

Bits & Bytes

The newsletter of Information Systems & Decision Sciences

Spring 2009

Chair's Message, Kaushal Chari



In these tough economic times, the Information Systems & Decision Sciences Department is fulfilling its mission of teaching, research and service with fewer resources. Thanks to our dedicated faculty and staff, our students continue to receive quality education, our faculty members continue to publish in top journals (a summary of one such journal article by Joni Jones can be found in this issue), and the department continues to be engaged with the community. Some highlights include:

- **Al Hevner**, Professor & Citigroup/Hidden River Chair received the Lifetime Achievement Award for Design Science in May.
- **Balaji Padmanabhan**, Associate Professor & Anderson Professor of Global Management received a \$100,000 research grant.
- **Don Berndt**, Associate Professor serves as a co-investigator on multiple grants totaling over \$1 million from the US Veterans Administration.
- We launched the ISDS Practice Center where students work on projects for sponsoring companies.
- The fall 2008 panel of senior IT executives included **Gary Flowers**, CEO, Bisk Education Inc, **Jim Fullerton**, partner, Ernst & Young, LLP, and **James Meinen**, vice president, JPMorgan.

• Our spring 2009 panel of senior IT executives included **Linda K Baril**, executive director (retired), JPMorgan, **John Tonnison**, senior vice president, Tech Data, and **William White**, vice president, Raymond James.

• Nobel Laureate **Vernon Smith** visited USF College of Business and met with ISDS faculty.



From left: Anol Bhattacharjee, Balaji Padmanabhan, Joni Jones, Nobel Laureate Vernon Smith, Don Berndt, Manish Agrawal

Be sure to read the spotlights in this issue of our newsletter! There's a great one on long-serving faculty member **Murray Cohen**, another on star student **Tracey Collins**, and one on our alumnus **Eric Leonard**, a solutions specialist with Microsoft.

Happy reading!

Cordially,

K Chari

Kaushal Chari
Professor & Chair, ISDS

ISDS News



Alan Hevner Receives Lifetime Achievement Award for Design Science

The design science community recognized professor & Citigroup/Hidden River Chair **Alan Hevner** for his significant contributions to the field. The award recognizes Hevner's role in nurturing design science through scholarship, editorial leadership, and federal

continued on page 5

Contents

News	1
Faculty Focus	2
Student Focus	3
Research Feature	6
Alumnus Feature	8

Faculty Focus



Murray Cohen
Associate Professor

Murray Cohen is last of the founding faculty members in the ISDS department and he led the department in its formative years.

Popular with students, Cohen has won the James R. Longstreet award for teaching excellence numerous times. As he prepares to retire by the end of year, we asked him to describe the evolution of the department and share some of his experiences at USF.

Tell us about the circumstances that led to the creation of the Information Systems Decision Sciences department?

I joined the College of Business in 1982. A couple of years later (1984-85), the ISDS department was founded with 11 faculty members. The department was the direct result of input that (then) dean **Robert Cox** received from conversations with the business community in Tampa Bay. They told him the College needed to have a department to teach courses on quantitative methods and information systems. As a result, faculty teaching operations research, statistics and MIS joined the newly created department. The MIS component was led by **Stan Birkin**, who had developed MIS concepts in a course in the management department in the 1970's.

The first chairman of the department was **John Hodgson**, an economist. He joined USF a couple of years before me. However, even in these early days, while John was putting together an advisory board and doing fund-raising, I was taking care of many responsibilities of department chair, including course scheduling and course development. Because of John's active efforts, our department had the first active advisory board of any department in the College and was very successful at fund-raising.

Developments in the industry helped John in his efforts to build the advisory board. IBM was laying off large numbers of highly-skilled workers and was willing to pay two-thirds salary for three years to those who joined academic departments. An individual from that group joined us and helped John build the advisory board.

How did the department grow from there?

