

Department of Computer Science  
College of Engineering, Technology and Computer Science

Annual Report for  
Calendar Year 2007

March 11, 2008

Robert L. Sedlmeyer  
Interim Department Chair

## Department Mission and Vision

Unit	Section	No.	Statement
	A-Mission	NA	<p>The Department strives to offer students excellent instruction and educational opportunities in Computer Science, Information Systems, and Applied Computer Science.</p> <p>It endeavors to provide its students a durable technical foundation in an environment of rapid technical change, to enable and promote their professional growth through contact with best professional practice, and to play a role of resource and technical leadership in the regional communities.</p> <p>Our programs prepare graduates to</p> <ol style="list-style-type: none"> <li>1) Analyze, design, implement, and evaluate a computerized solution to a real life problem using appropriate tools.</li> <li>2) Communicate effectively through speaking, writing, and the use of presentation tools.</li> <li>3) Work effectively as a team member.</li> <li>4) Enter a professional computer science/information systems position or an appropriate graduate program.</li> <li>5) Pursue life-long learning and continued professional development.</li> <li>6) Be aware of ethical and societal concerns relating to computers in society and apply this knowledge in the conduct of their careers.</li> </ol>

## Department Goals and Accomplishments Calendar Year 2007

Unit	Section	No.	University Strategic Goals	Department Goals	List of 2007 Activities and Accomplishments	Bottom Line Metrics (Show at least 2 yrs' of data)
	B-Goals	1	<b>Provide innovative, relevant, and rigorous academic programs</b>	Offer excellent instructional and educational opportunities	Completed draft of program review report and submitted to VCAA for internal review.	
					Reviewed assessment process in view of revised ABET/CAC criteria.	<p>Realigned learning outcomes for undergraduate CS program with revised ABET/CAC criteria.</p> <p>Revising all Spring 2008 syllabi to incorporate course and program learning outcomes. These will also be posted on the CS website.</p> <p>Preparing revised assessment plan for University approval. Plan will address both undergraduate and graduate CS programs.</p>
					Committed to incorporating Major Field Test as direct measure for undergraduate CS program.	All graduating seniors will be required to take test beginning in Spring 2008.
					Committed to including individual course survey data,	All CS courses will utilize survey in Spring 2008.

					which will assess achievement of specific course learning outcomes, as part of assessment process.	
					Implemented thesis option for M.S. degree in Applied Computer Science.	Currently have one student pursuing thesis option.
					Continued CS Professional Advisory Board.	Held two meetings at which PAB members provided feedback on recruitment and retention activities.
					Continued use of external clients in CS 360/460, our CS capstone sequence.	Fall 2007 clients included Raytheon, IPFW ITS, and IPFW Athletic Department.
					Submitted proposals for two new graduate courses in databases (ACS 576) and security (ACS 545).	ACS 576 has received approval; ACS 545 approval is pending.
					Submitted proposal for new undergraduate course in security (CS 445).	CS 445 approval is pending.
					Received Senate approval for creation of Informatics Minor.	Appointed Tammy Toscos as Director of Informatics.  Due to dramatic changes in the Informatics undergraduate curriculum landscape, the minor is undergoing

					additional critiquing by Tammy before we decide to launch it.
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	B-Goals	2	Create an exceptional campus environment for a diverse community of learners	Improve student-faculty interaction	Modified advising process to assign faculty advisors to all majors as soon as they qualify to take MA 153.	
				Develop increased sense of community	Improved the environment (sofa, microwave, refrigerator, tables and chairs, wireless access) in ET 118, the student projects lab, to encourage more interaction among students.	
					Co-sponsored, with the Student ACM Chapter, two events attended by faculty, students and staff	Golf Outing (2 faculty, 6 students, 1 staff) Bowling Extravaganza (8 faculty, 20 students, 1 staff) Laser Tag (2 faculty, 9 students, 1 staff)

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	B-Goals	3	Promote the scholarly and creative achievements of faculty, students, and staff	Increase faculty and student research activity	Encouraged faculty to invite both undergraduate and graduate students to collaborate with them on research and independent study projects.	4 graduate, 6 undergraduate projects involving a total of nine students. All projects lead to presentations; most also resulted in publications.
				Increase visibility of faculty and student achievements	Improved use of hallways  Improved use of website	All bulletin boards and display cases given major overhaul and are updated on a 1-3 week cycle.  Short articles are placed on CS home page to highlight faculty and student achievements as they occur.

