

Hamilton College Strategic Planning Subcommittee Report, Summer 2008
Academic Program

AN ACADEMIC PROGRAM CENTERED ON HAMILTON COLLEGE STUDENTS

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INTRODUCTION

While the success of Hamilton College depends on the ongoing commitment of numerous constituencies including faculty, administration trustees, alumni, and friends, the subcommittee's work has been guided by the view that the academic program should be clearly and emphatically centered on serving the students. As Dean Urgo wrote, "We are especially interested in preserving a universal sense that students come first in all College priorities."ⁱ We begin, therefore, with a brief snapshot of the students.

• Who are Hamilton students?

Over the past 5 years, students choosing to come to Hamilton have improved in every measurable category: the number of applicants has reached an all-time high (**FIGURE 1**); the number of early decision applications has risen; the yield percentage has risen; the average SAT scores have improved (**FIGURE 2**); high school class rank has improved; our students are more ethnically, culturally, and geographically diverse (**FIGURE 3**).ⁱⁱ

• What do they study?

Hamilton College offers degrees in 47 departments and programs. Over the past five years, Economics (average 73 graduates per year), Government (average 51 graduates per year), and Psychology (average 33 graduates per year) have continued to be the largest departments in terms of graduates by concentration. Psychology is closely followed by a number of other departments including English and Mathematics. Since the adoption of the Open Curriculum, there have been significant increases the numbers of graduates concentrating in Mathematics and World Politics (**FIGURE 4**).ⁱⁱⁱ

• What do they do after graduation?

Career outcomes have been stable over the period 2002-2006. Six months after their graduation, most respondents to the Maurice Horowitch Career Center Survey report that they are either employed (average 71%) or in advanced or post-Baccalaureate studies (average 21%). The two largest areas of employment for Hamilton graduates are education (average 18%) and finance (average 15%) (**FIGURE 5**).^{iv}

• What changes can we expect over the next five years?

Significant changes in national demographic patterns may begin to affect institutions of higher education in the immediate future. Beginning in the year 2010, the number of high school graduates will begin a gradual decline that will last until 2018. This demographic decline will be particularly strong in New England and the Northeast. In addition, higher percentages of high school students will be from families with lower incomes and from families with no experience in college education. The percentage of students from currently under-represented minorities (particularly Hispanic/Latino) will account for half of all high school graduates (**FIGURE 6**).^v

THE OPEN CURRICULUM AND THE LIBERAL ARTS

• The Open Curriculum

The Subcommittee on Academic Program believes that the Open Curriculum is central to the Hamilton educational experience. The Open Curriculum is a student-centered curriculum that entrusts students with the freedom and responsibility for shaping their own educational experiences. We believe this promotes academic achievement and personal growth.

First adopted for the class of 2005, the Open Curriculum has quickly become the centerpiece of Hamilton College curriculum and a defining characteristic of the College's national and international identity. It has been a key factor in attracting highly motivated students to the College. For example, over the past few years there have been dramatic jumps in the numbers of both Early Decision and overall applications.^{vi} A 2005 survey by GDA (George Dehne and Associates) RESEARCH indicated that 75% of current and 70% of enrolling students described the unique curriculum at Hamilton College as either an "Extremely Important" or a "Very Important" factor in their choice to attend Hamilton. The Open Curriculum far outweighed other factors such as study abroad opportunities, emphasis on writing, research opportunities, or emphasis on oral presentation skills.^{vii}

The information from the GDA RESEARCH survey complements results from the Senior Survey Trend Analysis 2000-2007. In particular, since the adoption of the Open Curriculum, there has been an interesting increase in students' satisfaction with their educational experience. In 2007, for example, over 80% of our "A" students reported that they would attend Hamilton again (FIGURE 7).^{viii} In other words, the Open Curriculum is especially successful with our very best students.

The subcommittee recommends that all parts of the Strategic Plan for the Academic Program should follow from our enthusiastic support of the Open Curriculum.

• The Liberal Arts and Breadth of Learning

While the Open Curriculum has become the centerpiece of the Hamilton College academic program, the subcommittee recognizes that it is not an end in itself, but a means of achieving a more fundamental goal: providing a first-rate liberal arts education in which our students balance the depth of their knowledge in specific disciplines with the breadth of learning necessary for living in the intellectually and culturally diverse world of the 21st century. In trying to achieve the balance between depth and breadth, Hamilton students face a number of challenges.

EIGHT CHALLENGES

1) Balancing Departmental and College-Wide Agendas. The adoption of the Open Curriculum may have unintentionally encouraged an increase in the autonomy of Departments, shifting the focus of the Academic program from the students (where we think it should be) to the faculty. We encourage a stronger balance between these interests.

In a 2005 overview of his findings in the Mellon Assessment Project, Dan Chambliss arrived at a similar conclusion:

"Most students – perhaps 70%-80% - are not committed to any narrow academic field...Academic disciplines, therefore, are an administrative unit for the College; for the students, though, the curriculum is a vehicle for expanding their intellectual life, developing meaningful relationships with other students and faculty, and enhancing a number of general liberal arts skills and values. Discipline-specific knowledge is, for the majority of our students, somewhat irrelevant as a strong attraction or an important result of their Hamilton experience."^{ix}

We hope that the CAP, as the elected committee with purview over curricular issues, will increasingly serve as the guardian of college-wide interests, providing a balance for initiatives generated through departmental agendas. We recommend that the CAP develop ways of encouraging departments to invest in the notion of a broad liberal arts education that balances breadth with depth for all Hamilton students.