One of the first faculty members to join the new department was **Philip Pyburn**, who stayed for three years. The dean then allowed the department to add a PhD program; the ISDS department had the first PhD program in the College. **Cynthia Cohen** helped in these formative years in her role as Graduate Dean of COB (she is part of the management department). John laid out the structure of the PhD program, with Cynthia, and **Ellis Blanton** was recruited to the department faculty with the mission of nurturing the nascent doctoral program.

It was my privilege to teach the first PhD course in the college around summer 1986, which was a survey of the literature in quantitative methods.

What were your major thrusts when you served as department chair?

John became Associate Dean of the College of Business in 1987 and I formally became the chair of the department. My major focus was to provide a formal structure to our degree programs.



I petitioned Tallahassee to consult with the State University System about giving the MIS program a rubric of its own. I gathered signatures from other MIS programs in state universities across Florida and succeeded in persuading the legislature to provide a formal rubric. While our preferred prefix for the rubric was MIS, this prefix had already been taken by the military for Military Science courses. So we settled for the next best, which was ISM. Hence, all MIS courses in Florida have ISM course numbers.

With the rubric in place, Ellis, **Philip**, myself, and **Roger McGrath** put together the taxonomy of all ISM courses for the state. We recruited **Terry Sincich** to teach the mass lecture course in statistics. I was particularly impressed by his mastery over the TV medium. It has continued to be a success to this day.

Tell us about some more recent developments.

By 1990, we had all the components of a very well-structured academic department. **Paul Cheney** joined us as chair in 1998 and re-invigorated the advisory board. He put together technical classes such as a course on C++, which were also offered to industry.



As the finance industry began to take root in Tampa around this time, an endowed chair was established in the department. Bear Stearns also funded the establishment

of the Bear Stearns lab. **Alan Hevner** joined the department in 1994 from Maryland as the endowed chair. Shortly after joining, he implemented the MS MIS program. With the increasing interest in technology, our undergraduate program was enjoying a surge in popularity.

In recent years, we have been hurt by the aftermath of the dot-com bust and rising interest in finance and real estate. I hope that as the economy resumes normal growth, students will develop renewed interest in our offerings. §

Questions and Answers

Student Profile: Tracy Collins

Tracy Collins is a senior with a major in MIS. A self-described non-traditional student, she has diligently maintained a very high GPA and is looking forward to a challenging and productive career upon graduation.

Tell us a little bit about yourself.

I am what is referred to as a “nontraditional” student even though my early years were more or less traditional.

I was born to hard-working parents who not only gave me unconditional love, but also provided an environment to challenge myself and grow. They instilled in me the importance of a good work ethic, respect for others, and an awareness of life’s boundless opportunities.



I had two children at a young age and have worked for a small family-owned corporation for most of my life. After many years, I felt that there was more for me in life and therefore decided to return to school to “broaden my horizons.” I started out at HCC in 2005 and received my AA in 2007. I transferred to USF and have been pursuing an MIS degree ever since.

Why did you choose the MIS program?

Although I have always been interested in computers, these types of industry-relevant skills were one of my primary motivations for choosing the MIS program.

The program provides the opportunity to obtain the necessary knowledge and skills needed to succeed in the IT field. Specifically, my database design, systems analysis, and business applications development classes have allowed me to learn about such topics as the physical/logical design and management of relational databases, and have given me a fundamental knowledge of the C# programming language.

After being in the MIS program for the last two years, I’m happy to report that I am certain that I made the right choice as the program perfectly combines business skills with technical skills to offer a well-rounded education.

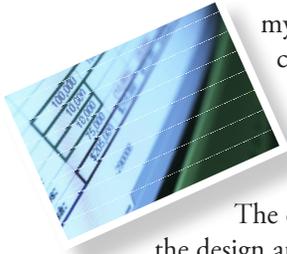
What are some of your favorite things that you have learned at USF?

It is difficult for me to choose any one thing that is my favorite because I love everything that I have learned here!

One thing that does stick out, though, is that many of the classes require a group project which has taught me how to work well within a team setting. Although I initially found the group projects to be quite difficult, I learned to enjoy the process of getting to know my team members and tackling a group project together. In particular, learning to balance the study habits, preferences in deadline management, and work quality of my team members with my own has been a challenge. However, by working within these groups, I have learned how to assess my team members’ strengths and weaknesses as well as my own and assign tasks accordingly.

