

Department of Computer Graphics Technology
Strategic Plan
2003-2007

BACKGROUND AND HISTORY

The Department of Computer Graphics Technology has its origins as a service program within Civil Engineering focusing on teaching engineering graphics and descriptive geometry to engineering majors. Early professionals in engineering graphics, such as Warren Luzadder and Howard Porsch, became well known as national leaders by promoting the scholarship of engineering graphics through the American Society for Engineering Education (ASEE) and the Engineering Design Graphics Division (EDGD). This included national recognition through the publishing of a widely adopted engineering graphics textbook authored by Professor Warren J. Luzadder in the 1940's. During the 1960's, engineering graphics expanded its mission by developing a successful Associate of Science (A.S.) degree program in industrial illustration in response to expressed needs from the automotive industry.

As Bachelor of Science (B.S.) degree programs in engineering began to shift toward a theoretical and scientifically specialized curriculum during the 1960's and 70's, a parallel need was established at Purdue University for the role of a School of Technology to address the on-going practical needs of area and regional industries through engineering technology programs. When the Purdue University School of Technology moved into Knoy Hall in the early 1980's, the Engineering Graphics faculty established a new Department of Technical Graphics to better accommodate continued curriculum development in engineering graphics, applied technical graphics and its integration into computer graphics. As a result, a B.S. degree program in Technical Graphics, with engineering and computer graphics at the core, was developed and approved with the first graduates in 1993.

Following the evolution of applied computer graphics technology as a powerful communications medium, the Department expanded its mission to prepare highly skilled, and sought after, graduates with the capacity to apply their problem solving skills across a growing and diverse number of industries and businesses. To reflect this expanded mission, in 1997, the department changed its name to the Department of Computer Graphics Technology (CGT). CGT graduates are now employed in manufacturing, construction, graphic programming, gaming, broadcast video, film, interactive multimedia, graphic design, training, forensic animation, medical imaging, and training. The CGT Department is currently shifting its focus to increasing the rigor of math, science, and computer programming to better prepare future 'problem solving' oriented graduates.

Purdue's reputation as a premiere institution in engineering, science, and technology, is well established both nationally and internationally. In a complimentary fashion, the

Department of Computer Graphics Technology is also establishing a respected reputation through the multidisciplinary application of computer graphics. Contemporary CGT faculty members continue to be recognized as scholars, experts, and leaders in the evolution and dissemination of applied computer graphics. As a result, the Department has been able to attract and recruit diverse, talented and professionally motivated faculty from around the country to expand its mission in becoming a pre-eminent program in preparing practitioners of applied computer graphics.

MISSION STATEMENT

The mission of the Department of Computer Graphics Technology at Purdue University is to prepare practitioners, managers, and leaders in the field of applied computer graphics through learning, discovery, and engagement.

VISION STATEMENT

The Department of Computer Graphics Technology at Purdue University will be a preeminent world-class program in applied computer graphics. As a world leader, the Department of Computer Graphics Technology will be recognized for its excellence by:

- Creating and delivering degree programs in applied computer graphics through learning, discovery, and engagement that draw worldwide attention to their outcomes;
- Designing programs for learners of exceptionally high intellectual and creative accomplishment;
- Forging effective interdisciplinary and collaborative partnerships in the university community that create models for such endeavors;
- Partnering with public and private enterprise in the state, nation and abroad as a model for serving common objectives; and
- Recruiting, enhancing, and retaining a world-renowned faculty and staff.

CORE VALUES

The following are core values held by the faculty and staff of the Department of Computer Graphics Technology:

- Providing exceptional quality technology-intensive education that meets the high academic standards of Purdue University as well as the specific needs of the nation's workforce.
- Actively engaging in applied research and development projects with government, business, and industry.
- Taking existing and cutting edge technologies and applying them to the solution of problems.
- Exploring and discovering new applications of existing and emerging technologies in a scholarly manner.