2) Advising and the Open Curriculum. The success of the Open Curriculum depends on an excellent advising system. Assessments of our current advising system vary. The Senior Survey Trend Analysis 2000-2007 indicates that Hamilton students are much more satisfied with first-year advising than were students at peer institutions (**FIGURE 8**).^x Similarly, the 2006 study of advising at Hamilton by Tim Elgren and David Paris suggests that satisfaction with the advising system is growing.^{xi}

On the other hand, the Mellon Assessment Project 1999-2005 found that 32.4% of the respondents described their relationship with their freshman/sophomore advisor as “bureaucratic – only contact was for registration” and 7.7% described the relationship as “bad.”^{xii} In his interpretation of the second set of numbers, Dan Chambliss writes, “The *advising program* for undergraduate students, focusing on academic planning, seems to be largely irrelevant, with the advisor usually seen as a functionary.”^{xiii} To correct this perception, we suggest that students be given a greater voice in the selection of their advisors after the first semester.

A mediocre advising system cannot be acceptable in a student-centered curriculum. We recommend that the Dean of Faculty, working in association with the Dean of Students, immediately establish a special task force to evaluate our current advising system and to come up with specific ideas for improving it. Good advising is a vital part of our academic program.

3) Maintaining High Academic Standards. As **FIGURES 9 – 10** show, the introduction of the Open Curriculum has been accompanied by a rise in average grades. **FIGURE 10** shows that the rise in the number of “A’s” is directly associated with a corresponding drop in the number of “B’s” and “C’s.”

There are at least two ways to interpret these data. On one hand, to the extent that grades represent an objective assessment of academic achievement, higher grades may indicate that our current students, taking courses of their own choice, are actually doing better work than students a few years ago. On the other hand, to the extent that grades serve as a pedagogical tool to encourage high achievement, it may be that our grading standards have not kept pace with the rising quality of Hamilton students.

Recent data from the Wabash National Survey of Liberal Arts Education, administered to Hamilton first-year students for the first time in Fall 2006, appear to support the latter view. One part of the survey raises a particular concern: in a scale measuring “Degree to which student reports working hard academically, feeling challenged in class activities, and called on to integrate material,” Hamilton ranked only 6th of 11 liberal arts colleges in the survey, and only 7th of 19 of all institutions in the survey.^{xiv} If our first-year students did not find their courses to be sufficiently challenging, we need to find out why.

We recommend that the Dean of Faculty immediately establish a task force to study academic standards (including, but not limited to, the issue of grade inflation). The task force should prepare a report for the Dean of Faculty, the CAP, and the College community. Maintaining high academic standards is essential to the mission of the College.

4) Accessible Courses. The Mellon Assessment Program reports that sizeable numbers of juniors and seniors, having finished much of the work required for their concentrations are unable to register for courses that would allow them to explore new areas.^{xv}

We recommend that the CAP encourage departments across the curriculum to introduce additional challenging and engaging courses open to non-majors, including juniors and seniors,

without prerequisites. We agree with Dan Chambliss that we should make every effort to “Open the doors to students who want to learn.”^{xvi} Courses designed for non-majors would contribute significantly to breadth of learning at the College.

In addition, since the College recently dropped the sophomore-seminar requirement, we think that the CAP should make a special effort to promote the development of interdisciplinary courses and other courses that aim to make connections among various disciplines. A broad education depends on encouraging students to think beyond narrow departmental boundaries.

5) Science Courses and Quantitative Courses. Dan Chambliss, writing for the Mellon Assessment Project, and the Quantitative Literacy Committee have expressed concerns that the Open Curriculum may have resulted in an increase in the numbers of students that do not take courses in the sciences or in course with a significant quantitative component.^{xvii}

Information from the CAP suggests that the numbers of students who do not take courses with significant quantitative components or in the sciences is relatively small, but the situation should be monitored.^{xviii} We recommend against eroding the Open Curriculum by adding hidden distribution requirements. Instead, we agree with the conclusions of the Quantitative Literacy Committee:

A de-facto math-science requirement is undesirable; the skills that students learn should preferably occur in a breadth of courses across the traditional divisions of the sciences/math, humanities, arts, and social sciences. This will allow more students to develop quantitative skills in subjects in which they already have knowledge and with which they have a strong intellectual engagement.^{xix}

6) Development of Information and Media Literacy. Information literacy plays an increasingly vital role in building leaders of tomorrow. The American Library Association notes, “to be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information.”^{xx} Our students also need to learn how information in all formats (visual, aural, analog, and digital) can be most effectively communicated and presented.

We encourage the development of information and media literacy across the curriculum to ensure that our students have the necessary skills to function creatively in our increasingly complex global society.

7) Effective Communication Among Academic Support Units and Among Service Learning Initiatives. The success of the Open Curriculum depends on effective communication among students, faculty, and academic support services (the library, instructional technology services, the writing center, the quantitative literacy center, the oral communication center, the language lab, the ESOL program, internship/fellowship opportunities, etc.). We recommend the formation of a committee composed of representatives of all these constituencies. The purpose of this committee would be to enhance communication, create greater awareness of opportunities, and encourage creativity.