What areas of IT might you be interested in pursuing in the future?

I really enjoyed my systems analysis and design course and



my database design and administration course. Although I had heard stories about how difficult and demanding database design was, I thoroughly enjoyed it and learned so much.

The course really enhanced some of the design and modeling topics that were originally introduced in Systems Analysis while further exploring the actual creation and management of a database in Microsoft SQL Server. In fact, I am utilizing what I learned in this class at my work by migrating my company's Access database to MS SQL Server.

What motivates you to maintain a high GPA?

Although I'm happy that I have a high GPA, high grades are not my primary goal. My goal is to gain knowledge.

School – for me – is not some chore to be endured so I can obtain a degree. Instead, it is the quest for self-betterment and discovery, and I'm enjoying the journey. Simply put, my motivation is the desire to learn. In other words, a high GPA is just an excellent consequence of truly applying myself and absorbing what I am taught.

What awards/honors have you received?

I consider it a great honor that I was chosen for this student feature. I am also a member of the Phi Kappa Phi Honor Society and the Golden Key International Honor Society. I also received the Network of Executive

Women scholarship award for 2009 because of my high GPA and excellent references from my professors.

What is your strategy for learning?

As I previously mentioned, I love to learn. I am interested and get totally absorbed in every class that I take. I study not just to pass a test, but to assimilate and understand the subject.

Being a single mom and working full-time, I really have to manage my time wisely. However, because I've always made sure that I do find the time to study, I've been rewarded tenfold with excellent grades and recognition from my professors and peers. I have also been able to take advantage of some of USF's excellent resources such as the Business Communications Center, which I have used several times when writing essays.

Is there anything else you would like to share?

I must add one more thing about the MIS professors, because it has meant so much to me. Specifically, **Varol Kayhan**, who taught my systems analysis and design course, and **Weyman Whitlock**, who taught my database design and administration course, really took the time to *always* answer all of my questions promptly, met with me when I needed, and went above and beyond to provide any additional help I required. When I excelled in each of these courses, these professors did not hesitate to recognize my efforts and take a personal interest in my education and plans in the field. Receiving unsolicited recognition by these professors – whom I respect very much – has encouraged and inspired me. §

Advanced System Analysis & Design

Advanced Database Administration

Distributed Information Systems

Enterprise Information Systems Management

Electronic Commerce

Project Management

Enterprise Resource Planning & Business Process Management

Web Based Applications

MS in Management Information Systems

Information Security & Risk Management

International Aspects of Information Systems

Managing the IS Function

Multi-Media Applications

Software Testing

Decision Support Systems

Data Mining

Data Warehousing



www.coba.usf.edu/msmis

ISDS News, *continued*

sponsorship at the National Science Foundation. The honor was conferred at the 4th International Conference on Design Science Research in Information Systems and Technology, held in Philadelphia, PA in May. Hevner has published more than 150 research articles and has consulted for several Fortune 500 companies in the areas of software systems development and quality assurance.

eWinWin and Florida High-Tech Corridor Funds Research Project on Online Social Shopping

Balaji Padmanabhan, associate professor and Anderson Professor of Global Management, was recently awarded a \$100,000 grant from eWinWin, Inc and the Florida High Tech Corridor to study “online social shopping.” The project will focus on understanding social shopping in general and social pricing in particular. The social pricing aspect will be studied in the context of “demand aggregation” (or “group buying”) online. eWinWin Inc.’s technology has been successful used in the business to business space.



Gill Appointed Editor-in-Chief

Associate professor **Grandon Gill** has been appointed the Editor-in-Chief of *Informing Sciences*, a journal published by Informing Science Institute. Gill has also been recognized as the fellow of the Informing Science Institute.