- Providing students with exceptional quality, unique experiences, and highly interactive (student-to-professor) technology-intensive education.
- Undertaking engagement and development projects that help to grow the economy of Indiana and provide avenues for applied research projects.
- Becoming recognized nationally and internationally as a leading institution in the field of applied computer graphics.
- Integrating real-world problems and solutions within course projects.
- Working with industry to integrate cutting edge technologies into the solution of problems.
- Collaborating with other institutions of higher learning on applied research and educational projects.
- Collaborating with colleagues, both within the College of Technology and across the University, as equal partners in ways that capitalize on each other's unique strengths.
- Integrating graduate and undergraduate students within applied research projects.
- Providing students with learning-centered experiences that prepare them to be innovative.
- Engaging with the community, business, and industry partners served by the department.
- Providing an educational environment characterized by equal access, inclusiveness, and cultural diversity.
- Proactively updating the CGT Department curricula to meet the needs of student, Indiana, and the nation.

PEER INSTITUTIONS

For planning purposes, Peer Programs were selected from universities having a College or School of Technology, granting the doctoral degree and having a Computer Graphics related baccalaureate degree programs accreditation by the National Association of Industrial Technology. The Peer Programs are:

- Arizona State University: Graphic Information Technology
- Bowling Green State University: Visual Communication Technology
- East Carolina University: Architectural/Mechanical Design Technology

DEPARTMENTAL PRIORITIES

Five strategic priorities have been identified for the Department of Computer Graphics Technology based on the School of Technology Strategic Plan (2003-07). The priorities are as follows:

1. Recruit and retain outstanding faculty and staff to support Computer Graphics Technology learning, discovery, and engagement.
2. Continue to develop effective and relevant undergraduate curricula to prepare graduates for initial and career-long success in areas of industry need that enables

learners to acquire core competencies in critical thinking, global communication skills, information literacy, visual information technology, business practices, and research methods.

3. Maintain and expand a program to enhance CGT faculty performance in learning, discovery, and engagement.
4. Maintain and expand a program for alumni and CGT patron development.
5. Maintain and expand Computer Graphics Technology Graduate Education.

DEPARTMENTAL GOALS

Priority 1 Recruit and retain outstanding faculty and staff to support Computer Graphics Technology learning, discovery, and engagement.

Goal 1.1 Enhance learning, discovery, and engagement by increasing the number of CGT faculty members thereby decreasing reliance on graduate teaching assistants for undergraduate instruction.

Metric 1.1: Number of CGT faculty members.

1.1 CGT Full Time Faculty FTE

Base/Target	FTE West Lafayette	FTE Kokomo/ Lafayette	FTE New Albany	FTE Richmond	FTE South Bend/Elkhart
2001-2002	18	1	2	1	1
2002-2003	18.1	1	2	1	1
2003-2004	14.7	1	2	1	1
2004-2005	15.7	1	2	1	1
2005-2006	18.7	1	2	1	1
2006-2007	19.7	1	3	1	2

Note 1.1: FTE includes Continuing Lecturer
FTE excludes Department Head

Goal 1.2 Recruit and retain highly qualified Computer Graphics Technology faculty and staff through competitive salaries and benefits.

Metric 1.2: Benchmark comparison of salary and compensation with peer institutions or departments.

1.2a Average CGT Tenure Track Salary by Rank- WL

Base/Target	Assistant Professor FTE	Assistant Professor Salary	Associate Professor FTE	Associate Professor Salary	Professor FTE	Professor Salary
2000-2001	5	\$52,375	6	\$56,908	3	\$67,715
2001-2002	9	\$54,130	6	\$59,358	3	\$70,998
2002-2003	7	\$54,846	7	\$60,843	3.1	\$73,676
2003-2004	6.5	\$57,430	4.6	\$59,492	2.6	\$74,478
2004-2005	5.5	\$54,292	6.6	\$62,374	2.6	\$75,369
2005-2006	7.5	\$55,649	7.6	\$63,933	2.6	\$77,253