We see a similar need to better coordinate the various service-learning initiatives on campus (HAVOC, Project SHINE, VISTA, Bonner Leaders, the Levitt Center, etc.). We recommend that the Dean of Faculty charge the Associate Dean of Faculty with establishing a single clearing house for these various initiatives in order to increase student awareness of opportunities and to encourage formal and informal learning through project-oriented initiatives.

8) The Academic Calendar. The Subcommittee on Academic Program considered whether Hamilton's academic program should be conducted throughout the whole calendar year instead of the current practice. Some members of the Subcommittee concluded that, while the subject is worthy of consideration, the issues surrounding it extend far beyond curricular matters; the

Subcommittee does not feel that it is properly constituted to conduct a study of such a broad matter. Consequently, the Subcommittee recommends that, as part of the second phase of the planning process, the Executive Committee of the Strategic Plan consult with appropriate members of the various subcommittees to evaluate the probable benefits and costs of a year-long academic calendar.

CONCLUSIONS

The adoption of the Open Curriculum beginning with the class of 2005 marked a fundamental change in the College's academic program. Enthusiastically endorsed by students, potential students, and faculty, the Open Curriculum gives the College enormous potential for future development.

The continuing success of the Open Curriculum, however, will depend on adequate planning and cooperation among all College constituencies. As the College began to phase in the new curriculum beginning in 2001, we made surprisingly few college-wide changes to accommodate it.^{xxi} Some of the programs (such as the Sophomore Seminar) that we did introduce as a part of the new curriculum have since atrophied. This strategic plan provides an important opportunity to reconsider the merits of the Open Curriculum, and to think about some of the challenges we face.

The major findings of the Subcommittee on Academic Program are these:

- Hamilton's academic program should be centered on the students.
- The Open Curriculum is a defining characteristic of Hamilton's academic program, providing students with both the freedom and the responsibility for shaping their own education.
- The Open Curriculum is not an end in itself, but means for achieving a liberal arts education that balances depth of knowledge in a specific discipline with breadth of learning.
- The academic program faces several challenges. These include the need to balance departmental agendas with the college-wide interests; the need to provide an excellent advising system; the need to maintain high academic standards; the need for departments across the curriculum to develop engaging and challenging courses accessible to non-majors. To address these issues, we make four specific recommendations:
 - 1) The CAP should focus its mission more specifically on balancing departmental interests with college-wide interests.
 - 2) We recommend that the Dean of Faculty establish a task force to study the advising system and to generate ideas for improvement.
 - 3) We recommend that the Dean of Faculty establish a task force to study academic standards including, but not limited to, the issue of possible grade inflation.
 - 4) We recommend that the CAP encourage departments across the curriculum to develop challenging, engaging courses accessible to non-majors, including juniors and seniors, without prerequisites.

