

# **COMPUTER and INFORMATION SCIENCE**

## *Department Newsletter Spring 2010*

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**Greetings from Professor Yedidiah Langsam, Dept Chair.** *It gives me great pleasure to present you the inaugural issue of the Brooklyn College Department of Computer and Information Science Newsletter. The department offers a BS in Computer Science, a BS in Multimedia Computing, a BS in Information Systems, an MA in Computer Science and an MS in Information Systems, as well as several other joint degree programs, minors and certificates. The Department's faculty and students participate in a broad range of research projects that have generated numerous publications, garnered government and industry grants and have brought the department national recognition. When reading this newsletter I hope you gain a sense of great excitement that permeates the department. We intend to publish this newsletter regularly and look forward to your comments. I would like to thank Professors Danny Kopec and Elizabeth Sklar for bringing this newsletter to fruition. It is also appropriate to take note of Professor Aaron Tenenbaum's retirement as Department Chairperson. Professor Tenenbaum served as chair for more than twenty years and is responsible for leading the Department to its position of excellence.*

### **NEW LEADERSHIP**

In July 2009, the department welcomed its third chair, **Professor Yedidiah Langsam**. Please join the CIS faculty in expressing tremendous gratitude for the strong guidance and positive energy that **Prof Aaron Tenenbaum** has given to the department throughout the years—and continues to give, as he remains an active member of the department. *Other leadership changes:* **Prof Simon Parsons** succeeds **Prof Keith Harrow** as Graduate Deputy Chair and **Prof Danny Kopec** as Graduate Advisor, and we extend deepest thanks to Prof Harrow for many years of service in this role. **Prof Elizabeth Sklar** is Undergraduate Deputy Chair (CLAS) and *Director of Multimedia Computing*. **Prof Joe Thurm** remains SGS Undergraduate

Deputy Chair. **Prof Ira Rudowsky** continues as *Director of Information Systems*.

### **RESEARCH GRANTS**

Several faculty members have been awarded research grants in the last year, through competitive programs of the National Science Foundation (NSF). These grants help to satisfying the needs of undergraduate and graduate students, as well as other needs, such as the department's research infrastructure and conference travel by faculty and students.

**Prof Scott Dexter** and Prof Aaron Kozbelt (Psychology) received a CreativeIT grant from the NSF, entitled "Dynamic Cognitive Analyses of Creativity, Expertise and

Aesthetics in Software Development” (8/2009–7/2012, \$698,992, #08-55861). This project investigates the development of a model for creativity in software development. The researchers hope to find a model that can serve as empirical validation for the claim that creativity has significant, cross-disciplinary aspects and that the study of creativity in programming can profitably draw upon, and contribute to, the study of creativity in other disciplines. As part of this project, some Brooklyn College CIS majors have recently participated in a survey about software aesthetics. More students will be recruited to participate in a laboratory experiment focused on acquiring a deeper understanding of the relationship among code aesthetics, correctness, and creativity.

**Prof Dexter** was also awarded an NSF Collaborative CCLI grant with Professor Laurel Cooley (Math) and three other institutions, entitled “Linear Algebra in New Environments (LINE)” (9/2009–8/2011, \$193,232, #08-37331).

**Prof Paula Whitlock**, in collaboration with CUNY faculty members Michael Kress, Fred Moshary, Robin Bargar and Tobias B. Schaefer, received an NSF award entitled “II-EN: City University of New York – Computing Research Infrastructure” (\$452,410, #09-58379, 4/2010-3/2013).

**Professors Elizabeth Sklar and Simon Parsons** received an NSF REU SITE grant to support undergraduate robotics research. This project, called “MetroBotics”, provides fellowships for up to 10 undergraduates from the CUNY community. The funding is part of the ARRA Stimulus package. (\$345,000, #08-51901, 7/2009-6/2012).

**Prof Sklar** was also awarded a CUNY Collaborative grant with Professor Susan Epstein, of Hunter College, to explore shared decision making in human-robot teams (\$57,000 9/2009-8/2011).

**Prof Rohit Parikh** received a grant from the Morris and Alma Schapiro Fund to support the Conference on Eastern and Western Themes in Philosophy.

**Prof Danny Kopec** received a grant for the Brooklyn College Center for Teaching,

“Bridges Across Brooklyn: Community-Based Learning in the Brooklyn College General Education Curriculum”, a CUE Innovative Program Proposal, developed by Myra Kogen (\$30,950, 8/2009-7/2010).

## INTERNATIONAL ACTIVITIES

**Distinguished Professor Rohit Parikh** has presented six talks recently around the world: two in Amsterdam, three in China and one in Doha, Qatar. In Qatar, Prof Parikh was an invited speaker at the joint International Conferences on Relational Methods in Computer Science and Applications of Kleene Algebra, where he presented a talk entitled “Knowledge and structure in social algorithms.”



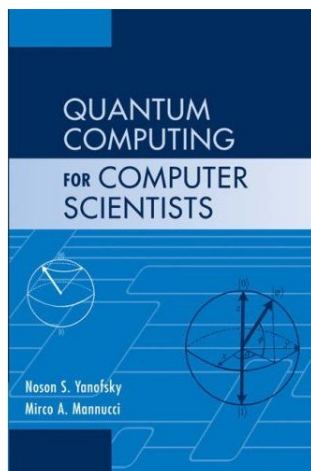
The International B-Prolog Team, led by **Professor Neng-Fa Zhou**, won the second place among 16 teams in the second ASP solver competition in 2009. Prof Zhou served in 2009 and 2010 on the program committees of ICLP, a flagship conference on constraint logic programming.