Note 1.2a: Excludes Department Head

1.2b Faculty Salary Baseline (2003-2004)

Rank	Purdue SoT	Purdue	SoT Peer Institutions
Assistant Professor	\$53,200	\$56,010	\$56,849
Associate Professor	\$59,307	\$64,226	\$64,095
Full Professor	\$77,047	\$92,584	\$95,465

Note 1.2b: 2003-07 School of Technology Strategic Plan (p. 8)

Goal 1.3 Attain a faculty and staff representative of the diversity of our society.

Metric 1.3: Diversity statistics of faculty and staff compared to the average US population.

Target 1.3: Approach the SoT and Purdue University percentages for Ethnicity/Gender.

1.3 CGT Faculty Diversity Baselines (2003-2004)-WL

Ethnicity/Gender	CGT WL	CGT Statewide	SoT	Purdue	Indiana
African American	.00%	.00%	.00%	1.87%	8.40%
American Indian	.00%	.00%	.00%	.35%	.30%
Asian American	.00%	.00%	2.85%	9.73%	1.00%
Hispanic	4.54%	.00%	1.42%	1.64%	3.50%
Total Ethnic	4.54%	.00%	4.27%	13.59%	13.20%
Female	18.18%	40.00%	10.00%	22.33%	51.00%

Priority 2

Continue to develop effective and relevant undergraduate curricula to prepare graduates for initial and career-long success in areas of industry need that enables learners to acquire core competencies in critical thinking, global communication skills, information literacy, visual information technology, business practices, and research methods.

- Goal 2.1 Seek and maintain Accreditation.
- Goal 2.1.1 Seek accreditation for the BS degree program in Computer Graphics Technology at West Lafayette.
- Metric 2.1.1 Satisfactory completion of NAIT accreditation process by fall 2007.^{2.1}
- Goal 2.1.2 Maintain NAIT accreditation for the BS degree program in Computer Graphics Technology at West Lafayette.
- Metric 2.1 2 Satisfactory re-accreditation. (Generally 4-years after initial accreditation)

2.1 Program Accreditation Plan

Base/Target	Activity
2004-2005	Conduct accreditation preliminaries
2005-2006	Develop a self-study report for compliance with standards
2006-2007	Submit program review for evaluation and hold campus visit. Acquire Accreditation: Full
2007-2008	Maintain Accreditation

Note 2.1: The process of accreditation includes customarily accepted metrics such as graduating senior satisfaction, alumni satisfaction, employer satisfaction, industrial advisory review, self-study, etc; ergo, many “sub-metrics” are included in this metric.

- Goal 2.2 Provide learning experiences in service to the Purdue University community in areas of CGT faculty expertise.
- Metric 2.2 Service course demographics.

2.2 CGT Services Courses-West Lafayette

Base/Target	Fall Sections Lectures	Fall Sections Lab	Fall Head count	Spring Sections Lectures	Spring Sections Lab	Spring Headcount	Total Headcount
2002-2003	7	61	1170	7	46	851	2021
2003-2004	6	57	1116	7	51	862	1978
2004-2005	7	59	1153	8	50	865	1980
2005-2006	7	60	1160	8	50	865	1980

- Goal 2.3 Maintain an enrollment management system to insure recruitment, retention, and graduation of highly qualified CGT undergraduate students.

Metric 2.3a Number of students admitted, retained, and graduated yearly.

Metric 2.3b Student SAT profile.

