Georgia Institute of Technology

Report on Grade Inflation

Definitions, Interpretations, Data: Grading and Grade Inflation at Georgia Tech

Prepared by the Student Academic and Financial Affairs Committee
of the Academic Senate, Spring 2003

Chapter 1

Introduction

Scope

The Student Academic and Financial Affairs Committee has been charged by the Executive Board with conducting an investigation of grade inflation at Georgia Tech. The Committee is supported by the Office of Institutional Research and Planning and is examining data from similar studies carried out at peer institutions and other universities, to ascertain the relevance and applicability of those studies to the situation at Georgia Tech. The Committee is also collecting and examining data from the Institute itself. If it is determined that grade inflation is indeed a problem at Georgia Tech, the Committee will suggest potential remedies.

Definitions

For the purposes of this investigation, the Committee is using a definition taken from an article by L. Goldman in the *Journal of General Education,* which describes grade inflation as "[t]he upward shift in the grade point average (GPA) of students over an extended period of time without a corresponding increase in student achievement."

Peer institutions are those institutions "most like Georgia Tech relative to the student body, the faculty, degree programs offered, the nature and scope of research activities, or any of a number of other factors. Peer institutions generally have a similar mission, and have significant similarities based on quality of students and faculty, array of degrees and programs, similarity of research mission, etc." according to the "Benchmarking and Management Review" conducted on behalf of the University System of Georgia in 2000.

Grading Definitions of Peer Institutions

Below is the summary of the grading definitions at some of our peer institutions. Additional information can be found in Chapter 3.

	A	B	C	D
Georgia Tech	Excellent	Good	Satisfactory	Passing
California Institute of Technology	Excellent	Good	Satisfactory	Poor
Carnegie Mellon	Excellent	Good	Satisfactory	Passing
Cornell University	Excellent to very good: comprehensive knowledge of subject; marked perception and originality.	Good: Moderately broad knowledge of subject; noticeable perception and originality	Satisfactory: reasonable know-ledge of subject; some perception and/or originality	Marginal: minimum of knowledge and under-standing of subject; limited perception and originality.
North Carolina State University	Excellent	Good	Satisfactory	Marginal
Texas A&M University	Excellent	Good	Satisfactory	Passing
U. of California - Berkeley	Excellent	Good	Fair	Barely Passing
U. of California - Los Angeles	A+: Extraordinary A: Superior	Good	Fair	Poor
U. of Illinois - Champaign / Urbana	Excellent	Good	Fair	Poor
U. of Minnesota - Twin Cities	Outstanding relative to the level necessary to meet course requirements	Significantly above the level necessary to meet course requirements	Meets course requirements in every respect	Worthy of credit even though it fails fully to meet the course requirements
University of Texas- Austin	Excellent	Above average	Good	Pass
Virginia Tech	Excellent	Good	Fair	Barely Passing

Grading Definitions at Other Institutions

	A	B	C	D
University of Arizona	Achievement of distinction	High level of achievement	Fair level of achievement	Low level of achievement
University of North Carolina - Chapel Hill	Mastery of content at the highest level of attainment. Shows outstanding promise.	Strong performance demonstrating a high level of attainment. Shows solid promise.	Totally acceptable performance, showing adequate level of attainment	Marginal performance demonstrating a minimal passing level of attainment.
Louisiana State University	Distinguished mastery	Good mastery	Acceptable mastery	Minimally acceptable
Hood College	General excellence: displays initiative, independence, and often originality	Unquestioned grasp of fundamentals, significance, ability to use them effectively	Fairly accurate knowledge of fundamentals and able to apply them reasonably well	Work of inferior quality yet deserving of credit

An In-depth Look at Grading Definitions at Other Institutions

Massachusetts Institute of Technology

Freshman Grade Reporting:

During the freshman year, while you will be graded on all your assignments and tests, there is a special grade reporting system.

In your first semester and Independent Activities Period:

- Your grades will be recorded internally as P, D, and F, where D and F are non-passing grades.
- On your official MIT transcript, P grades will be reported, but there will be no record of a subject that was not passed.

In the second semester of freshman year:

- A, B, C grades replace the P grade internally and on the transcript.
- D and F grades continue to be noted only internally.

Beginning in the sophomore year:

- A-F grades are reported internally and on the transcript.
- The passing level is D, not C.

The freshman grade reporting system is intended to ease your transition to college-level study. The C-level pass ensures credit for competence, not marginal performance, in the crucial foundation subjects of your first year.
In the first semester and IAP most subjects report "hidden" A-F grades, and you receive a copy of these from your advisor. MIT keeps no official record of the hidden grades.

Ongoing Evaluation for Freshmen

As you move through each semester of your freshman year, you will receive grades on papers, problem sets, and quizzes that will give you an idea of your learning progress. Additionally, if you are performing at a non-passing level in a particular class, you and your advisor will receive a "fifth-week flag" from the instructor, alerting you of your status and requesting an interview. Meeting face to face, you and your instructor can develop ways to improve your performance.

Other Grading Policies

For official information on grading policies and definitions, check the MIT Bulletin. MIT has some unique features worth mentioning here:

- Both the cumulative and term GPA's are based on a 5-point scale (not 4 as at most schools). In your second semester you will have a term GPA based only on your passing grades (A-C) which will also be counted in your cumulative GPA.
- MIT's official policy is that your performance in subjects should be graded based on your mastery of the material, not relative to the performance of other students. No grading on the curve.
- There are no "honors" distinctions made at MIT. That is, no dean's list, no honors subjects, and no cum laude designations at graduation. There are several honorary societies at MIT; the most notable being Phi Beta Kappa.
- MIT uses plus-minus grade modifiers internally. Plus and minus grades will show up on your internal grade report only; they do not affect your GPA, nor do they appear on your transcript.
- Some subjects are graded on a Pass/D/Fail basis, including most seminars.
- In your sophomore year you will be in the first class to have the option of designating one subject as Exploratory in each of your fall and spring terms. In your Exploratory subject you may elect not to accept the grade and credit awarded after the end of the term. You will be able to designate any subject at MIT, including an Institute or

departmental requirement, as Exploratory. Exploratory subjects will be offered under a five-year experiment authorized by the Committee on the Undergraduate Program.
- Juniors and seniors can elect a total of two subjects to be graded Pass/D/Fail as long as they're not needed for a departmental, Institute, or minor requirement.

Hidden Grades

Although freshmen are under special grade reporting systems, instructors submit regular letter grades to the Registrar in both terms and IAP. Freshman "hidden" grades include both A, B, C grades for first semester and IAP, which are converted to P's, and DN, FN, ON, OXN grades for first semester, IAP, and second semester, which do not appear on the external transcript.

At the end of first semester and IAP, A, B, and C grades are communicated to students and advisors only in the form of two-part unofficial reports. These reports are retained in each student's advising folder.

Freshman non-passing grades (D, F, O, OX) appear on the internal grade report (they are followed by an N for No-Record) and on the two-part unofficial reports.
As approved by the Faculty, the Guidelines for the Use of Hidden Grades are as follows:

- Hidden grades exist to help student self-evaluation and academic advising at MIT.
- First-year hidden grades may not be used to prevent students from enrolling in an academic department.
- MIT recognizes a student's right under Federal law to have access to information maintained about him or her, but MIT will not send copies of hidden grades to third parties. It is not consistent with the purpose of hidden grades for faculty or staff members to release them except to the student, or to take initiatives such as suggesting that students provide first-year hidden grades to third parties.
- No MIT office or individual should provide information directly to a graduate school, company, or any other third party concerning assigned hidden grades – by phone, in writing, or by transmitting the unofficial report of the student's hidden grades. If the student requests it, a letter, addressed to the student, will be prepared by the department that gave the subject, informing him or her of the assigned grade that is in the file. (The one exception to the above is that students applying to medical school may request that their letters be sent to the Preprofessional Advising Office for forwarding to medical schools they designate.) It is hoped that students' use of hidden grades for other than intended purposes can be reduced to the lowest level possible.
- The Registrar's Office will retain a record of letter grades assigned to freshmen. This record may be used for educational research purposes only under the authorization of the Dean for Undergraduate Education.

Hidden grades are used within MIT for advising functions; that is, helping students make academic choices. It is inappropriate to use hidden grades for "evaluating" students; that is, making comparisons leading to choices among students, such as selections for student employment or UROP.

According to the Rules and Regulations of the Faculty, academic departments should keep the record of hidden letter grades assigned to freshmen for five years; they should then destroy the record. The Dean for Undergraduate Education is responsible for ensuring that hidden grades are used only as described above.

Pennsylvania State University

For undergraduates and graduates the grades of A, A-, B+, B, B-, C+, C, D, and F indicate a graduation in quality from Excellent to Failure and are assigned the following grade-point equivalents:

Grade	Grade-Point Equivalent
A	4
A-	3.67
B+	3.33
B	3
B-	2.67
C+	2.33
C	2
D	1
F	0

Stanford University

The following grades are used to report the quality of undergraduate student work at Stanford University:

Grade	Description	Grade Pts
A+		4.3
A		4
A-	Excellent	3.7
B+		3.3
B		3
B-	Good	2.7
C+		2.3
C		2
C-	Satisfactory	1.7
D+		1.3
D		1
D-	Minimal Pass	0.7
NP	Not Passed	0

NC	No Credit (unsatisfactory performance, 'D+' or below equivalent, in a class taken on a satisfactory/no credit basis)	
CR	Credit (student-elected satisfactory; A, B, or C equivalent	
S	No-option Satisfactory; A, B, or C equivalent	
L	Pass, letter grade to be reported	
W	Withdraw	
N	Continuing Course	
I	Incomplete	
RP	Repeated Course	
*	No course reported	
NC	The notation 'NC' represents unsatisfactory performance in courses taken on a satisfactory/no credit basis. Performance is equivalent to letter grade 'D+' or below.	
NP	The notation 'NP' is used by instructors in courses taken for a letter grade that are not passed.	

Texas A&M University

The student's semester grade in a course shall be based upon performance and/or participation in class, exercises, and tests, laboratory work and final examination shall be determined by the department administering the course.
The basis upon which the final grade will be determined shall be determined by written from to the class during the first two weeks of a semester and during the first week of a summer term.

There are five passing grades at the undergraduate level, A, B, C, D, and S, representing varying degrees of achievement; these letters carry grade points and significance as follows:

A Excellent, 4 grade points per semester hour
B Good, 3 grade points per semester hour
C Satisfactory, 2 grade points per semester hour
D Passing, 1 grade point per semester hour
F Failing, no grade points per semester hour

There are two failing grades, F and U, indicating work of unsatisfactory quality.

University of California-Berkeley

The work of all students on the Berkeley campus is reported in terms of the following grade: A (excellent), B (good), C (fair), D (barely passing), F (failure), P (passed at a minimum level of C-), NP (not passed), S (satisfactory, passed at a minimum level of B-), U (unsatisfactory), I (work incomplete due to circumstances beyond the student's control, but passing quality), IP

(work in progress; final grade to be assigned upon completion of entire course sequence). The grades A, B, C, or D may be modified by plus or minus suffixes.

The work of all students on the Berkeley campus is reported in terms of the following grade:

Grade	Description	Grade Points
A+		4
A	Excellent	4
A-		3.7
B+		3.3
B	Good	3
B-		2.7
C+		2.3
C	Fair	2
C-		1.7
D+		1.3
D	Barely Passing	1
D-		0.7
F	Failure	0
P	Passed (achievement at grade C level or better)	
NP	Not Passed	0
I	Incomplete	0
IP	In Progress	
DR	Deferred Report	

The grades A, B, C, or D may be modified by plus or minus suffixes.

University of California-Los Angeles

The following grades are used to report the quality of undergraduate student work at UCLA: A+ Extraordinary, A Superior, B Good, C Fair, D Poor, F Fail, P Passed (achievement at grade C level or better), NP Not Passed, I Incomplete, IP In Progress, DR Deferred Report, Grades A, B, C, and D may be modified by a plus (+) or minus (-) suffix. Grades A, B, C, and P denote satisfactory progress toward the degree, but a D grade must be offset by higher grades in the same term for students to remain in good academic standing. An F grade yields no unit or course credit.

Grade points per unit are assigned by the Registrar as follows:

A+ 4.0	C- 1.7
A 4.0	D+ 1.3
A- 3.7	D 1.0
B+ 3.3	D- 0.7
B 3.0	F 0.0
B- 2.7	NP 0.0
C+ 2.3	U 0.0
C 2.0	

As indicated, a plus (+) or minus (-) suffix added to a grade raises or lowers the grade-point value, except in the case of A+, which carries the same number of grade points as the A grade. Courses in which students receive a P or S grade may count toward satisfaction of degree requirements, but these grades, as well as DR, I, IP, and NR, are disregarded in determining the grade-point average. (If an I grade is later removed and a letter grade assigned, units and grade points are included in subsequent GPAs.) NR indicates that no grade was received from the instructor.

University of Illinois-Urbana Champaign

Grading System: Faculty members are responsible for providing the University with an individual evaluation of the work of each student in their classes. Final course grades are entered on the student's permanent University record at the close of each semester, term, or session. The University of Illinois at Urbana-Champaign uses the following grading system: A = excellent; B = good; C = fair; D = poor (lowest passing grade); F = failure, including courses dropped for academic irregularities; Ab = absent from the final examination without an acceptable excuse (counts as a failure). If a student is absent from a final examination and it is clear that taking the examination could not have resulted in a passing grade for the course, a grade of F may be given instead of Ab. In addition to the above grades, instructors are authorized to assign plus and minus grades.