ISDS professor selected for undergraduate teaching award

USF president **Judy Genshaft** presented professor **Mark Dummeldinger** with USF’s outstanding undergraduate teaching award for 2007-08. This prestigious annual award is presented to select faculty university-wide, recognizing excellence in the classroom.



Lean management at the College of Business

We had a full house for recent week-long graduate-level course on Lean Management and Business Process Improvement. This course covers foundations of Lean Management, Six Sigma, and Business Process Improvement methodologies. It is team-taught by three USF faculty members: **Ron Satterfield** (ISDS), **Yancy Edwards** (Marketing), and **Kingsley Reeves** (Industrial & Systems Engineering). They jointly lead the course, which

includes a combination of lectures, discussions, case work, interactive exercises, guest speakers, and industry tours.

The week-long experience is available twice yearly, next slated for the week of August 17. To learn more, email rsatterf@coba.usf.edu.



Joe Gliksman, a guest speaker from The Mosaic Company, takes student questions during the March graduate-level Lean course. Gliksman, a USF alum, is a Six Sigma Master Black Belt.

Alumnus Feature, *continued*

Share some of your career highlights.

My career has evolved over time. Microsoft is one of those few companies where an employee owns his/her career. Resources are provided to help employees assess where they are at and where they would like to be; but the overall ownership lies with the employees. I’ve spent the past 13 years transitioning from an implementation resource (consulting with Microsoft Consulting Services) to a technical sales resource (account technology specialist) to my current role as a dedicated sales resource (solutions specialist).

Any advice to current students?

Take advantage of all the resources and programs available at your disposal. If you have the time, definitely look for co-op and internship programs. Time spent with a business is a great asset on the resume whether you’re applying at that particular business or another business after college. Work hard, strive for excellence, be passionate, have a plan, and more importantly—have fun! I can’t stress enough how important it is to ENJOY what you’re doing. You’re going to be working every day, so make sure it’s something you love. §



ISDS alumnus Eric Leonard is a solutions specialist for Microsoft.

Research Feature: Internet-enabled Reverse Auctions and Non-contractability



Assistant professor **Joni Jones** and her co-authors highlight the importance of non-contractibility in Internet-enabled reverse auctions in a recent article¹ in *Management Information Systems Quarterly*, a premier journal for MIS research. A summary is presented below².

The Internet has facilitated many new IT-enabled procurement options that raise questions for business practice and academic research. On-line reverse auctions, in which industrial buyers announce purchasing requirements and select suppliers from among the lowest bidders (Anderson and Frohlich 2001; Mithas and Jones 2007), are a particularly intriguing practice. On one hand, Internet-enabled reverse auctions may help buyers gain efficiencies by providing access to a larger pool of suppliers. On the other hand, reverse auctions may imperil long-term supplier relationships and appear inconsistent with the trend of firms developing deep relationships with a few suppliers in response to the growing importance of knowledge-based exchanges in the highly-dynamic service economy (Bensaou 1997; Steinfield et al. 1995).

Our primary purposes of this research are, first, to highlight the importance of non-contractibility in inter-organizational relationships, which has not been fully reflected in prior studies of electronic markets or, more generally, of firm boundaries. To gain a better understanding of non-contractibility we identify its key dimensions and assess how they affect firms' sourcing decisions. Our goal is to understand when firms will select reverse auctions rather than more traditional sourcing relationships, with reverse auction usage implying arm's-length market transactions rather than hierarchical or hybrid relationships. Our guiding logic is that a firm's choice among different IT-enabled procurement mechanisms stems from the firm's underlying choice of sourcing relationship. We studied the likelihood of reverse auction use by U.S. automotive assemblers and component manufacturers to assess how non-contractibility influences firms' use of reverse auctions, comparing and contrasting the effect of non-contractibility with traditional TCE determinants of sourcing choices.