Metric 2.3c Graduation Rates

Metric 2.3d Major course sections and headcount

2.3.1 CGT Enrollment Management Profile-WL

Base/Target	Average SAT Score	Number of new freshman	Fall enrollment	Fall CODO	Spring enrollment	Spring CODO	Statewide
2000-2001	1240	70	514	25	473	28	170
2001-2002	1180	79	503	28	466	40	166
2002-2003	1180	96	521	19	480	22	140
2003-2004	1184	82	467	35	451	33	108
2004-2005	1180	88	476	25	447	25	135
2005-2006	1180	90	470	25	445	25	140

2.3.2 CGT Statewide Enrollment Head Count (fall)

Base/Target	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Anderson/Muncie	7	4	0	0	0	0
Columbus	10	7	0	0	0	0
Kokomo/Lafayette	39	40	35	36	37	38
New Albany	42	47	43	26	39	40
Richmond	28	28	22	15	28	28
South Bend/Elkhart	44	40	40	31	31	32
Total	170	166	140	108	135	138

2.3.3 CGT Statewide Enrollment Credit Hours (fall)

Base/Target	2002-03	2003-04	2004-05	2005-06
Anderson/Muncie	12	28	0	0
Columbus	12	0	0	0
Kokomo/Lafayette	266	426	440	460
New Albany	430	267	436	458
Richmond	161	150	258	270
South Bend/Elkhart	402	352	336	352
Total	1283	1223	1470	1540

2.3.4 CGT Graduation Profile

Base/Target	Total Number CGT Graduates	AS Graduated Statewide	AS Graduated WL	BS Graduated WL
2000-2001	146	20	41	112
2001-2002	143	42	12	126
2002-2003	144	21	9	114
2003-2004	145	21	14	110
2004-2005	130	22	12	118

2.3.5 CGT Graduation Detail

Base/Target	Fall 2003	Spring 2004	Summer 2004	2003-2004 Total
AS Anderson/Muncie	0	1	0	1
AS Kokomo	2	2	0	4
AS New Albany	0	7	0	7
AS Richmond	1	2	0	3
AS South Bend	0	5	0	5
AS West Lafayette	5	9	0	14
Total	8	25	0	33
BS West Lafayette	29	75	4	108

2.3.6 CGT Major Course Sections and Head Count WL

Base/Target	Fall Sections Lectures	Fall Sections Lab	Fall Head count	Spring Sections Lectures	Spring Sections Lab	Spring Headcount	Total Headcount
2002-2003	27	72	1421	29	67	1202	2623
2003-2004	27	56	1119	27	48	959	2078
2004-2005	29	50	1115	27	47	940	2055
2005-2006	29	50	1115				

Priority 3 Maintain and expand a program to enhance CGT faculty performance in learning, engagement, and discovery.

Goal 3.1 Effectively engage Computer Graphics Technology Industrial Partners.

Goal 3.1.1 Maintain and expand the Industrial Advisory Board (IAB) reflecting the broad constituents of CGT and hold at least one meeting per academic year.

Metric 3.1.1 Number of IAB members, faculty, and administrators attending meetings per year.

Target 3.1.1 Expand IAB to have four areas of CGT represented with 1 to 3 members from each area.

3.1.1 Industrial Advisory Board-WL

Baseline/Target	Companies Represented	No of Reps	Program Area
2003-2004	Boeing (Seattle)	1	CAD
	General Motors	2	CAD
	Robert Bosch	1	CAD
	Rolls-Royce	2	CAD
	IBM	1	CAD
	Electronic Arts	1	IMD
Total		8	
2004-2007	Add representative companies	12	4 areas covered

Goal 3.1.2 Maintain and improve contact with CGT constituents by conducting industrial visits.

Target: Increase number of industrial visits proportional to the increased number of faculty in CGT.

Metric 3.1.2: Number of industrial visits conducted by faculty.

3.1.2 CGT Faculty Industrial Visits

Base/Target	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Kokomo/Lafayette	2	4	4	6	8
New Albany		6	20	20	20
Richmond	2	25	10	10	10
South Bend/Elkhart		12	12	12	12
West Lafayette	8	15	13	15	15

Goal 3.1.3 Conduct workshops and seminars designed to meet the needs of industrial partners.

Metric 3.1.3 Number of workshops and seminars offered for industrial partners.