University of Minnesota-Twin Cities

A-Represents achievement that is outstanding relative to the level necessary to meet course requirements.
B-Represents achievement that is significantly above the level necessary to meet course requirements.
C- Represents achievement that meets the course requirements in every respect.
D- Represents achievement that is worthy of credit even though it fails fully to meet the course requirements.
S- Represents achievement that is satisfactory (equivalent to a C+ or higher and meets or exceeds course requirements in every respect). The S does not carry grade points and is not included in GPA calculations, but the credits count toward the student’s degree program if allowed by the department.
F or N- Represents failure or no credit and indicated that coursework was completed but at an achievement level unworthy of credit, or was not completed and there was no agreement between the instructor and student that the student would be awarded an I. Academic dishonesty is grounds from an F or N for the course. The F carries 0.00 grade points and is included in GPA calculations; the N does not carry grade points and is not included in GPA calculations.

University of Texas-Austin

A student's standing in academic work is expressed by grades earned on class assignments and examinations. There are five grades: *A* (excellent), *B* (above average), *C* (average), *D* (pass),

and *F* (failure). To receive credit for (complete) a course, an undergraduate student must earn a grade of at least *D.*

University of Washington-Seattle

The UW uses a numerical grading system, with certain exceptions in the schools of Dentistry, Law, and Medicine. Instructors may report grades from 4.0 to 0.7 in 0.1 increments and the grade 0.0. The number 0.0 is assigned for failing work or unofficial withdrawal. Grades in the range 0.6 to 0.1 may not be assigned. Grades reported in this range are converted by the Office of the Registrar to 0.0. Numerical grades may be considered equivalent to letter grades as follows:

A	4.0-3.9	
A-	3.8-3.5	
B+	3.4-3.2	
B	3.1-2.9	
B-	2.8-2.5	
C+	2.4-2.2	
C	2.1-1.9	
C-	1.8-1.5	
D+	1.4-1.2	
D	1.1-0.9	
D-	0.8-0.7	Lowest passing grade.
E	0	Failure or Unofficial Withdrawal.

Virginia Polytechnic and State University

The academic achievement of a student in a specific course is rated as follows:

Letter Grade	Grade Points
A (Excellent)	4
A-	3.7
B+	3.3
B (Good)	3
B-	2.7
C+	2.3
C (Fair)	2
C-	1.7
D+	1.3
D	1
D- (Barely Passing)	0.7
F (Failure)	0
I (Incomplete)	---
NG (No Grade)	---
NR (Not Reported)	---
P (Passing)	---
RP (Repeated Course)	---
S (Satisfactory/credits only)	---
W (Course Withdrawn)	---
X (Continuing Course)	---

University of North Carolina-Chapel Hill

A Mastery of course content at the highest level of attainment that can reasonably be expected of students at a given stage of development. The A grade states clearly that the student has shown such outstanding promise in the aspect of the discipline under study that he/she may be strongly encouraged to continue.

B Strong performance demonstrating a high level of attainment for a student at a given stage of development. The B grade states that the student has shown solid promise in the aspect of the discipline under study.

C A totally acceptable performance demonstrating an adequate level of attainment for a student at a given stage of development. The C grade states that while not yet showing any unusual promise, the student may continue to study in the discipline with reasonable hope of intellectual development.

D A marginal performance in the required exercises demonstrating a minimal passing level of attainment for a student at a given stage of development. The D grade states that the student has given no evidence of prospective growth in the discipline; an accumulation of D grades should be taken to mean that the student would be well advised not to continue in the academic field.

F For whatever reasons, an unacceptable performance. The F grade indicates that the student's performance in the required exercises has revealed almost no understanding of the course content. A grade of F should warrant an advisor's questioning whether the student may suitably register for further study in the discipline before remedial work is undertaken.

Grades earned and semester hours attempted at other institutions are not included in the calculation of the University grade point average. Plus-minus grades earned prior to the 1978 fall semester are not assigned a particular numerical quality point value; the value of the basic letter grade A, B, C, or D alone is used in computing a grade point average. Records of progress are kept by this institution on all students.

Summary of Peer Grading

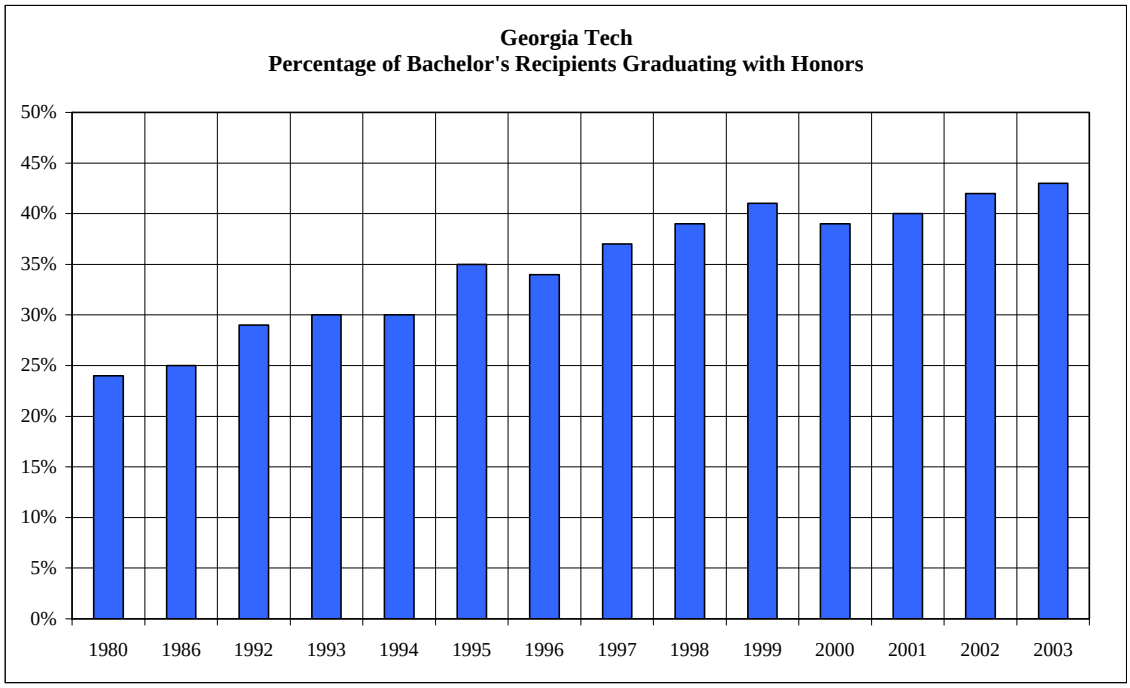
Institution	+/- Grading System	Pass/Fail for Freshmen	Grade Inflation Reports
California Institute of Technology	Yes	Yes	
Carnegie Mellon University	Yes		
Cornell University	Yes		
Johns Hopkins University			
Massachusetts Institute of Technology	Yes, Reported Internally Only	Yes	No Studies, No Plans
North Carolina State University	Yes		Yes
Northwestern University	Yes		
Pennsylvania State University	Yes		
Purdue University			Yes
Stanford University	Yes		
Texas A & M University			Yes
University of California - Berkeley	Yes		No Studies, No Plans
University of California - Los Angeles	Yes		
University of Florida	Yes		No Studies, No Plans
University of Illinois - Urbana-Champaign	Yes		Yes, Report on Grading
University of Michigan - Ann Arbor	Unknown		No Studies
University of Minnesota			
University of Texas - Austin			No Studies, No Plans
University of Washington - Seattle	Yes		
Virginia Polytechnic and State University	Yes		Yes

Chapter
2

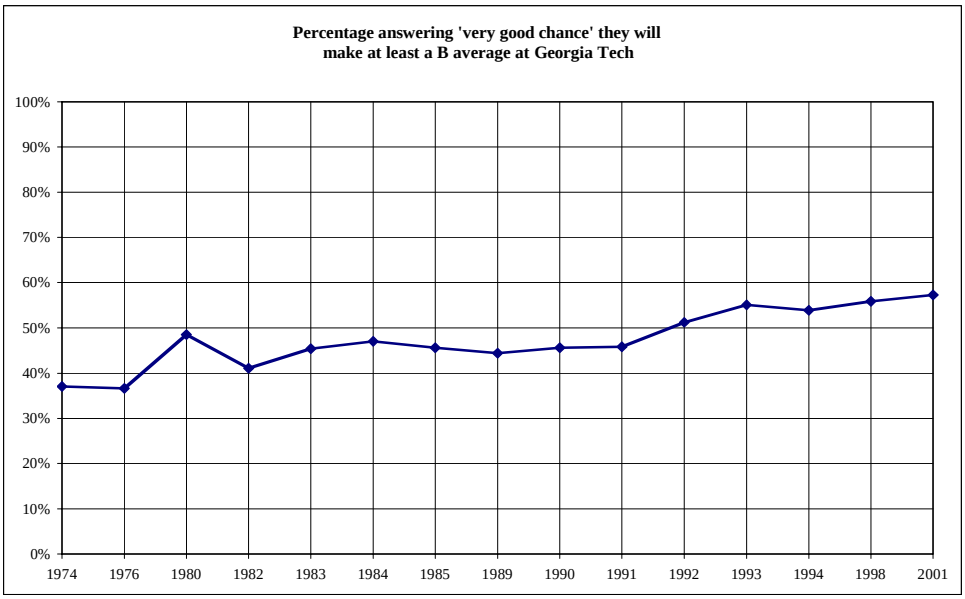
Is There Grade Inflation at Tech?

The following graphical presentation illustrates some of the data that have been collected on the issue of grade dynamics over the past several years. The comments and discussion are presented in the subsequent narrative.

Data and Analysis



Fall 2000 Freshmen		Cumulative Spring 2001 GPA				
Anticipated GPA	All	< 2.0	2.0-2.4	2.5-2.9	3.0-3.4	3.5-4.0
3.5-4.0	40.6%	11.4%	11.4%	16.1%	27.1%	**34.1%**
3.0-3.4	53.3%	12.0%	19.0%	24.9%	**24.3%**	19.8%
2.5-2.9	5.6%	7.9%	42.1%	**23.7%**	23.7%	2.6%
2.0-2.4	0.2%	0.0%	**100.0%**	0.0%	0.0%	0.0%
< 2.0	0.3%	**50.0%**	50.0%	0.0%	0.0%	0.0%

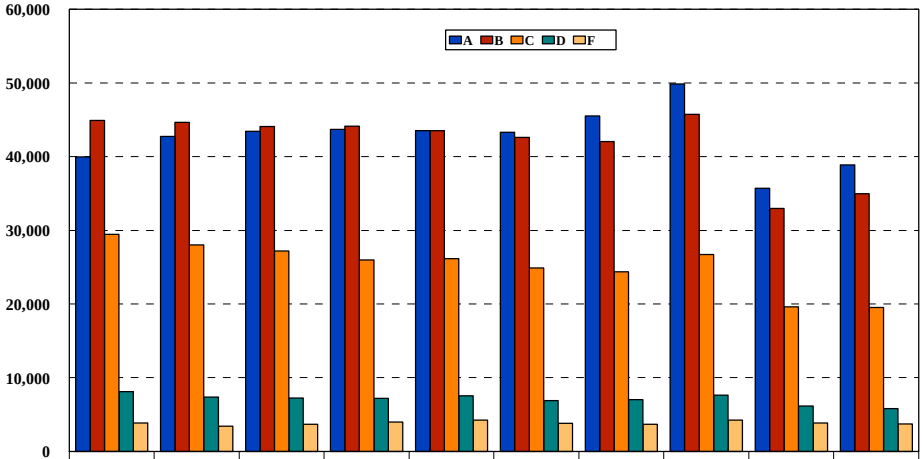


Undergraduate Level Grade Distribution (%)

College	FY	A	B	C	D	F
Georgia Tech	1992	31.6	35.6	23.3	6.4	3
	2001	37.8	34	19	5.7	3.6
	Increase or Decrease	6.2	-1.6	-4.3	-0.7	0.6
Architecture	1992	45.4	35.9	13.7	3.4	1.5
	2001	61.7	28.8	7	1.4	1.1
	Increase or Decrease	16.3	-7.1	-6.7	-2	-0.4
Computing	1992	39	29.8	19.1	6.9	5.2
	2001	37.1	31.4	20	7.1	4.5
	Increase or Decrease	-1.9	1.6	0.9	0.2	-0.7
Engineering	1992	34.9	35.7	21.9	5.3	2.2
	2001	37.2	35	20.2	4.7	2.8
	Increase or Decrease	2.3	-0.7	-1.7	-0.6	0.6
Ivan Allen College	1992	30.2	40.3	22.5	5	2
	2001	39.5	38.5	16.3	3.3	2.5
	Increase or Decrease	9.3	-1.8	-6.2	-1.7	0.5
Management	1992	25.3	35.9	29.9	6.4	2.5
	2001	30.4	34.8	23.6	8.5	2.6
	Increase or Decrease	5.1	-1.1	-6.3	2.1	0.1
Sciences	1992	27.1	32.4	26.3	9.3	4.8
	2001	32.7	30.7	21.8	8.9	5.9
	Increase or Decrease	5.6	-1.7	-4.5	-0.4	1.1

Georgia Tech Undergraduate Grade Distribution

FY 1992-2001

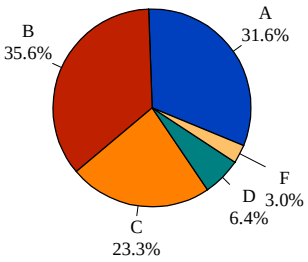


	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
A	39,951	42,747	43,446	43,673	43,502	43,319	45,520	49,873	35,730	38,898
B	44,928	44,663	44,099	44,118	43,506	42,592	42,047	45,734	32,997	34,979
C	29,479	28,040	27,214	26,003	26,165	24,928	24,373	26,743	19,618	19,533
D	8,118	7,379	7,266	7,203	7,558	6,903	7,031	7,636	6,165	5,820
F	3,851	3,418	3,706	4,012	4,262	3,834	3,695	4,241	3,880	3,732

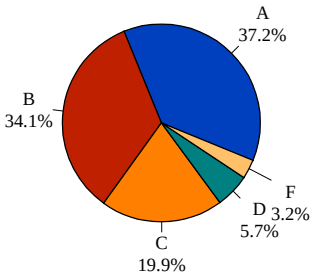
*Audit, Incomplete, Satisfactory Completion, Unsatisfactory Completion, and Withdrawn were not included in this data.