Figure 1. Monica Inzer, Admissions: 10-Year Trends

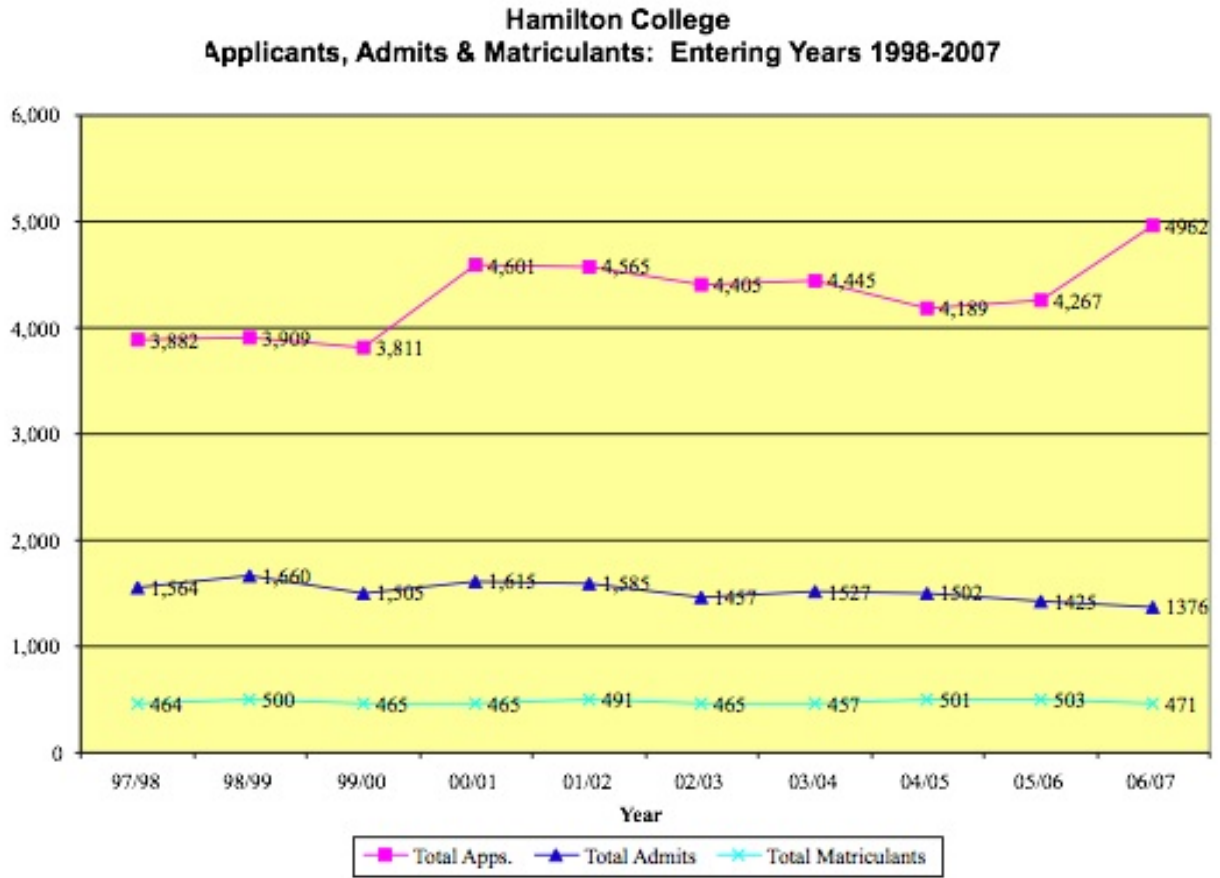


Figure 2. Monica Inzer, Admissions: 10-Year Trends

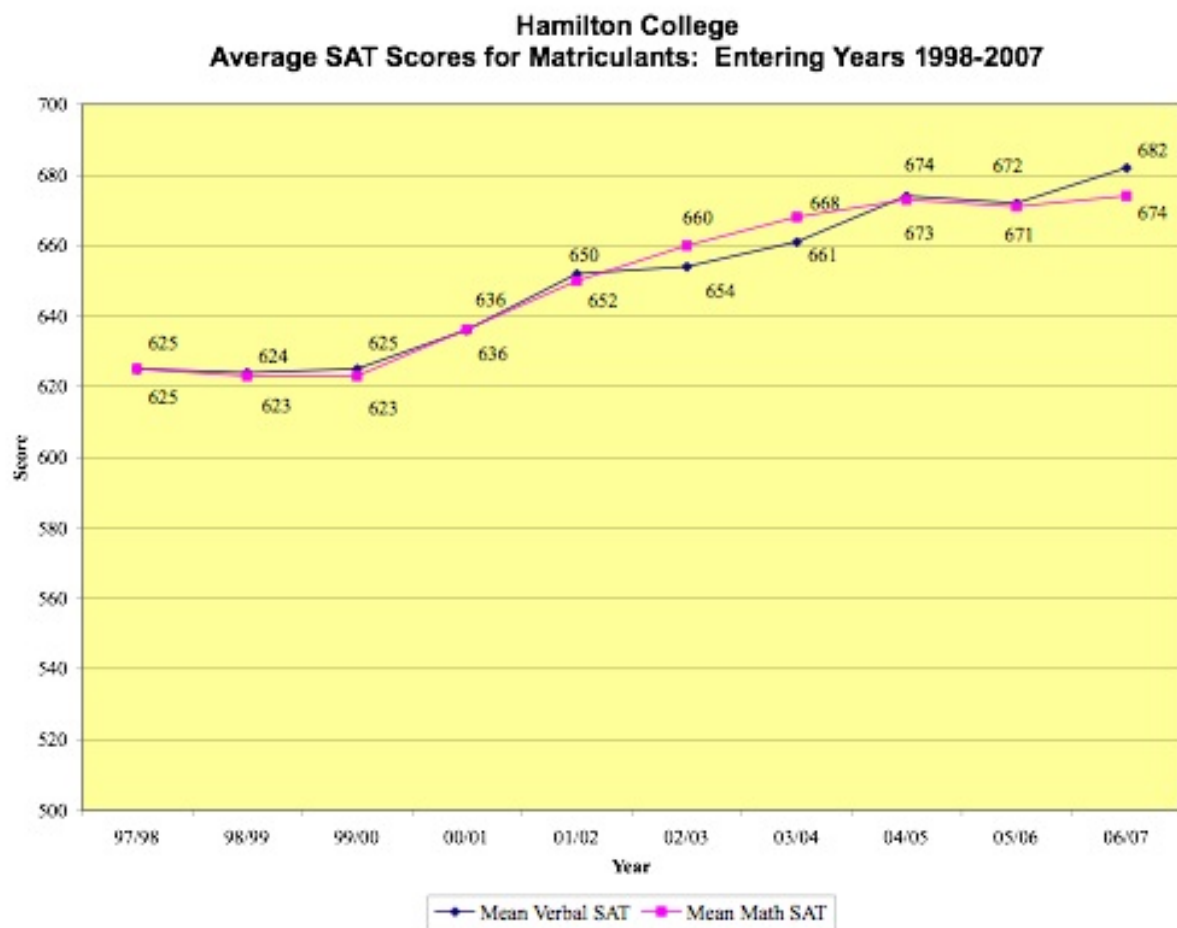