Baseline: 2003-2004 None.

Goal 3.2 Effectively engage Computer Graphics Technology Educational Partners.

Goal 3.2.1 Engage the K12 and community college communities related to Computer Graphics Technology through faculty visitations.

Metric 3.2.1 Number of K12 and university or community college educational visits.

3.2.1 CGT Faculty K12 and Community College Educational Visits

Base/Target	2002-2003	2003-2004	2004-2005	2005-2006
Kokomo	1	1	1	
New Albany		12	20	
Richmond	3	3	3	
South Bend		13		
West Lafayette	3	10	3	

Goal 3.2.2 Engage the K12 and community college communities by conducting educational workshops/summer camps.

Metric 3.2.2 Number of K12 and community college workshops or activities.

Baseline: CGT Summer Camp (1 per academic year)

3.2.2 CGT Summer Camp-WL

Base/Target	Number of Students Attending	Number of School Represented	Number of Indiana Counties Represented	Number of States Represented
2001-2002	60	48	17	10
2002-2003	80	51	18	10
2003-2004	31	24	12	7
2004-2005	45	30	15	8

Goal 3.3 Effectively disseminate the results of learning, engagement, and discovery.

Goal 3.3.1 Increase the number of CGT faculty articles accepted for publication proportional to the increased number of CGT faculty members.

Metric 3.3.1 Number of articles accepted for publication each year.

Goal 3.3.2 Increase the number of CGT faculty conference presentations (article included/not included in proceedings) proportional to the increased number of CGT faculty members.

Metric 3.3.2: Total number of conference presentations made each year.

3.3 CGT Faculty Scholarly Activities-WL

Base/Target	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005 Target
National Textbooks	6	6	9	9	9
Refereed journal articles	15	11	2	17	17
Refereed conference proceedings	27		-	19	9
Reviewed conference proceedings		29	24	8	8
Published abstracts			2	1	1
Published reviews				3	3
Professional presentations	7	2	9	16	16
Editorships				26	26
Reviews				14	14
Other Scholarly Publications			11		

Goal 3.4 Establish and maintain a program of CGT faculty funded learning, engagement, and discovery activities

Target: Increase the funding obtained through external and internal sources by CGT faculty to \$500,000 per year.

- Metric 3.4a: Number of external grants written by and dollar amount awarded to CGT faculty members.
- Metric 3.4b: Number of internal grants written by and dollar amount awarded to CGT faculty members.
- Metric 3.4c: Number of gifts in-kind and dollar amount awarded to CGT faculty.

3.4a CGT Faculty Externally Funded Projects

Base/Target	Number Submitted	Amount Requested	Number Funded	Amount Funded
2000-2001	2	\$46,786	2	\$56,686
2001-2002	3	\$188,254	0	0
2002-2003	9	\$471,241	4	\$92,416
2003-2004	11	\$822,691	5	\$122,021
2004-2005				\$150,00
2005-2006				\$200,000
2006-2007				\$250,000

3.4b CGT Faculty Internally Funded Projects

Base/Target	Number Submitted	Amount Requested	Number Funded	Amount Funded
2003-2004	30	\$684,460	15	\$264,044
2004-2005				\$250,000
2005-2006				\$250,000
2006-2007				\$250,000

3.4c CGT Faculty Gifts in-kind

Base/Target	Number of Vendors	Amount of Gifts
2002-2003	5	\$4,794,750
2003-2004	3	\$16,808,250
2004-2005		\$5,000,000

Priority 4 Maintain and expand a program for alumni and CGT patron development.

Goals 4.1 Increase the amount and quality of alumni communications.

Metric 4.1: Variety and quality of alumni communications.

Baseline: Web site, Alumni newsletter, etc.

Goals 4.2 Increase the frequency of alumni activities.

Baseline: List activities here?

Metric 4.2: Variety, quality, and attendance at alumni activities.

Goals 4.3 Increase the number of patrons and the amount of gifting.