Georgia Tech Undergraduate Grade Distribution

Fiscal Year 1992, 1999, 2001



FY 1992



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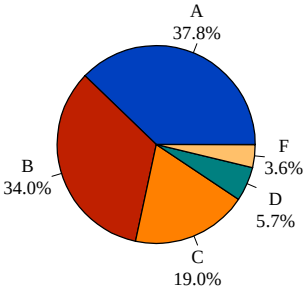
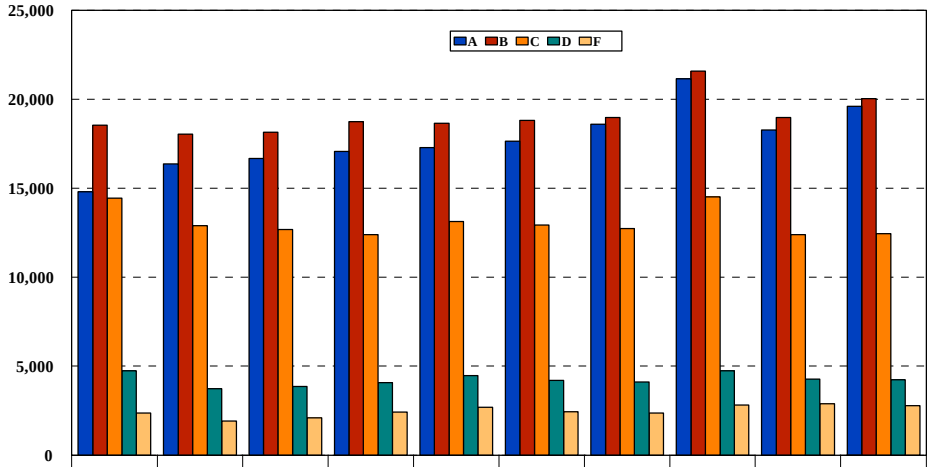


FY 2001

Lower Level Grade Distribution (%)

College	FY	A	B	C	D	F
Georgia Tech	1992	27	33.8	26.3	8.6	4.3
	2001	33.2	33.9	21.1	7.2	4.7
	Increase or Decrease	6.2	0.1	-5.2	-1.4	0.4
Architecture	1992	46.1	32.1	15.7	4.4	1.8
	2001	61.6	28.2	7.3	1.6	1.4
	Increase or Decrease	15.5	-3.9	-8.4	-2.8	-0.4
Computing	1992	35.7	27.5	20.5	8.9	7.5
	2001	29.3	33.1	22.3	9.1	6.1
	Increase or Decrease	-6.4	5.6	1.8	0.2	-1.4
Engineering	1992	31.3	34	23.2	7.5	4.1
	2001	30.5	36.1	22.7	6.2	4.4
	Increase or Decrease	-0.8	2.1	-0.5	-1.3	0.3
Ivan Allen College	1992	25.1	39.8	26.2	6.4	2.4
	2001	34.7	39.7	19	3.9	2.7
	Increase or Decrease	9.6	-0.1	-7.2	-2.5	0.3
Management	1992	23.3	26.3	33.1	11.7	5.6
	2001	30.4	34.8	23.6	8.5	2.6
	Increase or Decrease	7.1	8.5	-9.5	-3.2	-3
Sciences	1992	24.5	30.8	28.4	10.7	5.6
	2001	31.7	30.7	22.4	9.2	6.1
	Increase or Decrease	7.2	-0.1	-6	-1.5	0.5

Georgia Tech Lower Level Grade Distribution
FY 1992-2001

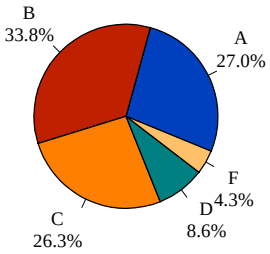


	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
A	14,799	16,379	16,674	17,076	17,291	17,654	18,602	21,150	18,281	19,599
B	18,549	18,046	18,147	18,741	18,651	18,819	18,971	21,585	18,985	20,035
C	14,438	12,899	12,684	12,398	13,124	12,928	12,739	14,513	12,388	12,457
D	4,735	3,730	3,851	4,071	4,471	4,202	4,110	4,741	4,265	4,241
F	2,370	1,912	2,098	2,419	2,687	2,445	2,370	2,818	2,883	2,780

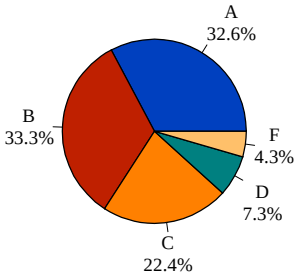
*Audit, Incomplete, Satisfactory Completion, Unsatisfactory Completion, and Withdrawn were not included in this data.

Georgia Tech Lower Level Grade Distribution

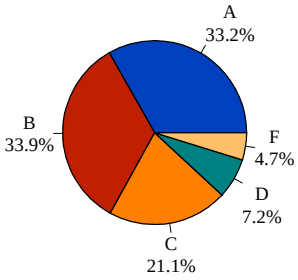
Fiscal Year 1992, 1999, 2001



FY 1992



FY 1999



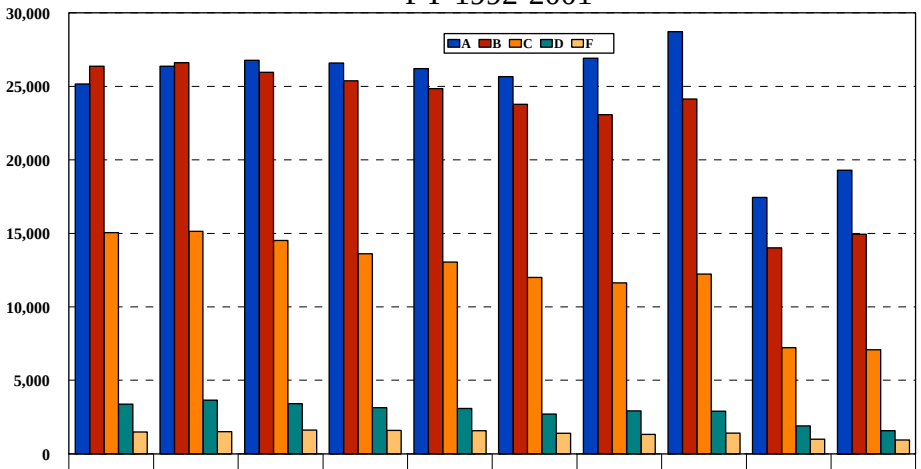
FY 2001

Upper Level Grade Distribution (%)

College	FY	A	B	C	D	F
Georgia Tech	1992	35.2	36.9	21.1	4.7	2.1
	2001	44	34.1	16.1	3.6	2.2
	Increase or Decrease	8.8	-2.8	-5	-1.1	0.1
Architecture	1992	44.9	38.7	12.3	2.7	1.4
	2001	61.8	29.3	6.8	1.2	0.9
	Increase or Decrease	16.9	-9.4	-5.5	-1.5	-0.5
Computing	1992	43.6	33.1	17.1	4	2.1
	2001	52.2	28	15.4	3.1	1.3
	Increase or Decrease	8.6	-5.1	-1.7	-0.9	-0.8
Engineering	1992	35.5	36	21.7	4.9	1.9
	2001	40.2	34.6	19.1	4	2.2
	Increase or Decrease	4.7	-1.4	-2.6	-0.9	0.3
Ivan Allen College	1992	39.5	41.2	15.5	2.4	1.4
	2001	49.8	35.8	10.3	2	2.1
	Increase or Decrease	10.3	-5.4	-5.2	-0.4	0.7
Management	1992	25.9	38.6	29	4.9	1.7
	2001	41	39.6	15.5	2.7	1.2
	Increase or Decrease	15.1	1	-13.5	-2.2	-0.5
Sciences	1992	32	35.5	22.5	6.6	3.4
	2001	38	30.6	19	7.3	5
	Increase or Decrease	6	-4.9	-3.5	0.7	1.6

Georgia Tech Upper Level Grade Distribution

FY 1992-2001

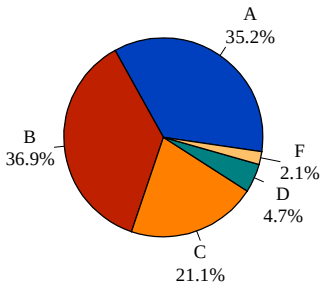


	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
A	25,152	26,368	26,772	26,597	26,211	25,665	26,918	28,723	17,449	19,299
B	26,379	26,617	25,952	25,377	24,855	23,773	23,076	24,149	14,012	14,944
C	15,041	15,141	14,530	13,605	13,041	12,000	11,634	12,230	7,230	7,076
D	3,383	3,649	3,415	3,132	3,087	2,701	2,921	2,895	1,900	1,579
F	1,481	1,506	1,608	1,593	1,575	1,389	1,325	1,423	997	952

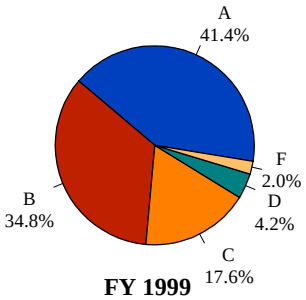
*Audit, Incomplete, Satisfactory Completion, Unsatisfactory Completion, and Withdrawn were not included in this data.