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	B-Goals	4	Advance economic development and the quality of life in Fort Wayne and the surrounding region	Play a role of resource and technical leadership	<p>Continued SPICE program for talented middle and high school students</p> <p>Middle School Career Day</p> <p>Engaged in consulting activity</p>	<p>20 and 8 in 2006; 12 and 0 in 2007 (Udoh)</p> <p>Gave presentations to 16 groups of middle school students in each of 2006 and 2007 (Sedlmeyer, Parker)</p> <p>Served as consultant for Raytheon R&amp;D project (Sedlmeyer)</p> <p>Actively pursuing projects with several companies through office of Community Engagement and CIID (Kim, Liu, Sedlmeyer, Stanchev, Yoo). Some proposals should come to fruition during 2008.</p>

Unit	Section	No.	University Strategic Goals	Department Goals	List of 2007 Activities and Accomplishments	Bottom Line Metrics (Show at least 2 yrs' of data)
	B-Goals	5	Pursue the continuous improvement of university operations	None	None	

**Scholarly/Creative Activity Performed, Published, or Presented  
During Calendar Year 2007**

Unit	Section	No.	Bibliography of faculty publications, performances, shows, etc.
	C-Research	1	See Ibidx.

Unit	Section	No.	Listing of grants/contracts awarded in 2007
	C-Research	3	<p>Liu, Remnant Trust Curriculum Development Award, \$500.</p> <p>Liu, Purdue Research Foundation (PRF) International Travel Grant, \$1000.00.</p> <p>Liu, Indiana University Overseas Conference Fund Grant, \$750.00.</p> <p>Liu, IPFW Overseas Conference Fund Grant, \$400.00.</p> <p>Sedlmeyer, Raytheon Community Involvement Grant, "Enabling a Capstone Experience for Computing Majors," \$5,000.</p> <p>Sedlmeyer, Raytheon Community Involvement Grant, "Using the RoboCup Competition to Enhance Engineering and Computer Science Education at IPFW," \$9,900.</p> <p>Yoo, 2008 IPFW Summer Faculty Grant for Research, \$8,000.</p>

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Unit	Section	No.	Bibliography of notable student accomplishments
	C- Research	4	<p>Joshua Elwood presented “A Virtual Campus: Multi-user Online Social Space” at the Butler Undergraduate Research Conference. His paper was also published in Proceedings of the 19th Annual Undergraduate Research Conference, Butler University, pp. 45, 2007.</p> <p>Joseph Kiszka’s project, A 3D Google Sketch-Up Model of the IPFW Campus, was submitted to the Build Your Campus in 3D Competition sponsored by Google and was selected as one of seven winners of the competition.</p> <p>Michael Mattax and Taylor Venable presented, “A Software Tool for Progressive Formalization of Domain Knowledge,” at the IPFW Student Research and Creative Endeavor Symposium and at the Purdue Calumet Undergraduate Research Competition. At Purdue Calumet, they were awarded 2nd place.</p> <p>John Bryan, presented “Heatbug Rules: Representing Agents Using XML and Jess” at the 18th Midwest Artificial Intelligence and Cognitive Systems Conference. His paper was also published in the conference proceedings.</p>

**Community Involvement/Economic Development/Engagement Activities  
For Calendar Year 2007**

<b>Unit</b>	<b>Section</b>	<b>No.</b>	<b>Category</b>	<b>Community Partner</b>	<b>Activity</b>	<b>Metrics/Impact</b>
	D-Community	1	Ongoing Partnerships	Raytheon Network Centric Systems	As consultant, served as System Architect for the Cognitive Capabilities IR&D project aimed at improving performance of MANET. (Sedlmeyer)	

<b>Unit</b>	<b>Section</b>	<b>No.</b>	<b>Category</b>	<b>Community Partner</b>	<b>Activity</b>	<b>Metrics/Impact</b>
	D-Community	3	Faculty Civic Involvement	Rotary Club of Fort Wayne	International Youth Exchange Committee (Erbach)	
				Anthony Wayne Philatelic Society	Executive Committee (Erbach)	