Metric 4.3: Amount of gifting.

4.3CGT Patron Gifts

Base/Target	Number of Patrons	Amount of Gifts
2003-2004	72	PRF \$5,730
	4	Misc \$2,900
<i>Total</i>	76	\$8,630
2004-2005		\$9,500
2005-2006		\$11,000
2006-2007		\$12,000

Priority 5 Maintain and expand Computer Graphics Technology Graduate Education.

Goal 5.1 Revise existing CGT graduate courses and create new CGT graduate courses in state of the art applied areas of computer graphics technology.

Metric 5.1a: Number of revised graduate courses.

Metric 5.1b: Number of courses approved by the Graduate School.

Baseline: 4 permanent courses offered as necessary (1 required)
15 unique temporary courses as necessary

Goal 5.2 Recruit and educate highly qualified CGT graduate students to pursue the MS and PhD within the department's capability to provide personalized advisement for world-class graduate education.

Metric 5.2a: Number of MS and PhD students recruited.

Metric 5.2b: Number of graduate students graduating per year.

Metric 5.2c: GRE profile of graduate students.

5.2a CGT Graduate Student Head Count

Base/Target	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
	24	38	49	48	40	40

5.2a CGT Graduate Student Population

Base/Target	MS Enrolled	MS Graduated	PhD Enrolled	PhD Graduated
2002-2003	24	8	0	0
2003-2004	44	11	0	0
2004-2005	42	12	4	0
2005-2006	40	12	6	0

5.2c CGT Graduate Student Average GRE Profile 2003-2004

Base/Target	CGT	SOT	PU
Verbal	502.73	476.21	523
Quantitative	673.18	642.89	686
Analytical New	3.5	4.08	4
Analytical Old	661.25	604.78	662
Total V+Q	1175.91	119.16	n/a
Target V+Q			
2004-2005	1200		
2005-2006	1225		
2006-2007	1250		

Goal 5.3 Increase the number of RA's in CGT to 5 through funded grants.

Metric 5.3: Number of RA's funded by grants.

5.3 Number of CGT Graduate Assistants Funded by Grants

Base/Target	Number of RA's
2003-2004	2
2004-2005	2
2005-2006	3
2006-2007	4
2007-2008	5

Note 5.3 Headcount

Goal 5.4 Place 100% of Computer Graphics Technology MS and PhD graduates within 6 months of graduation.

Metric 5.4: Number of graduates placed.

5.4 CGT Graduate Student Placement

Base/Target	Additional Education	Business	Education/ Training	Government
2003-2004				
2004-2005	collecting	needed	data	
2005-2006				
2006-2007				

Goal 5.5 Provide funding for one graduate fellowship

Metric 5.5a: Number of fellowships.

5.5 CGT Graduate Fellows

Base/Target	Total
2003-2004	0
2004-2005	0
2005-2006	1
2006-2007	1

Goal 5.6 Recruit highly qualified CGT faculty with credentials appropriate to qualify for the Purdue University graduate faculty.

Metric 5.6: Number of faculty recruited.

Target 2004-2005: 3 additional faculty members
2005-2006: 2 additional faculty members

Goal 5.7 Mentor current and new CGT faculty to establish a cadre with P* and P graduate faculty status.

Metric 5.7: Number of faculty advanced to P*, P, and M status.

5.7 CGT Graduate Faculty Status- WL

Base/Target	Total	P	P*	M	M*	G
2003-2004	21	1	1	7	7	5
2004-2005	19	1	1	7	8	2
2005-2006	22	1	2	8	9	2
2006-2007	23	2	3	9	7	2

Goal 5.8 Revise the existing CGT graduate program and establish additional tracks (course sequences, certificates, areas of specialization, options, etc.) within the context of the mission and goals of SOT graduate education.

Metric 5.8: Number and types of programs develop and implemented.

Baseline: Pre 2004-2005 Graduate Program.