For term contract faculty, substantial university service is not required for contract renewal, though it is required for promotion.)

Here is a list of my service activities.

- I was the chair of the department of Mathematics and Computer Science during 2008/2009. During that year I guided the discussions on the changes to the 4-credit system for both sides of the department.
- I attended the Council of Independent College's workshop for Department/Division Chairs in Portland in the spring of 2007.
- I was a member of the faculty senate for the spring of 2008 and the year 2008/2009. As well as my regular duties as a senator, I worked with Jessie Hand to create a temporary faculty senate website. I worked with her over the summer to create the complete and permanent website and a staff member was hired to maintain the site.
- I was a member of the Math Search Committee that hired Mike Rowell.
- I was a member of the search committee for an assistant dean of students. This search was later cancelled due to budget issues.
- I was the advisor to the CS Club in 2007/2008.
- I was a member of the Natural Sciences Strategic Planning Committee for two and a half years.
- I was a member of the Natural Sciences Facilities Planning Committee.
- I was a member of the Berglund Center for Internet Studies Advisory Board. As a member of the board I attended a board meeting, and reviewed three applications for the Berglund Fellowships.
- I gave a guest lecture for Kazuko Ikeda's Intercultural Communication course in the fall of 2008.
- I was a member of the panel "Erasing the Gender Border in Science" at the Gender Studies Symposium at Lewis & Clark College.
- I was a member of the AAUW committee that put together an event to recognize Outstanding Young Women Students in Science, Technology, and Math.
- I reviewed a journal paper for *Pacific Coast Philology*, the journal of the Pacific Ancient and Modern Language Association. Lorely French and Pauline Beard are the editors for this journal.
- I reviewed three papers for The Special Issue on Arabic Natural Language Processing (ANLP) that was issued by ACM Transactions on Asian Language Information Processing (TALIP).
- I was a member of the Program Committee for the Natural Language Processing Track of the International Conference on Informatics and Systems. I reviewed four full paper submissions to the conference.

Part Three: Professional Growth

Please list and date publications, creative work, presentations at professional meetings, grants, fellowships, and other scholarly activities since you last submitted a Self-Evaluation Form. Please be sure that you attach copies of articles and other materials listed, where appropriate; FDPC will consider your file to be incomplete if these materials are absent. You are also required to submit an updated curriculum vitae.
(For term contract faculty members, substantial achievement in professional growth is not required for contract renewal, although it is required for promotion.)

My professional development falls in the areas of Arabic Computational Linguistics and Computer Science Education. These are the projects that I have been working on in the last three years:

Project 1: Computer Application for the Analysis of RSS Data

Computational Linguistics or Natural Language Processing is a field that utilizes computers to develop language applications. Examples of applications that have emerged from NLP include spell checkers, text-to-speech systems, and automatic machine translation systems. Another focus of the field is on the languages themselves and this is of most interest to linguists. Tools have been developed to aid in the analysis of language morphology, syntax, and semantics.

Corpus Linguistics is a field that utilizes large amounts of data to aid in the development of language applications. Basically, there are three ways to go with language tools. You can develop the tools using the rules of the language for analysis, using statistical analysis of large amounts of data, or a combination of both. For corpus linguistics, corpora are compiled and combined with statistical techniques are then used in developing applications.

Now, many corpora are available for English and other Indo-European languages, and many of these corpora are freely available for researchers. Arabic is still catching up and most researchers in this field need to compile corpora before they can develop and test their applications. The goal of this project was to develop an application that automatically builds a corpus from RSS (Really Simple Syndication) feeds. RSS feeds are a web format used to publish content that is frequently updated such as news items and blogs. The application that I developed automatically connects to RSS feeds of a user-supplied list of URLs and downloads the content of the feeds and compiles them into a corpus. The corpus is annotated with XML tags to mark-up linguistic elements.

The RSS Feed Analysis Application and Corpus Builder had been used to build a corpus of blogs. The application connects to a blog and downloads the XML source of the site.

The application parses the data in the source of the RSS feed to build a corpus. The corpus is then tokenized, which involves removing all whitespace (new lines, spaces, tabs, etc.). The tokenized corpus is then run through my Arabic Part-of-Speech tagger, which provides the part-of-speech for each token. Adding this linguistic data to the corpus allows for more in-depth analysis of the corpus.

Details of the RSS application have been published in Interface, the journal published by the Berglund Center for Internet Studies. Details have also been published in the conference proceedings for the Second International Conference on Arabic Language Resources and Tools. I have received requests for the application from the Open University in the UK, Lessius University College in Belgium, and King Abdul Aziz City for Science and Technology in Saudi Arabia. I am still awaiting the results of their research.