Figure 3. Monica Inzer, Admissions: 10-Year Trends

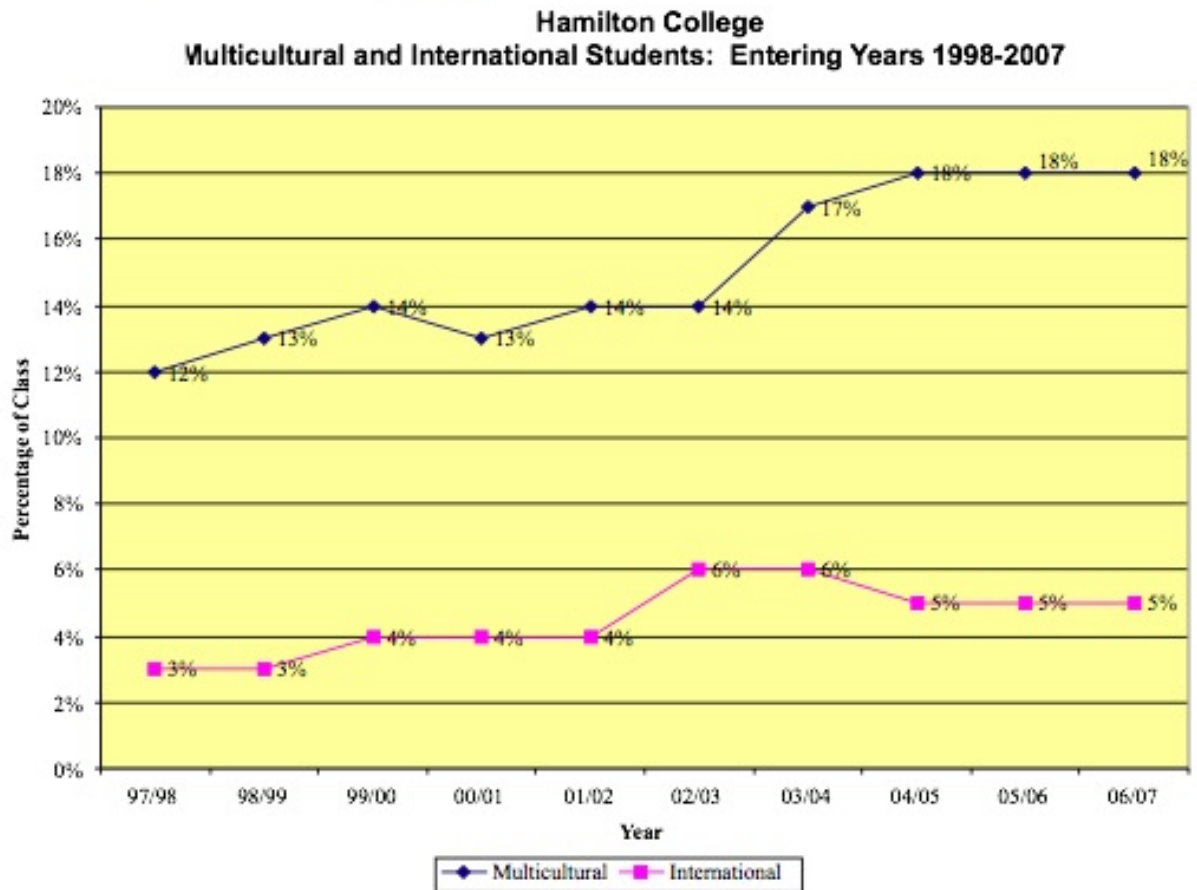


Figure 4. Kristin Friedel and the Office of the Registrar, Graduates by Concentration