**Prof Paula Whitlock** was an organizer in and participant in the 7th IMACS Seminar on Monte Carlo Methods held in Brussels, Belgium (2009), where she presented two papers. “Random Packing of Hyperspheres and Marsaglia’s Parking Lot Test”, with Stefan Agapie (Computational Math major), describes the relationship between random packing phenomenon in many dimensions and the empirical Pseudo-random generator test developed by Marsaglia and distributed as part of the Diehard Suite of tests. “Generalizing Sudoku to Three Dimensions”, with Tiffany Lambert (recent CIS), describes the development and research into the properties of three-dimensional versions of Sudoku.

## FACULTY PUBLICATIONS

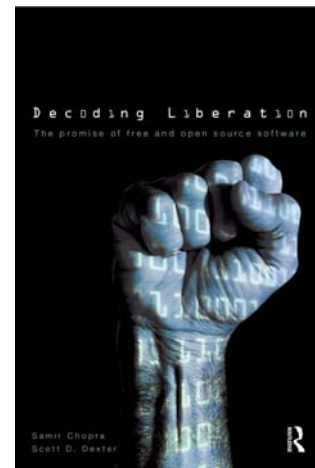
**Prof Noson Yanofsky** published a book entitled *Quantum Computing for Computer Scientists*, with co-author Mirco Mannucci (Cambridge University Press, 2008). The book introduces the multidisciplinary field of quantum computing and “strives to exploit some of the uncanny aspects of quantum mechanics to expand our computational horizons... takes readers on a tour of this fascinating area of cutting-edge research. Written in an accessible yet rigorous fashion, this book employs ideas and techniques familiar to every student of computer science.”



A book written by **Profs Scott Dexter** and **Samir Chopra** (Philosophy, formerly CIS),

*Decoding Liberation: The promise of free and open source software* (Routledge Press, 2007), is coming out in paperback after receiving strong reviews and an award from a library organization.

**Professors Aaron Tenenbaum,**



**Gerald Weiss** and **David Arnow** presented a paper at the SIGCSE 2010 Technical Symposium in Milwaukee entitled “Monetary Values: Double Trouble or Dollars and Sense?” and discusses the widespread misuse of floating-point types to represent monetary amounts in introductory programming classes: “This is evident from a survey of popular CS1 textbooks. It is instructive to examine how dollars and cents and other currency values are represented in actual practice and how we can utilize those techniques in computer science education, for both the sake of correctness and to illustrate important general principles. Furthermore, it is particularly interesting to review the history of CS education and determine how this situation came to pass. The interplay between technology, academic cultures and institutional development turns out to be quite significant.”

**Prof Ira Rudowsky** published an article in the Sept-Oct 2009 issue of *Journal of Retirement* entitled “The Portable Portfolio: Improving Retirement Planning With Semantic Web Technology”.

**Prof Danny Kopec** published several conference papers including: “Improving

Recruitment and Retention in Computer Science Courses with Virtual Enterprise and WPOL", with Edgar Troudt, Christina Schweikert, and Stuart Shulman, at the Sloan-C International Symposium on Emerging Technology Applications for Online Learning (2009) and "VE for the Next Generation of Entrepreneurs", with Edgar Troudt and Christina Schweikert, presented by Edgar Troudt at GBATA Eleventh Annual International Conference, in Prague, Czech Republic (2009). **(The list above represents information received from June, 2009)**

## UNDERGRADUATE PROJECTS

Every Fall and Spring term, undergraduate computing majors pursue projects under the rubric of CIS 60.1 (independent study) or CIS 88.1 (honors research) courses. Most students embark on these projects during their senior year, although project courses can be taken earlier. Projects may be sponsored by a CIS faculty member or by faculty or administrative staff elsewhere on campus, such as the Library and the Brooklyn College Small Business Center. The following professors have recently supervised projects: Clark, Gross, Kopec, Langsam, Parsons, Raphan, Schwimmer and Sklar. Some off-campus projects may also be available, such as at Goldman Sachs.

Below is an excerpt from a recent project:

*Modern industries use technological devices, such as computers. The data...shows that these devices have been involved in multiple mishaps. ...I examined the aviation, communications, electric power, finance, medical, military, miscellaneous, nuclear power, and space industries in order to determine whether I could find commonalities among the causes of these accidents. The goal was to try to provide a starting point for a classification system of mishap causes. By Jonathan Fruhman.*

## DEPARTMENT RESOURCES

The **Bridges to Computing Resource Center** in room 0317N has been updated to support the learning needs of CIS students. Originally set up by the Bridges project, the resource center now provides a space for CIS students to congregate and support each other via peer-tutoring. Check out the schedule online at and stop by!



<http://bridges.brooklyn.cuny.edu>

## OUTREACH

Starting in Summer 2009, we have been collaborating with CUNY's College Now program (<http://collegenow.cuny.edu>) to offer an introductory computing course to high school students. Our *Does It Compute?* course is offered on Saturdays during the academic year and as a 3-week summer workshop. The course is open to New York City public high school students, who can receive a science elective credit for completing the course. Development of the course was provided by the Bridges to Computing project, funded by the National Science Foundation (#05-40549, 3/2006-5/2011). For further information, go to <http://bridges.brooklyn.cuny.edu>.

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