Georgia Tech Upper Level Grade Distribution

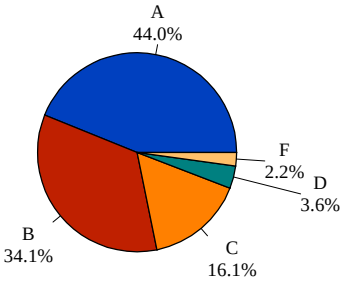
Fiscal Year 1992, 1999, 2001



FY 1992

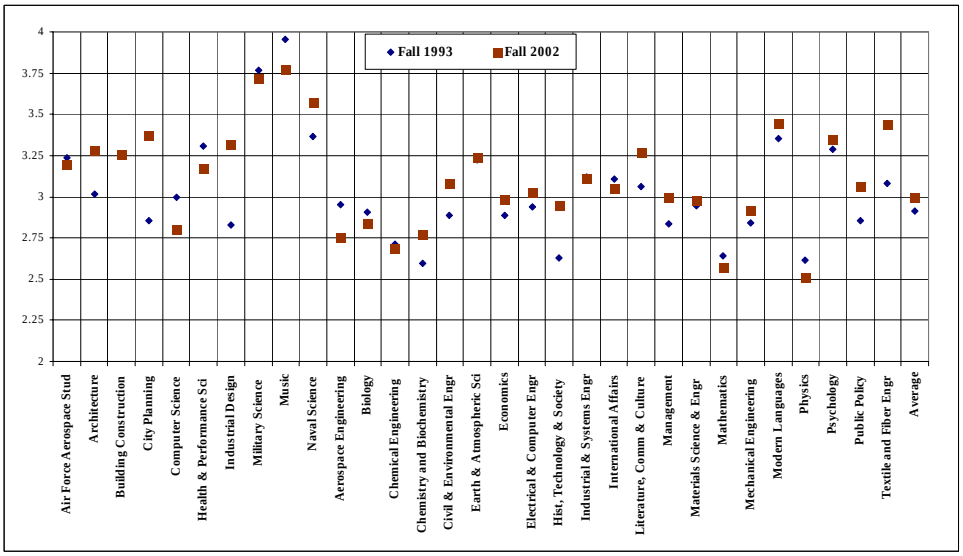


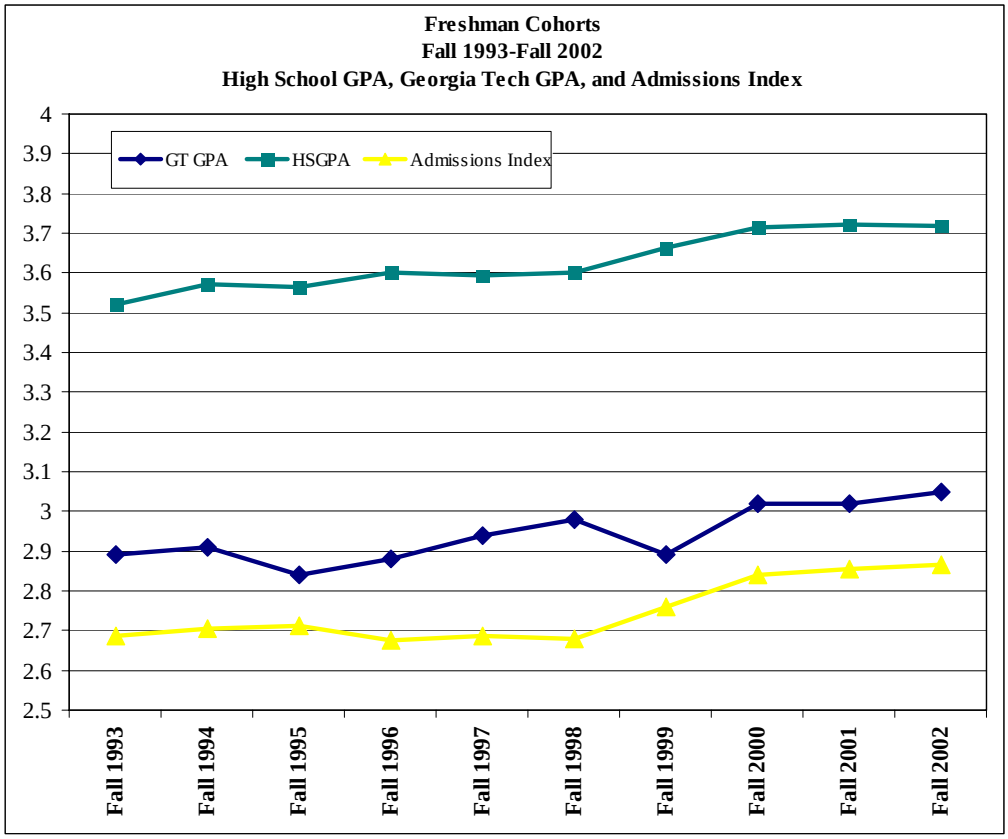
FY 1999

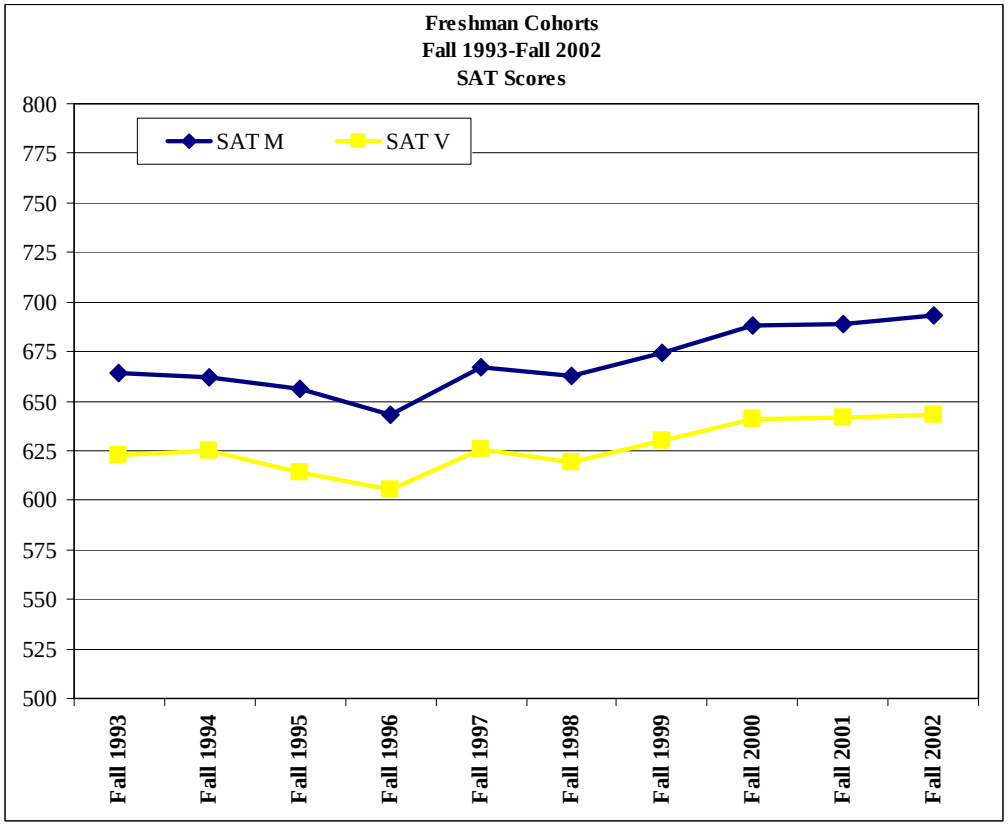


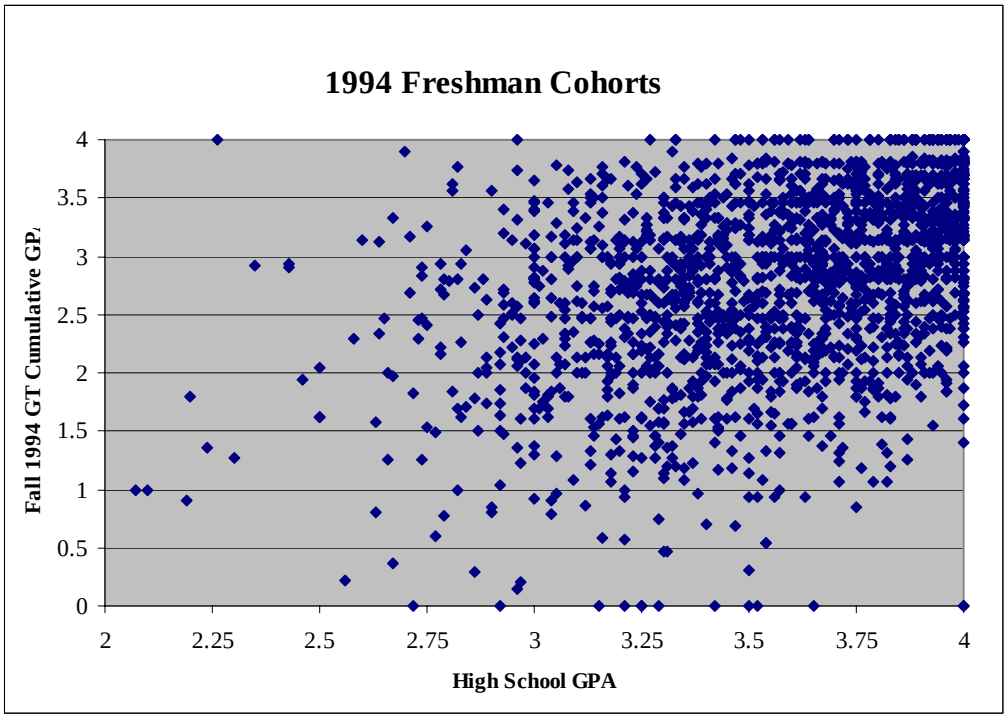
FY 2001

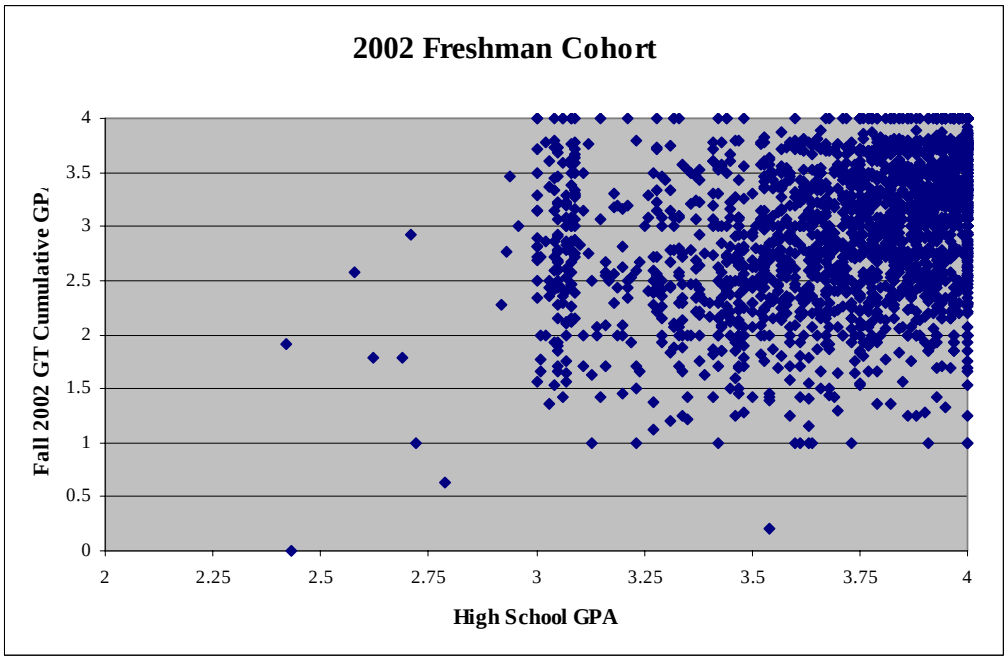
Undergraduate Level Grades by Department Fall 1993 vs. Fall 2002




Freshman Cohorts
Fall 1993-Fall 2002
High School GPA, Georgia Tech GPA, and Admissions Index
GT GPA
HSGPA
Admissions Index
4
3.9
3.8
3.7
3.6
3.5
3.4
3.3
3.2
3.1
3
2.9
2.8
2.7
2.6
2.5
Fall 1993
Fall 1994
Fall 1995
Fall 1996
Fall 1997
Fall 1998
Fall 1999
Fall 2000
Fall 2001
Fall 2002


Freshman Cohorts
Fall 1993-Fall 2002
SAT Scores
SAT M
SAT V
800
775
750
725
700
675
650
625
600
575
550
525
500
Fall 1993
Fall 1994
Fall 1995
Fall 1996
Fall 1997
Fall 1998
Fall 1999
Fall 2000
Fall 2001
Fall 2002


1994 Freshman Cohorts
Fall 1994 GT Cumulative GP
4
3.5
3
2.5
2
1.5
1
0.5
0
2
2.25
2.5
2.75
3
3.25
3.5
3.75
4
High School GPA


2002 Freshman Cohort
Fall 2002 GT Cumulative GP
4
3.5
3
2.5
2
1.5
1
0.5
0
2
2.25
2.5
2.75
3
3.25
3.5
3.75
4
High School GPA

Opinions

Congruent Quality: Can We Make "Grade Inflation" Irrelevant?

(by J. Marr, Professor, Psychology)

Miroslav Begovic has asked me to comment on the remarkably thorough and informative document on putative grade inflation at Georgia Tech. This topic received a lively review at the GT Assessment Seminar last year with much of the data in the current report presented by Sandi Bramblett, Denise Gardner, and their colleagues in the Office of Institutional Research. In detail, the data give a mixed, if not confusing picture of the changes in patterns of grades over the last 30 years or so, but one thing is clear, the overall GPA has risen significantly---about 20% since 1972. As one whose memory goes back even further, this trend has probably been occurring since the late 1950's. Overall, the rate of growth per year is small, the most rapid appearing to be between Fall '88 and Fall '93 when the overall GPA rose from about 2.6 to 2.75, about .03 per year. The rate of change since 1972 has not been steady, but is characterized by varying positive slopes interspersed with fairly long plateaus, the longest being from about the Fall of '81 to the Fall of '89. The sources of these effects are unclear, but perhaps are worth more detailed study.

A fundamental question here is: Do the changes reflect grade inflation or truly enhanced achievement? As I believe the report indicates, there is no simple answer to this question and thus there are no obvious policy implications. Increased quality of incoming students, increased eminence of faculty, increased emphasis on quality of teaching and modes for learning, reduction in the number of hours and courses taken, etc. all are likely factors in increasing the overall GPA by enhancing achievement. But there are other less flattering processes as well: More courses taught by adjunct faculty who tend to give higher grades for less challenging assignments, enormous pressures on non-tenured faculty to be productive researchers, perhaps leading to less attention given to proper evaluation and challenge of their students (especially in large introductory classes), less active learning encouraged through multiple-choice tests and the like, etc. These sources are speculative, to be sure, but I think worth further analyses. At bottom, however, education at our Institute is a complex dynamical system driven by many internal and external processes and thus changes and trends in outcomes are difficult to interpret, much less control. That said, I wish to return to the issue of higher grades reflecting enhanced achievement. Some emphasis in this report and elsewhere has been placed on the enhanced quality of our incoming students over the last several years. Their entering SAT scores are now averaging around 1360, the highest of any state-supported institution in the country. Given few or no changes in the overall requirements for academic achievement for students over these years, we certainly should expect a trend toward higher GPAs. How could it be otherwise? As mentioned earlier, the data summarized in this report give a mixed picture of the exact sources of increases in grades. In some few cases, GPA's have actually decreased in the last few years, thought this result may not be statistically significant. In certain courses, grades may be high simply because little is required to obtain good grade, in other words, the classes are simply easy. A significant increase in the availability of such classes would have some overall effects. The report provides some hints

as to where to look for such cases, but more detailed information may be required to assess possible effects.

The most important question for me is: *Is the quality of our instruction congruent with the quality of our students?* Are we effectively meeting the challenge of high quality students with high quality education at *all* levels? I will address this issue in more detail below, but for now I will simply assert that high quality education means: (1) the routine exercise of the best possible instruction with the highest standards of scholarship, (2) that high quality, active performance is demanded of the students, and (3) that a student's performance is evaluated with as clear and consistent standards as possible, based on the stated objectives of the course. If we, as faculty, were reasonably consistent and responsible in meeting these requirements, then the issue of grade inflation would be irrelevant. Our task is to arrange contingencies to bring students to academic excellence---if students earn high grades under such conditions, then they clearly merit those grades. We should, then, systematically explore the extent to which the above criteria are being met; in particular, what is required of students, how their performance being evaluated, and the extent to which the instruction and other conditions for learning set the conditions to optimize performance. This will not be an easy task, but we should know how we might best nurture the high abilities of the students we instruct.

How might we ensure quality education for undergraduates at Georgia Tech?