Concentration	2003			2004			2005			2006			2007		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
AFRICANA STUDIES	0	3	3	1	1	2	1	1	2	0	4	4	0	4	4
AMERICAN STUDIES	2	4	6	1	5	6	2	0	2	2	1	3	0	0	0
ANTHRO-ARCHAEOLOGY	0	6	6	1	0	1	2	1	3	0	2	2	0	0	0
ANTHROPOLOGY	4	7	11	2	9	11	1	4	5	3	9	12	2	6	8
ART	5	13	18	5	15	20	8	9	17	9	9	18	6	9	15
ART HISTORY	5	8	13	0	11	11	1	7	8	2	11	13	0	6	6
ASIAN STUDIES	0	1	1	3	6	9	3	1	4	2	2	4	2	2	4
BIOCHEM/MOLEC.BIO	1	7	8	1	1	2	4	0	4	1	2	3	4	3	7
BIOLOGY	7	9	16	3	10	13	6	9	15	7	7	14	5	23	28
CHEMICAL PHYSICS	New03-04			3	0	3	1	0	1	0	0	0	0	0	0
CHEMISTRY	5	6	11	9	2	11	6	9	15	4	6	10	7	7	14
CHINESE	2	3	5	5	2	7	3	3	6	7	2	9	3	3	6
CLASSICS-LANG & STUDIES	5	4	9	3	7	10	5	3	8	1	3	4	4	1	5
COMMUNICATN STD	4	9	13	4	8	12	8	4	12	0	1	1	1	1	1
COMMUNICATION	New04-05					1	0	1	2	1	3	5	8	13	
COMPARATIVE LIT.	1	3	4	0	5	5	2	8	10	2	5	7	5	5	10
COMPUTER SCIENCE	23	1	24	5	1	6	6	0	6	6	1	7	3	0	3
CREATIVE WRITING	6	5	11	6	10	16	4	5	9	4	13	17	1	6	7
DANCE	0	1	1	0	2	2	0	6	6	0	3	3	0	1	1
EAST ASIAN STUDIES	0	2	2	0	0	0				1	0	1			
ECONOMICS	52	12	64	60	15	75	50	15	65	68	20	88	53	22	75
ENGLISH	7	19	26	8	17	25	15	18	33	12	25	37	14	10	24
ENVIRONMENTAL STUDIES	New 05-06									0	1	1	1	1	2
FOREIGN LANGUAGES	0	3	3	1	0	1	0	1	1	1	1	2	0	1	1
FRENCH	4	13	17	1	12	13	1	8	9	6	16	22	2	7	9
GEOARCHAEOLOGY	0	3	3	0	1	1	0	0	0	0	2	2	0	1	1
GEOLOGY	6	9	15	4	9	13	1	8	9	6	5	11	4	2	6
GEOSCIENCE	New 06-07											2	1	3	
GERMAN	0	1	1	0	1	1	2	0	2	5	2	7	1	0	1
GOVERNMENT	39	16	55	27	18	45	28	23	51	37	13	50	34	20	54
HISPANIC STUDIES	New05-06									0	1	1	3	7	10
HISTORY	7	6	13	5	6	11	13	11	24	11	7	18	11	7	18
INTERDISCIPLINARY	1	1	2	5	1	6	1	2	3	3	2	5	1	2	3
MATHEMATICS	12	8	20	14	7	21	18	11	29	27	19	46	20	13	33
MUSIC	5	0	5	4	3	7	0	3	3	2	2	4	3	1	4
NEUROSCIENCE	4	7	11	0	7	7	6	6	12	0	11	11	3	8	11
PHILOSOPHY	11	12	23	18	6	24	6	3	9	11	13	24	12	2	14
PHYSICS	5	1	6	5	2	7	7	0	7	6	2	8	5	4	9
PSYCHOLOGY	7	28	35	6	26	32	7	21	28	6	32	38	9	24	33
PUBLIC POLICY	3	4	7	9	8	17	13	9	22	13	5	18	9	6	15
RELIGIOUS STUDIES	5	3	8	3	3	6	2	3	5	4	4	8	8	3	11
RUSSIAN STUDIES	1	0	1	2	0	2	0	1	1	1	1	2	3	0	3
SOCIOLOGY	1	11	12	4	20	24	2	12	14	7	17	24	3	13	16
SPANISH	1	7	8	4	10	14	2	12	14	4	10	14	3	8	11
THEATRE	6	8	14	2	4	6	3	5	8	2	7	9	7	5	12
WOMEN'S STUDIES	0	7	7	0	4	4	0	3	3	0	6	6	0	5	5
WORLD POLITICS	2	10	12	6	7	13	4	6	10	14	15	29	17	7	24
TOTAL # OF CONCEN	249	281	530	240	282	522	245	251	496	299	321	619	275	264	539
# DOUBLE CONCEN	28	39	67	28	37	65	35	38	73	57	60	117	39	45	84
TOTAL # STUDENTS	221	242	463	212	245	457	210	213	423	242	261	502	236	219	455

Figure 5. Maurice Horowitz Career Center, Career Outcomes 2000-2006

Class of:	Grads	Employed	Advanced/Graduate Studies
2000	362	76%	18%
2001	347	71%	17%
2002	328	71%	19%
2003	-	-	-
2004	387	69%	23%
2005	349	69%	23%
2006	401	71%	20%

Figure 6. Monica Inzer. Demographic Trends: Planning for our Future. Presentation to the Faculty November 7, 2006

General Projections
➤ Nationally, the number of high school graduates will increase every year until 2009; beginning in 2010, there will be a gradual decline until 2018
➤ The proportion of students from currently under-represented ethnicities (particularly Hispanic/Latino) is increasing and will account for approximately half of all graduates in the next decade
➤ High school graduates of the future will include higher percentages coming from families with lower incomes and more that are first-generation to college
➤ Men will continue to graduate from high school and attend college at a lower rate than women