¹ Sunil Mithas, Joni L. Jones, and Will Mitchell, "Buyer Intention to Use Internet-Enabled Reverse Auctions: The Role of Asset Specificity, Product Specialization, and Non-Contractibility", *MIS Quarterly*, 32(4), Dec. 2008, pp. 705-724

² Jones may be contacted at jjones@coba.usf.edu for more information

Multi-Dimensional Attributes of Non-Contractibility

Prior research helps identify non-contractible characteristics of relationships that are common in many settings. We focus on six characteristics: quality, technological investments by a supplier, information exchange, responsiveness, trust, and flexibility (Bakos and Brynjolfsson 1993).

We further categorize non-contractibility into two sub-dimensions, task-based and interaction-based non-contractibility. The "task" dimension of non-contractibility helps ensure high product performance standards, while the "interaction" dimension supports relationship longevity. We view quality, technology investments, and information exchange as task elements of the exchange relationship. In parallel, we view responsiveness, trust, and flexibility as interaction elements of non-contractibility. See Table 1 for a definition of the dimensions of non-contractibility investigated in this study.

Table 1: Dimensions of non-contractibility

Dimensions	Definition
Task Based Non-contractibility	
Quality	Manufacturing capability, warranty implications, and criticality of interaction with other components in an assembly
Technological Investments	Supplier's track record of continuous improvement in existing products, development of new products, and investment in keeping abreast with technological developments
Information Exchange	Exchange of proprietary information between buyer and supplier cost reduction and involvement in planning and goal setting activities
Interaction Based Non-contractibility	
Responsiveness	Supplier's sensitivity and ability to respond quickly to buyer's needs and to keep buyer updated on the requests
Trust	Buyer's perception about supplier's trustworthiness, confidence in supplier, and belief that supplier will honor its promises
Flexibility	Willingness of supplier to modify a contract, make necessary adjustments, and react to buyer's requests that may be beyond the terms of a contract. Flexibility relates more to the strategic aspects of a relationship while responsiveness (see above) relates more to operational issues

To study the determinants of reverse auction use we proposed and tested a theoretical model that builds on transaction cost and incomplete contracts reasoning. We developed a validated instrument for the non-contractibility concept. We conducted a survey of U.S.-based automotive assemblers and component manufacturers that make independent procurement decisions. Each respondent firm rated the likelihood of using reverse auctions for two categories of production goods (commodity and specialized types of production goods) with varying degrees of asset specificity and non-contractibility. Examples of commodity production goods are forgings, castings, steel, copper, and plastic resin; examples of specialized production goods are engineering applied polymers, engineered mold plastics, injection molded parts, and specialty chemicals.

Potential Insights and Implications

The core results provide three insights. First, buyers prefer to avoid reverse auctions for specialized goods. Second, our study offers the first empirical test of the incomplete contracts arguments concerning IT-enabled relationships, suggesting that buyers avoid reverse auctions when relationships with suppliers will involve substantial non-contractible commitments. We find that non-contractibility arising from needs for quality, technology investments, information exchange, responsiveness, trust, and flexibility leads buyers to avoid electronic markets that emphasize arm's-length relationships. These results support the argument that non-contractible aspects of buyer-supplier relationships remain important even as IT innovations allow firms significant flexibility in managing these relationships. Third, once non-contractibility is assessed directly and is incorporated in the model, traditional asset specificity does not have a significant influence on reverse auction use, although product specialization does retain a significant influence. Thus, both theoretically and empirically, this study teases out independent effects of asset specificity and non-contractibility. Because most previous empirical research did not consider non-contractibility directly, effects of non-contractibility that co-vary with asset specificity will have been attributed to asset specificity alone. This result highlights the importance of supplier investments in non-contractible elements of exchange relationships in an increasingly dynamic service- and knowledge-based economy.