Unit	Section	No.	Category	Community Partner	Activity	Metrics/Impact
	D-Community	4	Academic Organizations	Indiana University	<i>Bring IT On!</i> Workshop Co-organizer (Toscos)	Nationally recognized effort to recruit underrepresented groups into computing disciplines. IPFW participated (Sedlmeyer and three students) and created a presentation suitable for middle- and high-school audiences.
				Indiana University Women in Science Research Competition	Judge (Toscos)	
				2007 FIRST Lego League (FLL) Indiana Championship Tournament	Judge (Liu, Toscos)	
				Future Cities	Workshop presenter (Sedlmeyer, 2 times)	
				Mobile Learning Technologies and Applications (MoLTA 2007)	Conference Program Committee (Erbach)	
				Journal of Informatics Education and Research	Associate editor (Erbach)	
				Assoc. Info. Sys. SIG on CS Education (IAIM)	Executive Committee (Erbach)	
				PACIS 2007 (Pacific Area	Reviewer (Erbach)	

			Conference on Information Systems)		
			18 <sup>th</sup> Midwest Artificial Intelligence and Cognitive Science Conference	Conference Program Committee (Kim)	
			The KSII Transactions on Internet and Information Systems	Member of Editorial Board (Kim)	
			The International Journal of Computational Science (IJCS)	Member of Academic Review Board (Kim)	
			International Journal of Communications, Network and System Sciences (IJCNS)	Associate Editor (Liu)	
			IEEE Transactions on Vehicular Technology	Reviewer (Liu)	
			4th Mobility Conference	Reviewer (Liu)	
			2007 International Conference on Wireless Communications, Networking and Mobile Computing	Reviewer (Liu)	

Unit	Section	No.	Category	Community Partner	Activity	Metrics/Impact
	D-Community	4	Academic Organizations	IEEE 67th Vehicular Technology Conference	Reviewer (Liu)	
				Periodica Mathematica of the Janos Bolyai Mathematical Society, Analysis Section	Editor (Petruska)	
				Periodica Mathematica Hungarica.	Reviewer (Petruska)	
				13th International Conference on Parallel and Distributed Systems	Conference Program Committee (Stanchev)	
				18th Information Resource Management Association International Conference	Conference Program Committee (Stanchev)	
				Workshop on Spatio-Temporal Data Mining	Program Committee (Yoo)	
				Workshop on Spatial and Spatio-Temporal Data Mining	Program Committee (Yoo)	
				PerCom 2007	Reviewer (Toscos)	
				UbiComp 2007	Reviewer (Toscos)	
				JERIC (Journal of Educational Resources in Computing)	Reviewer (Toscos)	

## Accomplishments of Diversity Goals, Initiatives, and Metrics During Calendar Year 2007

Unit	Section	No.	Strategic Theme	Unit Goals	Accomplishment(s)	Metrics
	E-Diversity	1	Student Recruitment and Retention	???	Established RoboCup Team to aid in recruiting prospective student who might have a background or interest in robotics, e.g., as a result of participating in First Lego League or VEX.	

Unit	Section	No.	Strategic Theme	Unit Goals	Accomplishment(s)	Metrics
	E-Diversity	2	Faculty & Staff Recruitment and Retention	???	Hired Dr. Jin Yoo as Assistant Professor.	<u>Male</u> White, born in U.S.: 4 White, not born in U.S.: 3 Asian: 2 B/AfrA: 0 <u>Female</u> : 3

Unit	Section	No.	Strategic Theme	Unit Goals	Accomplishment(s)	Metrics
	E-Diversity	3	Campus Climate	???		

Unit	Section	No.	Strategic Theme	Unit Goals	Accomplishment(s)	Metrics
	E-Diversity	4	Curriculum (including requirements from accrediting agencies, if applicable)	???		

Unit	Section	No.	Strategic Theme	Unit Goals	Accomplishment(s)	Metrics
	E-Diversity	5	Community Outreach	Create outreach presentation	As a result of participation in IU's Bring IT On! Workshop, we have created a presentation titled, "Computer Science: More Than You Think!" which will be given to area middle-school and high-school audiences.	

## Goals and Objectives for Academic Year 2008-09

Unit	Section	No.	University Strategic Goals	Department Goals for 2008-09	Specific Tasks & Objectives for 2008-09	Bottom Line Targets (as compared to this year)
	F-Next Year	1	Provide innovative, relevant, and rigorous academic programs	Offer excellent instructional and educational opportunities	Prepare for 2010 ABET review.	Ensure all necessary assessment procedures are in place and data collection, analysis and feedback are being performed.  Update course binders as necessary.  Plan self-study effort.
					Complete review of Informatics Minor.	Offer one course in Spring 2009 with possible focus on Health or Social Informatics.
					Develop concentration areas for MS in ACS.	Define at least two concentration areas that take advantage of both regional needs and faculty expertise.
					Offer CS 445 in Spring 2009.	
					Offer on-line version of CS 274 in Spring 2009.	
					Continue to pursue collaboration with Engineering.	Finalize version of CS 260 that engineering majors can take.  Continue to support ECE majors in

						CS 360.  Continue to investigate EE and ECE courses that could be opened to CS majors.
					Revitalize CS 160H.	
					Adopt subset of recommendations made in program review report for BS in CS.	