Recent discussions in the Executive Board on the need for enriching the non-academic undergraduate experience at Georgia Tech raised for me a parallel concern with the quality of the *academic* experience of our undergraduates. A number of factors contribute to consideration of this issue. First, we have seen some significant growth in our undergraduate population in recent years with the potential of straining resources in maintaining high-quality classroom and laboratory experiences essential to effective learning. Second, semester conversion, necessarily done in haste and with considerable constraints, especially on engineering and science curricula, has been in effect long enough for some systematic evaluation of its consequences and consideration of ways to improve its implementation to ensure quality in all our academic programs. Third, accelerated growth in graduate programs, an inherent feature of a major research university, can adversely affect faculty involvement in undergraduate instruction and academic programs. Fourth, the recent focus on enhancing retention of undergraduates, certainly a laudable effort, must not compromise academic rigor in its exercise. Fifth, we have the most able undergraduates in our history and we must ensure that their academic experiences are commensurate with their quality. Sixth, we are also facing major resource limitations where compromises may threaten the delivery of the highest possible quality of instruction. Seventh, possible adverse changes in academic culture and climate occurring with growth, shifting priorities, new demands and opportunities, strains on resources, etc., may happen in subtle or slow enough ways that the long-term effects may not be obvious until it is too late to reverse them. In general, history indicates that significant compromises in quality of education are irreversible.

What does "quality" mean in the context of undergraduate education here at Georgia Tech? This is certainly an arguable and complex issue, but I would like to put forth some very brief suggestions, in part, based on what we know of the learning process, especially as related to high-level, complex performances, including creative behaviors. I also draw on a history of

more than 35 years of teaching undergraduate (and graduate) students here at Tech as well as experience with instructional design and assessment of science and engineering education. In addition, I include my own experience as a Tech student when Tech was primarily an undergraduate institution. Here are just a few overlapping principles and conditions:

1. Always emphasize active as opposed to passive learning----learning is *doing*---extensive writing and problem solving, speaking, exploring new material, "playing" with principles and ideas, debating, etc.

2. Set up conditions for *mastery* of course material as opposed to merely superficial "recognition". These include appropriately timed and carefully designed evaluation procedures.

3. Provide challenging assignments and performance evaluations to exercise and extend the classroom/lab material to more complex, integrative, and generalized levels of analysis and synthesis.

4. Draw on and exercise as much previous learning as possible from all relevant sources to encourage and enhance cumulative learning and integrative performances.

5. Train self-instruction skills at all levels---teach students how to learn for themselves, including effectively evaluating their own performances.

Most of these, if not all, are obvious and much more can be said here, but I believe that instructional systems that follow these procedures can at least set up conditions for what I deem quality education.

Conditions that compromise the exercise of these kinds of instructional procedures are threats to quality. For examples, here are some situations I see as potential or actual threats to quality undergraduate education at Georgia Tech, in no particular order:

1. Growth in the undergraduate student body as well as academic programs has not been met with needed growth in faculty. Moreover, in general, faculty are teaching fewer undergraduate courses---this is especially true of newer faculty.

2. There is growing pressure to increase the number of majors in some Schools (especially COS) without *concurrent* increases in faculty and other resources needed to maintain quality. A common measure driving such demands is the Student-to-Faculty ratio. This is generally a spurious measure not reflecting actual student-faculty interaction, or just what constitutes "faculty".

3. The above is but one manifestation of overall increases in class size, especially in the freshman-sophomore core or introductory courses, but, all too often, in upper-level courses as well. Under these conditions active, creative learning and performance, and anything like appropriate mastery of the material are profoundly compromised. Such "mass education" (an oxymoron) may also affect retention.

4. Some of the problems with class size might be ameliorated through effective instructional technology or other teaching procedures, but we seem to be far behind in retooling classrooms for available technology, proper assignments for classrooms (too often inappropriate for a given class), and assignments of large lower-level courses to part-time instructors or insufficiently trained graduate students.

5. We do not seem to have in place effective contingencies for rewarding faculty for research in and development of innovative and effective instructional methods and technology as well as course and curriculum design and evaluation. Even though NSF and other granting agencies fund these kinds of efforts, indications are that faculty are not encouraged (in some cases, actively discouraged) to spend time with such activities.

6. Semester conversion has wreaked havoc with curriculum design and has led to terrible scheduling problems for students. A missed required course can mean a year's delay in graduation, for example. Attempts to deal with these sorts of problems can lead to less rigorous and appropriately structured curricula, in other words, a simple-minded "menu education". On the other side, because of the forced reduction in the number of hours required for graduation, our curricula often have few, if any, electives available---yet another factor perhaps contributing to less retention than we might have. We seem to have a dilemma here. I see this as a particularly troublesome issue in the COS and COE.

7. Quality and appropriate evaluation of student performance go hand-in-hand. Wide use of multiple-choice and short-answer tests (often canned) may be the only practical means of evaluations in large classes, but the consequences are obvious. Can we find better ways?

8. Addressing any of the above items will be very resource demanding---how can we meet these challenges under present conditions?

There are some good indications for undergraduate education here---increased support and encouragement for undergraduate research experiences, a greater concern for effective teaching, renewed attention to performance evaluation, concern about proper assessment of educational experiences, and explorations to improve the non-academic side of campus life. But I think we need to do more.

A Proposal

I recommend that the Executive Board authorize the appointment of *ad hoc* committee with the charge of exploring and evaluating what quality undergraduate academic experience is, or should be at Georgia Tech, and ways of sustaining the highest possible quality commensurate with the abilities of our students. Among the items that might be addressed include:

(1) Threats to quality and ways of addressing those threats.

(2) Determining “best practices” from within and without the Institution for maintaining and enhancing the quality of undergraduate academic experience.

(3) Problems (as well as possible successes) with the present semester curricula in scheduling courses, appropriate instruction, electives, etc., and ways of addressing such problems.

(4) Explore and suggest ways of encouraging effective and innovative instruction---especially in lower-level core and introductory courses.

(5) Suggest priorities for interventions to address quality.

Committee members should be chosen from those who are in some way directly involved or deeply committed to undergraduate education. I would suggest the following: Bob McMath, Vice Provost for UG Studies, Joe Hughs, Chair of the UG Curriculum Committee, Miroslav Begovic, Chair of the Student Academic and Financial Affairs Committee, Lynn Fountain, Chair of the Academic Services Committee, and Joseph Hoey, Director of the Office of Assessment.

There Is No Grade Inflation at Tech

(by Y. Wardi, Professor, ECE)

Three years ago I chaired a discussion group on student retention at a retreat of the Executive Board. My inclination was to tie the retention problem to grading patterns, and to come out in support of students who, I thought, were subjected to harsh grading practices. Since then I have given considerable thought to the grading issue which has taken a path of its own, independent of the question of retention. I participated in various discussions, both formal and informal, trying to define an optimal policy for fair and accurate grading. After three years of wrestling with the issue, I realized that I have had no general answers. Therefore, when Miroslav Begovic asked me to write about my thoughts on grade inflation at Georgia Tech, I replied that all I could do was to comment on specific points and present my own concerns. The general question has to be debated in the context of the broader issue of quality education, and I hope that such a debate will take place in the future.

The Student Academic and Financial Affairs (SAFA) Committee, chaired by Miroslav in the past academic year, has provided a tremendous amount of data on trends of grade averages at Georgia Tech. The data indicate a gradual rise over the years, which may be associated with grade inflation. Similar trends and concerns have been noted in universities nationwide. Although there is no proof that the patterns of rising grades at Georgia Tech represent an inflationary process, I have a gut feeling that we actually do have a grade inflation. The problem I see is not in having inflation, but in not having enough of it.

There is no question that grade averages at Georgia Tech are considerably lower than at most peer institutions. Thus, while noting the grading trends, we ought to be concerned with the effects (both positive and negative) of giving lower grades than our peers at other universities. On the positive side, some companies and graduate schools may value a certain grade level from Georgia Tech more highly than a similar grade from other schools. On the negative side,

our students may be at a disadvantage when seeking entry to professional schools or lucrative graduate schools. I wonder whether a Ph.D. program at Berkeley would prefer admitting a Tech graduate with a 3.5 GPA over a Duke graduate with a 3.9 GPA. If indeed there is measured retreat of the nationwide academic system before the advance of grade inflation, we appear to be in the rear guard, perhaps taking the arrows as far as the future prospects of our students are concerned. I would suggest that we think (and debate) our desired position in this retreat process having in mind the interests of our hard-working students.

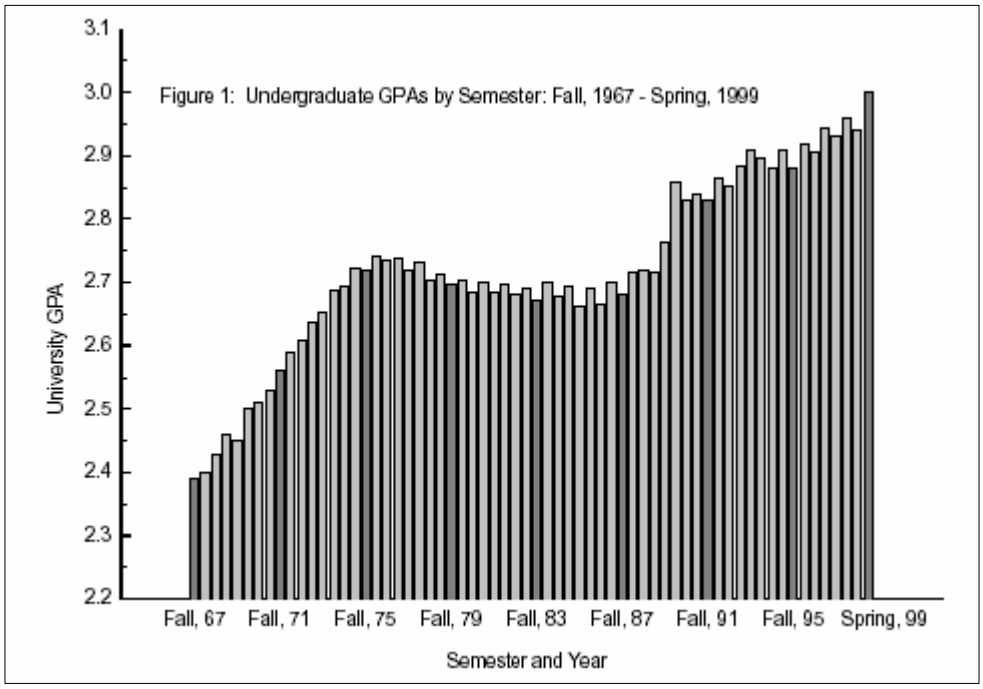
Practical discussions on grade inflation often involve the issue of grading policies. In my opinion, the best and fairest policy is to leave the grading entirely to the class instructor. Whereas this policy is partly implemented at Georgia Tech, there are some units where pressure is being applied to the faculty to assign average grades according to certain guidelines or recommendations. In some classes, tight bounds on the GPA are determined before the course begins. I understand the motivation behind these practices, namely to have some uniformity and prevent a runaway inflation. However, we ought not loose sight of the fact that only the class instructor is in a position to assign the fairest possible grades. Just like the students are different from each other, so are we. Some students tend to get better grades than others, and some faculty members tend to give better grades than others. Although it appears to have inherent imbalances, the policy that allows instructors complete freedom in grade assignment is probably the fairest policy from the students' perspective.

The questions of grade inflation and grading policies at Georgia Tech are of considerable interest to faculty and students. Usually, we hear the voices of students at the two extreme points of the GPA, but not in the gray area between them. Yet I am sure that a silent body of students, namely those with GPAs in the range of 2.1-2.9, would have interesting opinions. I hope that the discussion on grading at Georgia Tech would result in the establishment of a forum for debate, engaging the faculty as well as interested students.

Chapter
3

Comparative Analysis at Peer Institutions

Grade inflation has been a recent hot button topic among top universities and institutions. Since Harvey Mansfield wrote on the topic concerning Harvard, university faculty and officials have been taking a more in depth look at the current grading situation on campuses across the nation. Summaries of some of these grade inflation studies are provided in this synopsis.



Many of the problems facing universities can be summed up in a conversation between a University of North Carolina-Chapel Hill (UNC-Chapel Hill) professor and a student. "I took your course last year and it was the worst experience of my life." "Oh?' "Well I mean, I enjoyed the course and I learned a lot, but it just about destroyed my GPA." (Fearing the worst) "What grade did you receive?" "A B+." Students are expecting good grades in the classroom. Students feel it is not only their right to receive an education, but to receive good grades and to receive a degree.

At UNC-Chapel Hill, the first major grade inflation occurred during the time of the Vietnam War and university expansion from 1967 to 1976. They now find themselves in the middle of a second grade inflationary period in the past three decades that has lasted from the 80's through the 90's. UNC-Chapel Hill has conducted a grade inflation study; its findings showed

when disappointed by their grades, students gave less favorable evaluation ratings of their instructor. Professors who award students with a 2.7 or lower suffered in their evaluations. Students had higher approval ratings of professors who gave higher average grades. The study found that 44 departments have a GPA of 3.217-4.0 while 19 have a GPA of 2.988-3.201 and the final 14 departments have a GPA of 2.862-2.979. Below is a summary of UNC-Chapel Hills' cumulative GPAs 1967-1999.

The UNC study cites George Kuh, who in his own study found that students are spending less time on learning-related activities, such as attending class and studying than did previous students, but received higher grades anyway. This type of result shows grades given to students are indeterminable, making it hard to distinguish the best students from the rest. Students who excel are sharing A's and B's with less able students. Grade inflation discredits the university, makes it difficult to distinguish students for research and graduate school, and it gives students an inaccurate conception of their abilities. Honor societies cannot use GPA alone to decide members, and those who take more math and science tend to have lower GPAs than others. Students are essentially earning degrees with minimum effort, and while students appear to be prepared for the workplace, they are in fact not.