Project 2: Research at OHSU

During my sabbatical I visited and collaborated with researchers at the Center for Spoken Language Understanding (CSLU) research group at the OGI campus of OHSU. This group has expanded in recent years to fill in the gap that was left behind after many of the Computer Science faculty left to join Portland State University after OHSU acquired OGI as the research of the CS faculty did not align with the mission of OHSU. The new faculty members are experts in the field of Computational Linguistics and have moved to OHSU from University of Illinois at Urbana-Champaign, Brown University, and AT&T labs. This has resulted in OHSU becoming one of the top universities for Computational Linguistic research, and I am lucky enough that it is close by. The CSLU will be hosting the Association for Computational Linguistics international conference in June 2011.

At the CSLU I helped one of the graduate students, Mahsa Yarmohammadi, with her work in developing a Farsi part-of-speech tagger. I do not speak Farsi, and even though Arabic and Farsi use the same script, they are quite different grammatically. However, I was able to guide her in the design of her tagger so that it used the same statistical principles that are used in mine.

One of the faculty members at the CSLU, Izhak Shafran, has a DOD grant to perform some analysis of Arabic speech data. He has compiled a corpus of Arabic news broadcasts and television interviews. I have only ever worked with Arabic textual data so this was a great opportunity for me to work with speech data. Neither Izhak Shafran nor his student Maidar Lehr speak Arabic and their research involves developing a language model for speech recognition that examines the pauses that occur in spoken Arabic. Although they do not need to understand the language been spoken to develop the language model, we realized that it would be interesting to determine how the language might affect the accuracy of the model. Izhak provided me with data that included the output from their model and the original data for comparison. My analysis of the data shows that some of the errors that their model is reporting are being misinterpreted and are in fact correct in the language. We are currently trying to categorize the errors to determine how the language is affecting the model. The work is ongoing.

The work that I'm currently doing with Izhak and Maidar is not mentioned in my sabbatical proposal because I had not yet spent time at the CSLU. This is in fact a direct result of me spending time at the CSLU and was the reason that I spent part of my sabbatical over there.

While I was at the CSLU I met Kristy Hollingshead who had almost completed her Ph.D. Her goal is to be a faculty member at a small university or liberal arts college. She visited me at Pacific, and really enjoyed the atmosphere. I worked with her on applying for a Computing Innovation Fellowship so that she could spend a year with me as a post-doc. The plan was that we would work on one research project together and that she would teach one course to give her experience in teaching undergraduates. I would serve as her mentor. Unfortunately, our application was not successful, though we always new that these fellowships are competitive as they provide a $75,000 salary for the post-doc for 12 months plus fringe benefits and travel stipends.

The connections that I have made are invaluable and have already resulted in some positive outcomes. Jessica Ferguson who is currently a CS senior at Pacific spent the summer working at the CSLU for her REU (Research Experience for Undergraduates). I also know that I am now considered an affiliate of the CSLU. At the first Pacific NW Regional NLP Workshop held at Microsoft in April 2010 I was introduced as an affiliate of the CSLU at OHSU. The researchers attending the workshop were from OHSU, University of Washington, University of British Columbia, Simon Fraser University, Microsoft Research, and the Pacific Northwest National Laboratory.

Most of the work that I accomplished at the CSLU was not in my sabbatical proposal as it all came about after spending time there and talking to the faculty and students. My sabbatical provided me with the time to mingle there, start on some new and exciting collaborative research, and find a research base where I am considered an affiliate and strengthens the ties between Pacific University and OHSU.

Project 3: Girls Gather for Computer Science

In the spring of 2009 Jeffrey Barlow and I were contacted by Heather Young (nee Hawkins), who graduated from Pacific in 2005 (Integrated Media Major) and has been working at OPB ever since. Heather and I had worked together on the Pacific University electronic yearbook for three years. OPB were looking for partners in applying for an NSF Broadening Participation in Computing grant and wanted to know if we would be interested. Their ideas were to target middle school girls with materials that break the stereotype of computer scientists and perhaps have a workshop for the girls. As it happened, Juliet Brosing and I had approached Intel the year before for funds to start up the Girls Summer Science Camp that ran at Pacific from 1991 until 2000, but had been unsuccessful in securing the funds. We were definitely interested in partnering with OPB on the NSF grant application so together with Chris Wilkes and Camille Wainwright we prepared and submitted a proposal. I was the PI and Jeffrey and Juliet were co-PIs.

The proposal that we came up with has the following main objectives:

1. **Develop a pedagogical strategy for middle school girls that instills a view of women scientists as leaders.**
2. Improve the female students' confidence and skills in an effort to recruit them into science careers, especially in computer science.
3. **Establish a collaborative learning community that includes students, teachers, parents, faculty, and community partnerships.**
4. Disseminate the results of the project (including curriculum and student products) via electronic media, presentations and publications, to create a national model.

We were notified in December 2009 that our project was recommended for funding but that we needed to get IRB approval. I spent three months of my sabbatical working on this project, which was not in my original sabbatical proposal. The proposal was awarded $554,240. Out of 44 full project proposals that were submitted, 8 were funded.