Figure 7. Gordon Hewitt, Senior Trend Analysis 2000-2007

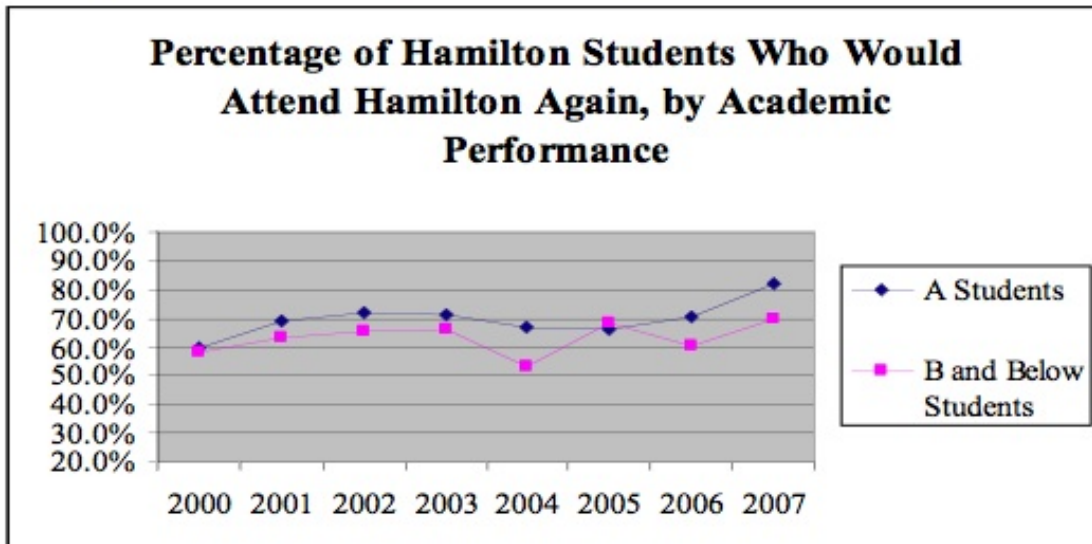


Figure 8. Gordon Hewitt, Senior Survey Trend Analysis 2000-2007

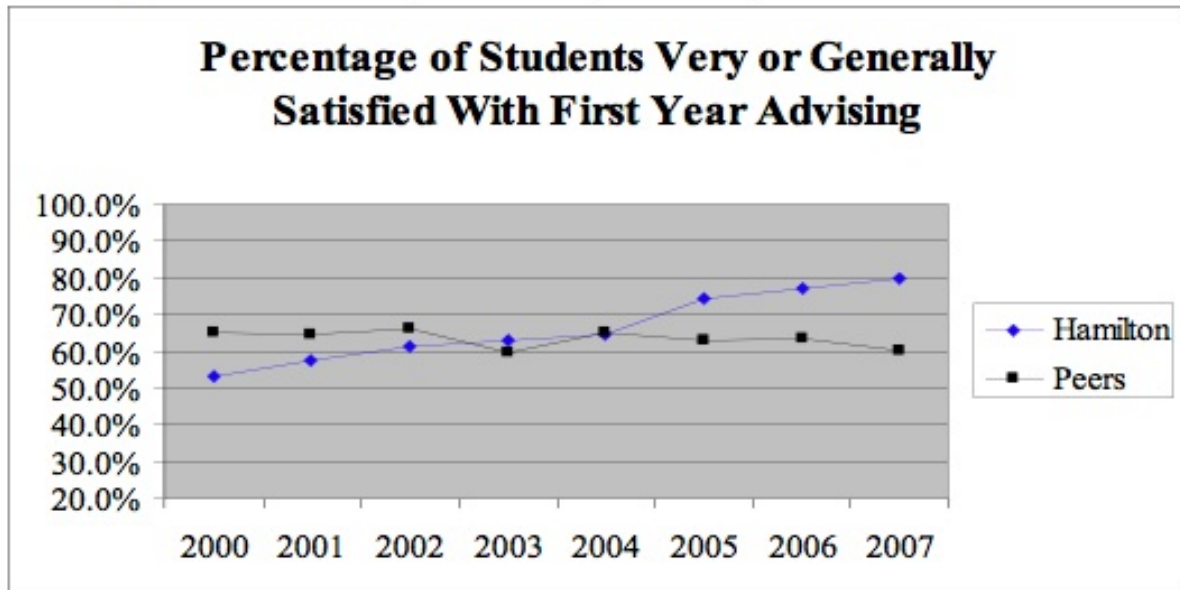
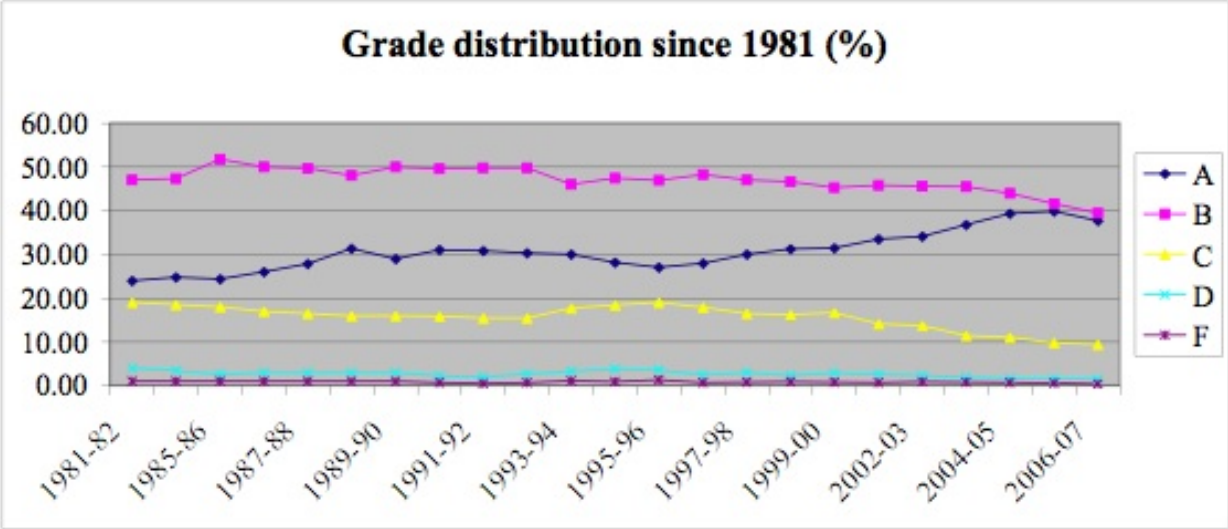


Figure 9. Kristin Friedel and the Office of the Registrar, Grade Distribution 1981-2007