Grade inflation may have some positive aspects according to UNC-Chapel Hill's study. Students from UNC will remain competitive with other schools where there is grade inflation; students are more encouraged from the reward of good grades and achieve more; it attracts more applicants; and it reduces competition for grades, which is harmful to the learning enterprise. UNC-Chapel Hill faces a problem; its private peers are also dealing with grade inflation that in fact may be greater than their own problem. This could impact their graduates' success in gaining a prestigious job or admission to a graduate school.

There are several probable causes to grade inflation according to UNC-Chapel Hill:

- High schools are doing a better job of preparing students
- The applicant pool is better and admissions is more selective
- More successful in attracting and enrolling the best students
- Students are working harder once enrolled
- Students are taking a lighter course-load per semester, facilitated by AP credits, Summer School, and longer time until graduation
- Students now expect higher grades, and they are more aggressive in complaining about low grades
- Students gravitate towards those instructors and courses that award higher grades
- Some subjects are inherently more challenging and demanding than others
- Faculty are doing a better job of teaching students the required material
- Faculty are "spoon-feeding" the material to students in a form that makes it easier to earn high grades.
- Faculty are awarding higher grades to gain favor with students in course reviews
- Departments are awarding higher grades in a "bidding war" for enrollments, majors, and resources at the University
- The improvement in grades reflects a richer intellectual climate and concomitant higher academic achievement at the University

- Grading standards in the University have become less demanding.

The *American Academy of Arts & Sciences'* report on The Consequences of Grade Inflation provides evidence of the epidemic facing colleges and universities across the country. According to the report, causes for grade inflation include: higher education's response to the Vietnam War and the turmoil of the 1960s, changes in curricular and grading policies, the advent of student evaluations of professors, the rise of 1980s consumerism-universities operating like business for student clients, watering down of course content, and the increasing role of adjuncts in university faculties. This study discounts the idea that increasing diversity has increased grades. They found a need for objective grading that provides objective feedback and not academic "self-esteem". According to Rosovsky and Hartley (authors of Evaluation and the Academy: Are We Doing the Right Thing), grades are often negotiated and students with the best relationships with their professors win out. The study suggests universities work to create standards for faculty, greater discussion among universities about grading practices, the formulation of alternative grading systems, and the establishment of the grading curve as a standard.

According to the authors, "A system that fears candor is demoralizing. Much is lost in the current situation, primarily useful information for students, colleges, graduate schools, and employers. Even if those who need accurate information have learned to 'work around the system,' the cost of what prevails today remains high. Instead of moving through formal and open channels, information is guided toward informal and more secretive byways."

In 2001, the Committee on Admissions and Academic Standards at the University of Miami (UM) reported on grades and grade inflation. In the report, UM discusses the increasing percentage of A's distributed to students in the recent years and the creep upward in the average GPA. The UM has come up with several possible reasons for the increasing grades. Part of the possible reason could come from the shift in classroom perception. At one time students did not question a professor's judgment on grades. Whereas today students perceive a bad grade as judgmental or harsh, in a university atmosphere that encourages getting to know your professor in a collegial setting. Another explanation is often professors are buried in research or publishing, they often try to slough off the burden of students' complaints by giving them higher grades. Students don't complain, argue, or appeal when their grades are higher. Again, like UNC, they discussed the positive correlation between grades and instructor evaluation, as well as faculty who are up for tenure who perceive high grades as a way to the road of tenure and promotion.

The University of Miami also gave possible solutions to the problem of grade inflation, including each department reviewing its grading policies; providing faculty with annual reports on their individual grading along with the pattern across the university; the appointment of an ad-hoc committee to develop the procedure of evaluation of teaching; providing evaluations that discuss rather than rate teaching ability; and further inquiry into grade indexing. Grade indexing would include more detailed information on a student's transcripts including the number of students who received the same grade or higher, the distribution of W's, the average grade, the average GPA of students in the class, and the

percentage who are majoring in that department. This would aid in providing other universities and potential employees a greater indication of their performance.

According to a grading report done by the University of North Carolina-Asheville, one possible solution for discerning extraordinary work from good work is to distinguish with a plus/minus system of grading. Findings of the report indicate this system would in effect lower GPAs for students who are in the top ten percent. The new system would allow faculty to distinguish between those who excel and those who are borderline. Of 19 of our peer institutions, 13 are on a plus or minus scale of grading. California Institute of Technology and Massachusetts Institute of Technology have freshmen on a pass/fail system of grading to allow students to adapt and adjust to the strenuous curriculum.

North Carolina State University implemented the plus/minus system in fall of 1994. A study done by NC-State to evaluate the effects of a plus/minus system shows that GPAs are lower with the plus/minus system than it had been without it. From the study, students' GPAs increased about 0.25, and while they felt grade inflation had occurred, they felt the study needed to include other factors such as curriculum changes and quality of student.

Loyola University currently uses the plus/minus system of grading and has found that most departments in the university agree that it works. Advantages that Loyola has found to the plus/minus system is more compatible to most other universities, it gives greater accuracy in grade assignment through finer divisions, it helps combat inflation through greater flexibility, it provides a better tool for ranking students, and it gives better statistics on class spreads. Concerns with a new system at Loyola include students complaining about borderline grades, especially B+ and A. Professors who grade students also have difficulty in distinction in grades in a plus/minus system, the system allows for an opportunity for subjectivity when grading, and transcripts often change the value of the letter grade without compensation to the student.

The University of Illinois's report on Assigning Course Grades, gives positive and negative benefits to the way faculty grade their students. The purpose of the report is to set guidelines for grading at the institution and the effectiveness of each method of grading. In the report, factors that influence faculty decisions can be comparison of other students, comparison with established standards, and comparison based on learning relative to improvement and ability. In their report, they provide specific guidelines to grading methods to be used by faculty in order to present advantages and disadvantages to each method.

Ohio University looked at the issue, with a report entitled *The Current Status of Academic Standards in Engineering Education at Ohio University*. In the report, the author commented on the normal curve in grading with 10-15% of all grades being A's, 70-80% being B's, C's, or D's while the remaining 10-15% should be Fs. While this would create a normal distribution, it is far from being the norm. Factors causing this grade inflation are that academic standards are inflated and inconsistent grading cultures exist on their campus. Some departments and colleges grade more leniently than others. Ohio University suggests part of the problem for all university stems from the idea that people in the United States feel all

people have a right to higher education, and a right to an A and high self-esteem. This distorts grading in our colleges and universities.

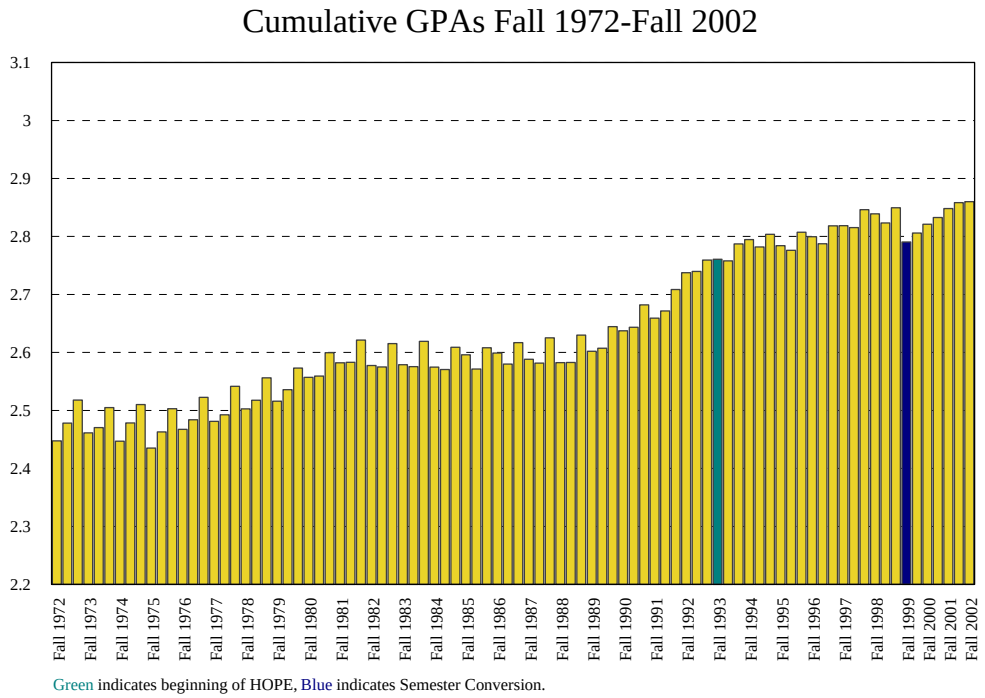
Another Point of View

Grade inflation has received a large amount of publicity in the recent past, and while many agree they have seen an upward shift in the grades students are receiving, there are opponents to the grade inflation theory. In the *2002 Chronicle Review*, an article entitled, The Dangerous Myth of Grade Inflation by Alfie Kohn gives an opposing view to why letter grades of B or better have increased. Alfie Kohn also suggests the possibility that grading has become fairer, and asks the question why professors were so stingy with their grading in the past. He suggests that even the SAT is not the best predictor of student success. His argument suggests, and rightfully so, grade inflation studies have never proven that students today get A's for the work in which they used to receive B's and C's. Grade inflation studies have never been able to quantify quality of individual work as well as quality of individual teaching, which are obvious factors in grades students received. Perhaps being able to drop a course has allowed grades to appear to be inflated, allowing students to get out before receiving a low grade. Another idea is students are now able to concentrate on courses in which they are interested in and thus do better in those courses.

Kohn also cites the fact that selective institutions of prestige have increased their standards and have students who are coming with higher SAT scores, who should in fact perform better. Kohn suggests that universities are being incorrectly considered a marketplace where faculty are expected to sort students for graduate schools and employers. Kohn suggests that students should not be pitted against each other but faculty should use grading as a means to encourage improvement or learning. Competitiveness, as many suggest is a healthy way to encourage success in learning. But in his article he suggests this means that good colleges' purposes are not to maximize success but to ensure there are losers. In this view, students are forced into a bell curve which may be unrealistic to the quality of students in the class. Classes may have students who all do excellent work, and a bell curve could in fact show failure to teach well, test well, and failure to have any influence on the intellectual lives of students. Perception of grading issues could present other problems in the classroom. Raising the bar can be misconstrued for assigning more work, giving terribly hard tests, and priding ones self on giving only a few number of good grades.

The article suggests that grades are not necessarily a measure of student's knowledge of content in the classroom. It cites studies that show grades may not be the best motivation for students. Students who are given grades or for whom grades are made particularly important, tend to display less interest in what they are doing, avoid more-challenging tasks as compared to a non-graded comparison group. It suggests that there should be an alternative to grades altogether. Some universities have done away with grades arguing that it motivates students to delve into the curriculum focusing on learning verses the grade they receive. Kohn suggests looking at the traditional grading system and reevaluating it instead of focusing on the current grading system practices.

Georgia Institute of Technology

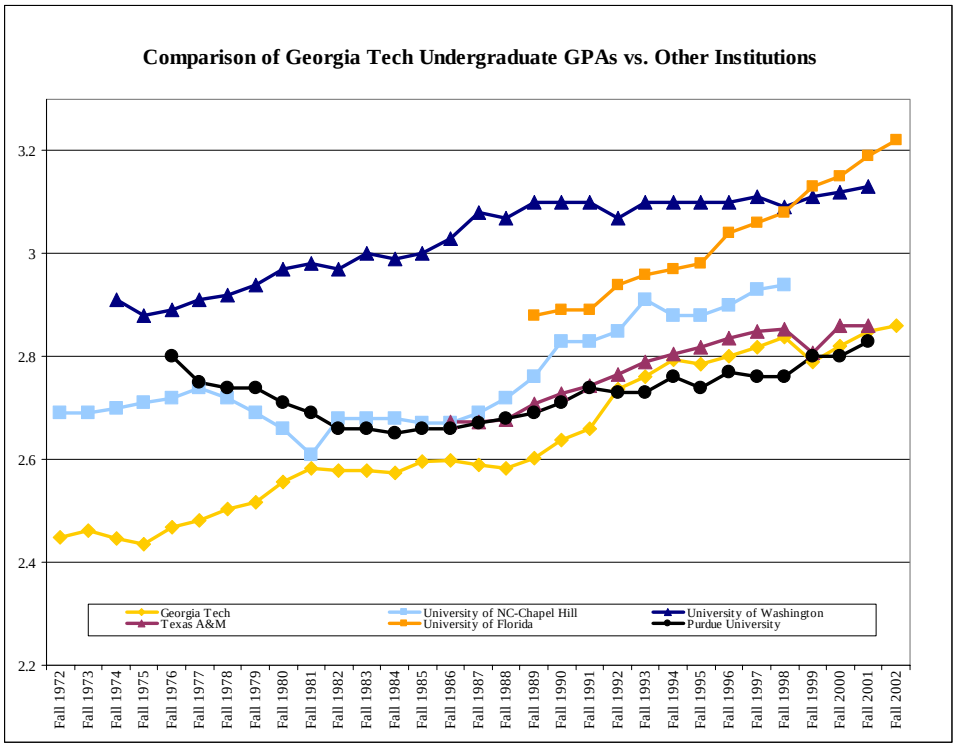


Green indicates beginning of HOPE, Blue indicates Semester Conversion.

An overview of the past 30 years of Georgia Tech data shows there has been an increase in average GPAs. The graph provided shows the increases in average GPA per semester (not including summer) from fall 1972 to fall 2002.

The graph shows that in fall of 1972, the average GPA for undergraduate students was 2.45, by fall 2002; the average GPA for undergraduate students was 2.86. The trend shows the average GPA increasing each term. For instance, in fall 1972 is less than the GPA for winter 1973, and winter 1973 is less than spring 1973. Each spring term has a higher GPA than the other two terms. The green line shows when the HOPE grant was established, giving a point of reference. The blue line indicates when the semester conversion took place, interestingly the GPA dropped that term, but each term following continuously rises surpassing all the previous 30 years of GPAs.