<b>Unit</b>	<b>Section</b>	<b>No.</b>	<b>University Strategic Goals</b>	<b>Department Goals for 2008-09</b>	<b>Specific Tasks &amp; Objectives for 2008-09</b>	<b>Bottom Line Targets (as compared to this year)</b>
	F-Next Year	2	<b>Create an exceptional campus environment for a diverse community of learners</b>	Enable student professional growth	Utilize graduate assistants in teaching one or more CS service courses.	Hire 1-2 Graduate Teaching Assistants.
					Encourage more students to take advantage of co-op and internship opportunities.	At least 10 students participate.

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	F-Next Year	2	<b>Create an exceptional campus environment for a diverse community of learners</b>		Improve the sense of community among computing students and faculty.	Continue to sponsor quarterly (or more frequent) social outings.

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	F-Next Year	3	<b>Promote the scholarly and creative achievements of faculty, students, and staff</b>	Increase faculty and student research activity	These goals are carried over, with slight adjustments, from 2007-08	
					Increase national/international peer-reviewed publication and conference article submissions	By 200% as compared to AY 2006.
					Increase external sponsored research submissions.	By 200% as compared to AY 2006.
					Increase internal sponsored research submissions	By 300% as compared to AY 2006.
					Collaborate more with fellow faculty members in the department, sister departments and schools/colleges.	Form two or more small research groups by the end of AY 2008.

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	F-Next Year	4	<b>Advance the economic development and quality of life in Fort Wayne and the surrounding region</b>	Play a role of resource and technical leadership	Offer expertise of faculty and students through Office of Community Engagement and CIID.	Collaborate on at least three projects.
					Offer Adventures in Computing for Teens (ACT) as replacement for SPICE.	Increase participation of students to 20 and attract at least three teachers.

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	F-Next Year	5	<b>Pursue the continuous improvement of university operations</b>	Continue to communicate excellence	Increase use of University Relations to tell story of successful student efforts, faculty, alumni, staff, etc.	At least a half-dozen press releases during 2008-09.
					Continue frequent updating of material in our hallways.	Once a week.
					Update CS website weekly to include the above.	

## Resource Requests for 2008-09 and Beyond

Unit	Section	No.	Category	Item (List in priority order)	Cost and Sources of Funds	Rationale
	G-Resource Requests	1	New Position Requests	Create new Assistant Professor position.	\$70-75K.	Tammy Toscos has passed her qualifying exams and is now engaged in her dissertation. When she finishes, likely by summer 2009, the Department should be prepared to offer her a tenure-track Assistant Professor position.

Unit	Section	No.	Category	Item (List in priority order)	Cost and Sources of Funds	Rationale
	G-Resource Requests	2	Equipment Requests	Upgrade labs	42 workstations in ET 109 and ET 111. External funding.	May have to invest in memory upgrades to run Windows Vista and next generation program development environments.
				Color laser printer for CS Office.	\$10K New funding.	Office printer is old and unreliable; cannot handle large PDF documents.
				Personal robot platforms	\$5K External funding.	Support recruitment initiative by introducing robotics into the curriculum, i.e., new approach to teaching CS160H using robots.
				Router/Switch for projects labs	\$3-5K. External funding.	Current switch cannot support number of servers and other

						equipment now utilized in lab.
				RFID equipment	\$5-10K. External funding	Support research in networking, data mining, and visualization.

Unit	Section	No.	Category	Item (List in priority order)	Cost and Sources of Funds	Rationale
	G-Resource Requests	3	Space/Remodeling Requests	None		

Unit	Section	No.	Category	Item (List in priority order)	Cost and Sources of Funds	Rationale
	G-Resource Requests	4	Other new funding requests, including, lab materials, S&E, etc.	Two R.A. positions	\$8K * 2 = \$16K (plus tuition)	Granting more R.A. positions will be an effective approach to enhance the quality of education for our majors, to recruit higher quality students, and to enhance their career development through research and teaching, especially for the students who are planning to develop their career at academic institutions.