This project involves more than running a Computer Science Camp for Girls. The research component of the project involves collecting data from the camp participants for ten years to study the effectiveness of an all female camp that targets 7th and 8th grade girls. We will also be developing the pedagogical materials for the camp and these will be used to create a national model for a computer science camp.

The project officially began on April 1st 2010 and the first camp will run in June/July 2011. During my sabbatical I created the surveys for parents and camp participants, wrote the informed consent forms for parents and camp participants, created a timeline for the project, worked with the university attorney on the contracts for OPB and the external evaluator which have all been completed and signed by all parties, put together an advisory board, and created a wiki for the project.

I also attended the NSF: Broadening Participation in Computing program meeting, and the annual meeting for the National Center for Women in Technology (NCWIT).

Project 4: Partially Distributed Student Teams in CS Courses

The final project I have been working on is part of the NSF funded North West Distributed Computer Science Department project (NW-DCSD). The goal of the project is to bring together faculty from across the region to share resources and skills and thereby improve computing education.

In the fall of 2008, I worked with Pamela Dake, a CS professor at Clark College on creating a project for our data structures courses. The students worked in teams comprising students from both campuses on creating an airport simulation program that determined when planes should take off, land, and when passengers should proceed to departure lounges. The project was a success, and the students gained experience in working with partially distributed teams. Students communicated via email, instant messaging, and video conferencing to distribute the workload and build a complete simulator. The project culminated in a meeting on the Pacific campus where the students finally all met each other and presented their results.

During my sabbatical I drafted a paper describing the project and presenting our results. Pamela is currently editing the draft for submission to a CS education conference. We hope to repeat this project when I next teach Data Structures and collect more data.

Summary of Conferences Attended:

- Annual Conference of the Consortium for Computing Sciences in Colleges, Northwest Region (CCSC-NW) that was held at Linfield College in 2007.
- ACM Special Interest Group on Computer Science Education's (SIGCSE) Technical Symposium that was held at the Oregon Convention Center in Portland in 2008.
- National Center for Women in Technology (NCWIT) Summit on Women and IT held in Portland in 2010.
- 2010 NSF Broadening Participation in Computing (BPC) meeting in Los Angeles.
- North West Distributed Computer Science Department (NW-DCSD) in Vancouver, Washington in 2010.
- Pacific Northwest Regional Natural Language Programming Workshop in Redmond, Washington in 2010.
- International Conference on Arabic Language Resources and Tools in Egypt in 2009.

Publications, Presentations and Grants:

- Dake, P., Khoja, S., Bryant, R., and Orr, G. 2008. Designing a collaborative cross-campus airport (or other transit) simulation project: panel discussion. *J. Comput. Small Coll.* 24, 2. Dec 2008.
- Khoja, S. 2009. An RSS Feed Analysis Application and Corpus Builder. Proceedings of the Second International Conference on Arabic Language Resources and Tools, ISBN: 2-9517408-5-9. April 2009.
- Invited research talk at the Mathematics Colloquium at Willamette University. Feb 2008.
- Principal Investigator, NSF Award No. 0940545. G2CS - Girls Gather for Computer Science. Developing a modular summer day camp to introduce girls to computer science, with female scientists and industry professionals as leaders. $554,248. April 2010.

Part Four: Current Year Goals

Please discuss your teaching, service, and professional goals for the current academic year.

The main focus of my teaching this year is the transition to the 4-credit model. The courses that require modification and update are CS380 Algorithms, CS493 Software Engineering 1, and CS494 Software Engineering II. These courses require additional content and reorganization. I am also updating the CS150 Intro to CS I lecture notes so that the pace of the course is faster and we can get to more complex and interesting material earlier.

For my service this year I will be department chair in the spring of 2011. I am currently on family leave so Doug Ryan is the chair for this fall. I am currently a member of the CIO search committee and will potentially be on the Math search committee. Even if I am not a member of the Math search committee, I will attend all talks by candidates and meet with each candidate.

My main professional goal for this year is to make the G2CS camp a success. It is important that this NSF supported project is successful so that I can secure future funding and maintain a good relationship with the NSF. The next nine months are going to be the busiest time for the project. We need to develop the website, all the application materials for camp participants, all the application materials for teachers, formulate a selection process for camp participants, formulate a selection process for teachers, organize instructors for the camp, line up potential women role models, arrange 7 field trips to local industry locations, and the most important part of all, develop curriculum for the camp that will serve as a model for other camps.

I will maintain contact with the CSLU and attend seminars there when possible. I will continue working with Izhak and Maidar on analyzing their Arabic data, though realistically, this will probably happen in the summer after the camp has ended.

Please discuss the ways in which the University can help you better in carrying out your plans.

_____ _____ My mentor is:_____

Signature Date

revised 09/10