The comparison between Georgia Tech and some of the peer institutions' chronological grading dynamics is shown in the Figure below. While the interpretation of the grading trends may lead one toward different conclusions, some facts remain unchanged: during the past thirty years, Georgia Tech's average grades have been and have remained on the low side of the ranges of GPAs, as the Figure below indicates.


Comparison of Georgia Tech Undergraduate GPAs vs. Other Institutions
3.2
3
2.8
2.6
2.4
2.2
Georgia Tech
University of NC-Chapel Hill
University of Washington
Texas A&M
University of Florida
Purdue University
Fall 1972
Fall 1973
Fall 1974
Fall 1975
Fall 1976
Fall 1977
Fall 1978
Fall 1979
Fall 1980
Fall 1981
Fall 1982
Fall 1983
Fall 1984
Fall 1985
Fall 1986
Fall 1987
Fall 1988
Fall 1989
Fall 1990
Fall 1991
Fall 1992
Fall 1993
Fall 1994
Fall 1995
Fall 1996
Fall 1997
Fall 1998
Fall 1999
Fall 2000
Fall 2001
Fall 2002

Chapter 4

Discussion

Sources

What, then, are the sources of this upward shift in grades? Those searching for the root causes of grade inflation sometimes turn toward fundamental changes in the broader society and culture, such as a shift in attitudes associated with Vietnam War or the spread of more liberal parenting techniques. This report steers clear of such matters and concentrates instead on more proximate causes that may have contributed to the observed changes in the 1990s.

These proximate causes fall into two broad categories:

- **External factors**, specifically those influencing our students before they arrive at Georgia Tech, and
- **Internal factors** occurring within Georgia Tech, a much larger category that includes matters such as the pressures operating upon faculty and the distribution of grades among different units and at different course levels.

External Factors

As noted above, we have not attempted a broad social and cultural analysis of potential sources of grade inflation. Nevertheless, we have considered one potential explanation that necessarily involves giving some consideration to the social and cultural background of our students. Several influential observers have suggested that grade inflation at premiere institutions has resulted primarily from *the superior abilities of successive student cohorts to achieve high grades*. High-achieving high school graduates in the 1990s, these observers suggest, have developed an outstanding capacity to earn high marks. Students of this generation may not be intellectually venturesome or creative, but they get very good grades (see Brooks, the *Atlantic Monthly*).

Empirical studies of grade inflation at the high school level, though scarce, lend considerable support to this idea (see article in packet). They find that while overall high school GPAs have not increased substantially, the performance of certain groups of students has increased noticeably. The most dramatic improvement has occurred at the top levels of performance, at schools with student cohorts that come largely from upper middle class backgrounds and households with high levels of educational attainment. Performance of these students has improved most noticeably in core subjects, particularly mathematics, science, and language arts. Girls in such cohorts have done especially well.

These are, of course, just the sorts of students that Georgia Tech has been admitting in increasing numbers during the past decade. Under policies intended to keep larger numbers of outstanding students in the state system, while holding enrollments at Georgia Tech steady, increasing proportions of our students come from a select group of high schools that fit the profile described above. And sure enough, their credentials have improved significantly:

- In Fall 1993, the average high school grade point average of the entering freshman cohort at Georgia Tech was 3.52. The high school GPA of the cohort that entered in Fall 2002 was 3.72 (an increase of 5.65%).
- The average SAT score, adjusted to account for recentering, increased during this period from 1288 (664 M, 623 V) to 1336 (694M, 643V) (a composite increase of 3.73%).
- The admissions index used to evaluate entering freshman, which serves in effect to predict their expected performance in first-year courses at Georgia Tech, rose from 2.69 to 2.87 (a jump of 6.77%).
- The proportion of women, who traditionally achieve significantly higher GPAs than men in high school and at Georgia Tech, increased from 481 out of 1,955 (24.6%) to 639 out of 2,281 (28.0%) (an increase of 12.8%).

How did the performance of these two cohorts compare?

- The GPA achieved by these two cohorts at the end of their first term rose from 2.89 in Fall 1993 to 3.05 in Fall 2002 (an increase of 5.54%).
- Comparable data for cohorts in the intervening years trace consistent curves (aside from a blip in Fall 1999, the first term of semester conversion).
- We can reasonably project that the Fall 2002 cohort will graduate with a cumulative GT GPA of 2.90 or slightly less (an increase of 4.69% over that of the Fall 1993 cohort).

Obviously, we cannot compare graduation data for these two cohorts, since the Fall 2002 cohort has just begun its Tech experience. Comparing the Fall 1993 cohort with the subsequent five cohorts (through Fall 1998), however, we find:

- Graduation rates after six years have held steady at 68-69%, while GPAs at graduation have crept upward from 3.01 to 3.05
- Graduation rates after four years have increased from 20% to 26%, while GPAs for students graduating in four years have increased from 3.17 to 3.24 (with most of that increase occurring from 1993 to 1994)
- GPAs and graduation rates for those taking longer than four years have changed far less significantly

A strong *prima facie* case can be made, then, that the upward shift in grades at Georgia Tech during the past decade reflects an upward shift in the capacity of students admitted to Georgia Tech to earn high grades. If held to the same absolute standards of performance as their predecessors, each successive class will likely receive higher grades, and increasing numbers within their ranks will move quickly through the Institute with impressive credentials. The

recent data on retention, which has shifted significantly upward, are consistent with this scenario.

Internal Factors

Even if one accepts the reasoning above and ascribes significant influence to external factors, this does not exhaust the subject of potential sources of grade inflation. For one thing, the argument above hinges on at least one major assumption: that students are being measured against consistent absolute standards from year to year. Some would argue that the standards should be elevated to reflect the increased capabilities of the students, and that grades should reflect performance relative to one's peers rather than relative to some enduring standard over time.

A cursory look at the grade distributions of various academic units, moreover, suggests that faculty in different units have not responded uniformly in assigning grades to the changing student cohorts of the past decade. Grades in some units have remained largely unchanged, while those in others have increased substantially. Thus, the sources of grade inflation clearly reside at least to some degree within the Georgia Tech faculty.

With this in mind, we have attempted to break down the available data on grading into the following categories:

- By academic unit
- By course level
- By tenure status of instructor

Ideally, one would like to examine a continuous time series of data covering all academic terms for the period under review. For this report, we have had to rely upon snapshots of selected terms. Much of our data regarding individual schools and course levels comes from a comparison of Fall 1993 and Fall 2002. For perspective, we have examined a less detailed comparison of Fall 1992 and Fall 2001. Data regarding tenure status comes from thorough analyses of two terms, Fall 1999 and Fall 2002, plus summary statements for Fall 2000 and Fall 2001. These statements also provide information regarding the numbers of grades issued by different units at each level.

Relevant data from all of these studies are included in the appendices to this report. Readers are invited to peruse them and draw their own conclusions. We would focus attention upon these points:

1) *the overall increases in GPA (from 2.82 in 1991 to 2.98 in 2001, and from 2.92 in 1993 to 2.99 in 2002) reflect a broad base of comparable increases occurring widely across colleges, schools, and programs*

    - 24 of 31 academic units moved with the trend or stayed largely unchanged in the 1991/2001 comparison, and 20 of those 24 also moved with the trend or stayed largely unchanged in the 1993/2002 comparison

- of those 20 units, only 7 moved up by more than 0.2 grade points in both comparisons, and most of those 7 increased by less than 0.3 grade points

2) *the overall increases in GPA occurred despite noticeable decreases in some units*

- 7 of 31 academic units moved against the trend in both comparisons, and 5 of those moved down by more than 0.1 grade points in both comparisons

3) grades increased at all course levels, with the most pronounced increases occurring at the 1000 and 4000 levels, and the least pronounced occurring at the 2000 level

4) the least divergence among units occurred at the 4000 level; the most occurred at the middle levels

- grades at the 4000 level increased or stayed the same in all but 5 units, and in only 1 unit was the decrease more than 0.2 grade points;
- at other levels, anywhere from 8 to 12 units moved against trend, and at the 2000 and 3000 levels approximately half of those downward movements exceeded 0.2 grade points; these were balanced by sharp increases elsewhere

5) *non-tenure track faculty, except in a few notable cases, consistently assign substantially higher grades than tenured and tenure track faculty*

- this rule holds especially true in upper level courses; in each of the four terms studied, non-tenure track faculty assigned A's at least 42% of the time in such courses, and in the two most recent terms they have assigned in excess of 34% B's as well; in almost all units, non-tenure track faculty assign higher grades in upper level courses than do tenured and tenure track faculty
- this pattern also prevails in lower level courses across many units, though in a few units where non-tenure track faculty assign significant numbers of grades, they have tended to assign lower grades in these courses than do tenured and, especially, tenure track faculty

6) tenure track faculty without tenure typically assign the highest grades of those teaching lower level courses and the lowest grades of those teaching upper level courses; this is especially true during terms when they assign large numbers of grades

- in Fall 2000 and Fall 2001, when tenure track faculty without tenure assigned approximately 22% of the grades in lower level courses, they

assigned GPAs in those courses of 3.23 and 3.25; GPAs assigned by other faculty cohorts in such courses during those terms ranged from 2.75 to 2.84

- in Fall 1999 and Fall 2002, when tenure track faculty without tenure assigned approximately 8% of the grades in lower level courses, they assigned GPAs in those courses of 2.88 and 2.83; GPAs assigned by other faculty cohorts in such courses during those terms ranged from 2.71 to 2.85

Implications

How do these changing patterns of grade distribution affect teaching and learning at Georgia Tech? What differences do they make for our students and faculty?

To answer these questions, we need first to consider the basic purposes grading serves:

1. to provide feedback and assessment to individual students, which may serve to a) reinforce learning objectives and b) offer incentives for performance;

2. to provide instructors with a) a means of shaping student learning and b) a tool for assessing the effectiveness of their pedagogy and the performance of various student cohorts; and

3. to provide information regarding performance to third parties such as employers, professional schools, fellowship and prize committees, promotion and tenure committees, accreditation teams, and Institute funding agencies.

Grade inflation – or, more accurately, grade compression at the top of the scale – clearly has implications for each of these. As grades grow increasingly concentrated at the top of the scale, they lose their ability to convey meaningful information about distinctions in student performance.

What happens then?

One supposition, frequently heard in discussions of the subject, is that *performance slackens among the best students*, who no longer have the ability to gain recognition for superior achievement. While this may have happened at Georgia Tech, such behavior is notoriously difficult to document. The changes in our student cohorts at admission, moreover, hardly suggest a population that is less likely to seek high achievement.

What seems more certain is that as grading loses its utility as a means of identifying distinction, *people turn to alternative sources of information about student performance*. Students seeking recognition in individual classes, for instance, might look more closely at their numerical averages. Or they might place greater emphasis on comments from instructors on key assignments rather than on the final grade itself. Students might think in terms of building a portfolio of academic accomplishments rather than merely a record of good grades.

These alternative forms of evaluation have significant implications for faculty, who must make the time and effort to provide them. Individual instructors might choose instead to retain a tougher final grading schedule with less compression at the top, but in deviating from prevailing norms they run the risk of alienating students and appearing to be less effective teachers than their colleagues. If they choose to accept grade compression as unavoidable, instructors sacrifice a ready means of sending signals to students and assessing their own effectiveness as teachers.

Outsiders looking to evaluate students likely also learn to place greater emphasis on elements in their records other than GPA. For many graduate and professional schools, this might mean relying more on scores from standardized tests. Others might take closer looks at the courses attempted by the students, much as many colleges today weigh the difficulty of the high school curricula taken by their applicants. Interviews and writing samples might likewise grow in significance. Some of these same elements will likely also figure prominently in the assessments of potential employers.

In their efforts to identify alternative markers of distinction, people assessing our students might also look toward those courses that have proven resistant to the overall trend toward compression. Such courses could well take on an exaggerated significance, which might in turn influence how students allocate their scholastic efforts.

Those looking to assess the overall effectiveness of our educational programs may also search for alternatives to grades earned. Accreditation experts routinely ask for alternative measures of assessing educational outcomes. P&T committees looking to assess teaching effectiveness might follow their lead, especially if they perceive that high grades have driven up student evaluations. It may only be a matter of time before state legislators, concerned about mounting strains on the budget for HOPE scholarships, also ask for measures other than GPA.

One underlying feature unites these various alternative sources of information: all will likely take considerably more effort to generate than does assigning grades.

Remedies

Potential Remedies for Grade Inflation

This sections reviews remedies for grade inflation, both proposed and attempted by other institutions. When available, dissenting opinions and data describing the outcome of the attempted reform are presented. Information presented here has been gathered largely from reports from other institutions addressing this issue in recent years. Additionally, some of the material comes from technical and non-technical literature on this subject. It is the goal of this section to review possible means of addressing the issue of grade inflation at Georgia Tech; specific recommendations for courses of action, if any, are not provided.

Those reforms proposed or implemented at other institutions include:

- Adoption of more clear and specific grade definitions
- Adoption of a plus/minus grading system
- Establishment of a University/Institute average GPA
- Expanded transcript data
- Changes to student honors
- Broad dissemination of grading definitions and policies
- Training for teaching assistants, adjunct faculty, and tenure-track faculty
- Self-calibration of grade distributions
- External calibration of grade distributions
- External enforcement of grade distributions
- Standardized testing
- Changes to student course evaluations

Each of these potential remedies is described in further detail herein. Most institutions, seeking to effectuate a university-wide shift in grading, have employed a combination of the strategies surveyed here.