Percentage of Grades by Grade Category							
	Total	A	B	C	D	F	other
HAMILTON							
1981-82	14,471	24.00	47.00	19.00	4.00	1.00	5.00
1984-85	14,564	24.80	47.30	18.50	3.50	1.00	4.90
1985-86	14,480	24.40	51.70	18.00	2.60	1.00	2.30
1986-87	14,761	26.00	50.00	17.00	3.00	1.00	3.00
1987-88	14,246	27.80	49.70	16.50	3.00	1.00	2.00
1988-89	13,494	31.30	48.00	16.00	3.00	1.00	1.00
1989-90	13,313	29.00	50.00	16.00	3.00	1.00	1.00
1990-91	13,249	31.00	49.60	15.90	2.30	0.70	0.50
1991-92	13,433	30.80	49.80	15.50	2.00	0.50	1.40
1992-93	13,670	30.30	49.80	15.50	2.70	0.70	0.70
1993-94	13,240	30.00	46.00	17.70	3.30	1.10	1.90
1994-95	13,228	28.20	47.40	18.40	3.80	0.90	1.30
1995-96	13,571	27.00	46.90	19.00	3.60	1.30	2.20
1996-97	13,954	28.00	48.20	17.90	2.50	0.70	2.70
1997-98	14,103	30.00	47.00	16.50	3.00	0.80	2.70
1998-99	14,339	31.22	46.56	16.26	2.31	0.89	2.76
1999-00	14,632	31.45	45.27	16.72	2.90	0.80	2.86
2000-01							
2001-02	15,014	33.50	45.76	14.08	2.58	0.75	3.33
2002-03	15,182	34.08	45.61	13.72	2.36	0.94	3.29
2003-04	15,097	36.74	45.43	11.47	1.96	0.78	3.62
2004-05	14,924	39.30	43.88	11.04	1.63	0.70	3.45
2005-06	16,136	39.80	41.55	9.88	1.68	0.63	3.41
2006-07	17,633	37.69	39.43	9.43	1.55	0.40	N/A

Figure 10. Gordon Hewitt, Graph of Grade Distribution 1981-2007



Endnotes:

ⁱ Joe Urgo, “Summary of the Steering Committee Meeting, January 29, 2008.”

ⁱⁱ Admission Office, Ten-year Trends PowerPoint “Hamilton College Applicants, Admits & Matriculants: Entering years 1998-2007.”

ⁱⁱⁱ Registrar’s Office, “Graduates by Concentration 2003-2007.”

^{iv} The Maurice Horowitz Career Center, Career Outcomes 2006,” p. 4.

^v Monica Inzer, “Report on Demographics for November, 2006 Faculty Meeting.”

^{vi} Admission Office, Ten-year Trends PowerPoint “Hamilton College Applicants, Admits & Matriculants: Entering years 1998-2007.”

^{vii} GDA (George Dehne and Associates) Research. Conducted in 2005 by Admissions, Institutional Research, and Communications Office.

^{viii} Gordon Hewitt, “Senior Survey trend Analysis 2000-2007. Presented to the Hamilton College Board of Trustees November 30, 2007.”

^{ix} Dan Chambliss, “Overview of Findings, 1999-2005: A First Edition, November 2005,” p. 6.

^x Gordon Hewitt, “Senior Survey trend Analysis 2000-2007. Presented to the Hamilton College Board of Trustees November 30, 2007.”

^{xi} David C. Paris and Timothy E. Elgren, Advising: Less is More?” *Inside Higher Education*, September 29, 2006.

^{xii} Dan Chambliss, “Seniors’ Evaluation of Faculty Mentors.”

^{xiii} Dan Chambliss, “Overview of Findings, 1999-2005: A First Edition, November 2005,” p. 7.

^{xiv} Gordon Hewitt, The Wabash National Study of Liberal Arts Education. First Year Summary Report, 2007.

^{xv} Dan Chambliss, “Overview of Findings, 1999-2005: A First Edition, November 2005,” p. 8.

^{xvi} Dan Chambliss, “Recommendations to the President and Officers of Hamilton College.”

^{xvii} Dan Chambliss, “Overview of Findings, 1999-2005: A First Edition, November 2005,” p. 7; The Quantitative Literacy Committee (Karen Brewer (Chair), Tom Jones, Tim Kelly, Mary O’Neill (Director of the QLit Center), Jeff Pliskin, and Peter

Rabinowitz; Nat Strout (CAP Liaison), “Quantitative Reasoning at Hamilton College, Strengthening the Requirement,” Spring 2007.

^{xviii} Communication from Seth Major for the CAP, April 4, 2008. . Data provided by the CAP indicates that in the classes 2005, 2006, and 2007 9%, 14%, and 8%, respectively, of the students did not take any courses in the "math/science division.” This represents between 32 and 61 students. Similarly, for the classes of 2007-2009, 86%, 80%, and 81% of the students took at least one quantitative course during their first four semesters.

^{xix} The Quantitative Literacy Committee (Karen Brewer (Chair), Tom Jones, Tim Kelly, Mary O’Neill (Director of the QLit Center), Jeff Pliskin, and Peter Rabinowitz; Nat Strout (CAP Liaison), “Quantitative Reasoning at Hamilton College, Strengthening the Requirement,” Spring 2007, p. 3.

^{xx} Byerly, Greg and Brodie, Carolyn S. (1999). Information Literacy Skills Models: Defining the Choices. In *Learning and Libraries in an Information Age. Principles and Practice*, ed. Barbara K. Stripling, Englewood: Littleton: Libraries Unlimited.

^{xxi} Dan Chambliss, Meeting with the Subcommittee on Academic Program, February 21, 2008.