The results have three managerial implications. First, our study provides insights that help in deciding which products and services are most suitable for procurement through reverse auctions. Second, suppliers should be reassured by the results showing that satisfied buyers are likely to continue business with their suppliers even if they are not the lowest bidders in the auction process. These findings suggest that suppliers often benefit from investment in non-contractible aspects of relationships, echoing the recent findings related to the importance of customer satisfaction for firm performance (Fornell et al. 2006). Finally, our findings suggest that electronic market makers should be careful in positioning their reverse auction offerings for selected items, in order to reduce negative perceptions that may arise when reverse auctions fail to meet buyer expectations and objectives. §

References

- Anderson, J., and Frohlich, M. "FreeMarkets and Online Auctions," *Business Strategy Review* (12:2) 2001, pp 59-68.
- Bakos, J.Y., and Brynjolfsson, E. "Information technology, incentives and the optimal number of suppliers," *Journal of Management Information Systems* (10:2) 1993, pp 37-53.
- Bensaou, M. "Interorganizational Cooperation: The Role of Information Technology An Empirical Comparison of U.S. and Japanese Supplier Relations," *Information Systems Research* (8:2) 1997, pp 107-124.
- Fornell, C., Mithas, S., Morgeson, F., and Krishnan, M.S. "Customer Satisfaction and Stock Prices: High Returns, Low Risk," *Journal of Marketing* (70:1) 2006, pp 3-14.
- Mithas, S., and Jones, J.L. "Do Auction Parameters Affect Buyer Surplus in E-Auctions for Procurement?," *Production and Operations Management* (16:4) 2007, pp 455-470.
- Steinfeld, C., Kraut, R., and Plummer, A. "The impact of interorganizational networks on buyer-supplier relationships," *Journal of Computer Mediated Communications* (1:3) 1995.

Questions and Answers

Alumnus Feature: Eric Leonard

Eric Leonard, a solutions specialist for Microsoft, shares his career experiences with us.

Tell us about your current job responsibilities?

I'm an optimized desktop solutions specialist at Microsoft, responsible for managing the sales of the Microsoft Desktop Optimization Pack across six states in the Southeast. I cover all business segments (education, state & local government, enterprise, small & medium business). This territory contributes roughly \$4.2M to Microsoft.

Describe your educational background.

I earned a bachelors degree in MIS from USF. I enrolled in '90 and graduated in '96.

Did you work while attending USF?

As I'm sure a lot of folks have, I worked at Publix during my time at USF. I also spent a year in a co-op program, working at GTE Data Services.

What areas in the MIS major did you find most interesting?

I really enjoyed the courses on information security and business data communications.

Which MIS courses have you found most useful in your career?

Systems analysis and design was extremely helpful. Until most recently, my career focused around deployment and technical sales. It really helps to have a good understanding of where a customer is "at" in the development process and what the lifecycle looks like when proposing solutions.

Are there courses you wish you had taken at USF, in the MIS major or elsewhere?

Given where I am in my career, I think more courses on

marketing or strategic thinking/management would have been helpful.

What are some of the most significant trends that you see in the IS/ IT landscape?

Certainly the economic downturn has impacted the IT from both a spending and project perspective. The biggest trend that I'm seeing is the increased reliance on ROI for project justification and approval. Some other thoughts:

- The *ability to put together a compelling business case* is critical for success in moving a sale forward with a client or getting an internal project approved.
- *Virtualization* is also a huge driver from a cost perspective. Clients are looking at server virtualization to reduce the amount of space in server rooms, cut power costs and reduce the percentage of underutilized assets.
- Many firms are looking at *reduced spending on desktop hardware* and doing extensive testing on desktop virtualization technologies.
- *Cloud computing* is really starting to heat up. Companies are looking at cloud-based solutions as an option to reduce the amount of time they spend managing local computing environments and moving that capability outside of the firewall.

What entry-level opportunities are available at Microsoft?

At Microsoft we have a *College Hire* program, designed to bring great hires into the business. I've seen entry level jobs available in product development, sales, marketing, services (to some degree). More information on Microsoft's College Hire program can be found at <http://www.microsoft.com/college/default.msp>.

As an employer, what attributes do you look for in new hires?

First and foremost: a great work ethic. In today's environment it is imperative to have a can-do attitude.

A strong passion for technology is also a key. For example, I would like the new hires to describe their home computer environment and discuss a specific technology they are passionate about.

Lastly, in a job interview, new hires should be their natural self rather than telling me what they think I may want to hear.



continued, page 5