It is also worth noting that a number of reports and authors have cited the need for a broader review of the issue of grade inflation nationwide and for broader remedial actions. Manhire [2000], for example, recommends a national study of grade inflation by a broader agency, like NSF, ABET, or ASEE, prior to considering developing academic standards to counteract apparent grade inflation. Other institutions have expressed concern that "recalibrating" their grading standards, in the absence of a broader national shift in grading, would hurt their students, making them less competitive for jobs and admissions to graduate/professional school. Don Drakeman, a Princeton politics lecturer and a company president, sums of this dilemma well, "(Curbing grade inflation at Princeton is) just going to allow the McKinseys of the world to say, 'I've got a kid from Princeton with a 3.4 (GPA) and kid from Stanford with a 3.8 – let's take the kid from Standford'"[Witte, 1998]. It is this committee's opinion that

these concerns be weighed with the perceived severity of the grade inflation at a particular institution when considering options to counter grade inflation.

Adoption of more clear and specific grade definitions

Grade definitions at Georgia Tech, peer institutions, and other universities have been described in Chapter 1 of this report. Georgia Tech's current grade definitions are brief, with little descriptive information linking the letter grade to the expected level of student achievement.

In one of the most extensive reports on this topic, the University of North Carolina at Chapel Hill Educational Policy Committee [2000] recommended that "clear and quantitative" guidelines be adopted for the University grading system, and these should be widely published so that there is a clear understanding of their meaning among students, faculty, administrators, and parents. The report provides descriptive meaning for each of the letter grades, A, B, C, D, and F, which clearly relate the meaning of the grade to the student's level of mastery of the material. The definitions provided in the report, such as that given below for an "A", are based upon earlier definitions provided by their committee on grading. All of the grade definitions used at UNC-CH are included in Chapter 1, under "Other Universities".

"'A': Outstanding mastery of course material. Students earning an "A" have exhibited performance far above that required for credit in the course and far above that usually seen in the course. The "A" grade should be awarded sparingly and should identify student performance that is relatively unusual in the course."

Adoption of a plus/minus grading system

As shown in Chapter 1, most peer institutions assign plus/minus grades, while Georgia Tech currently does not. While not reporting directly on the issue of grade inflation, the report by Cal State University, Los Angeles [Jordan *et al.*, 2002] has bearing one potential remedial measure – the implementation of a plus/minus grading system. Cal State implemented plus/minus grades (i.e., A through D and F, no A^+ and no D^-) in Fall 1996 and sought to examine the impact of this system on grade distribution. Data showed that, after this grading change, three-quarters of the grades assigned remained "whole grades" and that minus grades outweighed plus grades almost two-to-one. Overall GPAs for precollegiate and graduate coursework declined moderately (0.02 and 0.10%, respectively), while GPAs for lower and upper division courses tended to increase (0.08 and 0.10%, respectively). This data suggests that the institution of a plus/minus grading system may not be effective in combating grade inflation.

Establishment of a University/Institute average GPA

While the UNC-CH report [2002] does not suggest that an official curve for grading be mandated, it does suggest the implementation of university norm for undergraduate GPAs. Only a few other reports make a similar recommendation - for example, University of Wisconsin-LaCross [Bulk and Monte, undated]. Rather than a university-wide curve,

Rosovsky and Hartley [2002] believe that standard grade distributions may make sense particularly in larger classes.

At UNC-CH, the average undergraduate GPA of each individual unit (i.e., department or school) should fall within the 2.6 to 2.7 range. "University-wide undergraduate GPA of 2.6 to 2.7 would lead to a distribution of letter grades, that, while not being unduly punitive, would better reflect the substantive meaning of the letter grades" [UNC-CH, 2002]. The UNC report also recommends the establishment of mechanisms to insure observation of this suggested norm. The proposed mechanisms for this include: (1) wide publication, by the Provost, of the GPAs of each unit, noting those that do meet the norm, (2) reminders to the faculty, from the Provost, as to the meaning of the letter grades and the target GPA, and (3) after a three year transition period, units failing to meet the norm will be penalized budgetarily.

Expanded transcript data

Providing additional information on a transcript may allow outsiders to better evaluate a student's performance in context with his/her peers. Also, when institutions do take action to curb grade inflation, there may be some concerns that outsiders will not recognize that the grades recorded on a student's transcript reflect the more stringent standards at that university. Some universities, including Columbia, Dartmouth, Indiana, UNC-CH, and Eastern Kentucky, have elected to provide additional contextual information on student transcripts. University of Miami [Carbollo *et al.*, 2001] opined, "Surely the computer age makes it possible to offer students a more meaningful description of their performance in each class."

Some universities, like UNC-CH, have added statements to student transcripts notify outsiders to grade definitions and policies that may be particular to an institution. At UNC-CH, for example, this notice on the transcript reads,

"The University of North Carolina at Chapel Hill strictly monitors its grading system in order to insure fairness and consistency both across units and over time. Therefore, the grades on this transcript reflect an overall grade average of 2.6-2.7. Special care should be taken in comparing grades on this transcript with grades form colleges and universities that have not controlled grade inflation. See the distribution of grades on the back of this transcript."

Transcripts from Columbia and Dartmouth give some additional information. Columbia transcripts show the percentage of the class that earned the same grade as the student, while those at Dartmouth give the median class grade [Abrams, 2002]. However, it is unclear that this additional information on the transcript has brought about any change in grading. At Dartmouth, for instance, the number of A's given remains 80-90% [Westfall, 2000].

Indiana University at Bloomington uses an indexed transcript to allow outsiders to better gauge student performance. In addition to the grade for each class, the transcript gives (1) the number of students who received the same grade or higher, (2) the grade distribution, (3) the average, (4) the average GPA of enrolled students, and (5) the percentage of students in that

class who major in that department. Students receive copies of this transcript and can choose to send it or a traditional transcript to outsiders.

The University of Miami is also considering some form of "indexed transcript". In addition to the traditional information, University of Miami transcripts might also report the average GPA for the course and the number of A's awarded might be shown [Carbollo et al., 2001].

Korshin [2003] at the University of Pennsylvania provides a dissenting opinion. Korshin believes that indexed or expanded transcripts only call outside attention to the "lack of grading standards" at a university that opts for this solution. Korshin, instead, favors external enforcement of grading standards and standardized testing. Both of these approaches are described further in this section.

Changes to student honors

A few reports on grade inflation specifically address the non-uniformity of grading across various units on campus and the resulting impact on honors awarded to students at graduation. Specifically, Wankat and Oreovicz [2002] state, "We should stop punishing students in departments that control grade inflation. Basing university honors and other awards strictly on GPA puts students in those departments at a disadvantage." An ad hoc committee formed a UNC-Ashville [2000] concurs and recommended the University lower its GPA requirements for Latin honors. The UNC-Ashville committee sought to make the award of honors "fairer" to those students enrolled in more "objective" areas of study and those who seek out the more challenging courses.

Rosovsky and Hartley [2002] proposed the reduction of the typical A to F grading system to a simpler system of "honors", "pass", and "fail" to reestablish "pass" as an average and to reserve "honors" for the truly exceptional.

Broad dissemination of grading definitions and policies

In addition to building awareness of grade definitions and grade distributions among the faculty, administrators, and students, UNC-CH makes a point of making parents aware of the University's grading policies. To this end, at the start of each academic year, the UNC-CH mails to parents of incoming freshman a substantive description of the grading system and a description of the grade distribution. In addition, UNC-CH includes a statement on student transcripts (X.X) notifying the reader of the University's grading policies.

Training for teaching assistants, adjunct faculty, and tenure-track faculty

To effectuate an Institute-wide reform on grading, it is important to make teaching assistants and adjunct faculty, in addition to tenure-track faculty, aware of Institute grading policies. That is, those who perform the evaluations of students must "buy-in" to the Institute's objective to curb grade inflation. Rosovsky and Hartley [2002] believe that greater comparability of grading standards would result by engaging in an "institutional dialogue" where a key objective would be to give guidance and training to faculty on evaluating student performance. They also note that the academic profession is "the only one that provides

virtually no formal training or guidance to new entrants concerning one of their primary responsibilities: teaching and evaluation [Rosovsky and Ameer, 1998]".

Rosovsky and Hartley [2002] cite adjunct teachers, in particular, as "more tolerant" graders. University of Southern California (USC) [1999] specifically recommends that adjunct faculty attend orientation sessions before or during their first semester of teaching. Also, at UNC-CH, it was recommended that each unit at the start of each semester explain to its graduate teaching assistants their responsibility for fair and objective grading and conformity to the University norm.

Data published in this report shows that at Georgia Tech non-tenure track faculty, except in a few notable cases, consistently assign substantially higher grades than tenured and tenure track faculty. These variations in grade assignments may suggest that greater uniformity in grade definitions is needed.

Self-calibration of grade distributions

A common strategy among institutions seeking to curb grade inflation, including Duke and Harvard among others, is the publication of grade distributions within units and across campus. For example, at UNC-CH, it was recommended that each department annually review its grading practices and relate them to grading practices across the university to build awareness within a department of how its grade distribution compares to others across campus. Also, at UNC-CH, to build awareness among the faculty, each faculty member will be provided annually with a report of their grading and information about grading patterns across their department, in other departments, and in other divisions. USC [1999] tracks grading by each professor over a period of several years, providing the professor and unit head with this data to prevent grades from "creeping up". USC proposed to provide professors with both a list of courses taught over a 3-4 year period (with class GPA, ratio of class GPA to cumulative student GPA, and letter grade distribution) and similar data for a comparison group (e.g., all introductory Engineering courses).

Examination of instructor grading, even self-examination, may be felt by some to infringe upon the academic freedom enjoyed by faculty. In addressing grade inflation at the University of Arizona, Penner [undated] emphasizes that each faculty member "must be free to grade as he or she thinks right", respecting the diversity that exists among UA's departments, courses, classes, teachers, and students. Penner sees the solution to grade inflation as a "change achieved through the innumerable, freely made decisions of all the teachers" and *not* from rules imposed on the faculty from above.

External calibration of grade distributions

In addition to "internal" or self-calibration of grading by the faculty via review of their grades in comparison to unit and institute grades, some universities have proposed external review of grading within units. At UNC-CH, for example, deans and departmental chairs bear the responsibility of monitoring grading within their unit, addressing those instructors whose practices do not meet the norm. In addition, an existing committee at UNC-CH - the

Educational Policy Committee - also monitors the undergraduate grading system and reports annually to the Faculty Council to recommend remedial actions, as needed. At USC [1999], it was proposed that chairs and program heads regularly receive a report giving grading trends for individual faculty in their unit.

Some favor "true" external review of grading, through the use of outside examiners. Korshin [2003], for example, likes the system of external examinations used at British Universities. Under this system, at the end of each year, a team of examiners visits each unit, reviews all grades awarded that year, and adjusts grades and honors based on some broader criteria. Korshin [2003] readily admits, however, that such a system is unlikely to be used in American universities.

External enforcement of grade distributions

Some universities have elected to enforce grading and grade distributions by tying unit conformance to university policies with their budgets. After a three-year period under the new grading guidelines, units at UNC-CH failing to meet the norm will be penalized budgetarily. Manhire [2000], who has researched extensively the issue of grade inflation and has authored a number of academic papers on the subject, also recommends the enforcement of academic standards through budgetary control.

Standardized testing

In addition to budgetary enforcement of grading, Manhire [2000] recommends standardized testing of university students. At USC, one recommendation is to have standardized exams for different sections of the same course, as many sections of foundational courses may be offered each semester with wide variations in grades awarded. This would require instructors to agree upon a common syllabus and set of learning objectives.

Korshin [2003] also favors a system similar to the French baccalaureat. Here, a national exam is given to students in a given major. Each university, then, would determine the appropriate GPA for a student's performance on the national exam.

Changes to student course evaluations

Several universities and reports [Aleamoni and Kennedy, 1985; Rosovsky and Hartley, 2002; Wilson, 1995; Williams and Ceci, 1997] have emphasized the role of student evaluations in the overall inflation of grades. Several universities have proposed to change the way teaching is evaluated to remedy the perceived or actual influence of student evaluations on grading. The UNC-CH report [2000] recommends that student evaluations be changed to purge them of factors (e.g., expected grade, size of course, student assessment of how demanding the course is) that "are known to affect student evaluations but are not germane to assessment of the instructor's performance." At the University of Miami, it was recommended that annual reviews of faculty teaching should place more emphasis on "discursive" replies to student evaluations, rather than "numerical" replies. Smith at the University of Michigan [2001] sees student evaluations as a primary cause of grade inflation and favors a more balanced method for teacher evaluations, including peer evaluation.

Chapter 5

Conclusions

In fall of 1972, the average GPA for undergraduate students at Georgia Tech was 2.45, by fall 2002, the average GPA for undergraduate students was 2.86. The trend shows the average GPA increasing each term. Each spring term has a higher GPA than the other two terms. There is no question that grade compression is occurring at Tech, as well as elsewhere in academia. It would be much harder to prove that the compression is actually the inflation, as the undeniable fact (with plentiful evidence throughout this report) that quality of our students has also increased.

Dealing with such a controversial issue, it is not easy to decide what conclusions should be drawn from the study. This committee is of the opinion that Professor Marr's suggestion should be supported (the initiative to the appointment of *ad hoc* committee with the charge of exploring and evaluating what quality undergraduate academic experience is, or should be at Georgia Tech, and ways of sustaining the highest possible quality commensurate with the abilities of our students). There is no better way for us to serve in the best interests of the students than to find out how to maximize their opportunities. In the words of Bertold Brecht:

> *"The world of knowledge takes a crazy turn*
> *When teachers themselves are taught to learn."*

Chapter 6

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