

Student Choice & Course Enrollment Planning

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California Association for Institutional Research

November 22, 2013 Napa

A Step Back & A Step Up Today

- UCLA's **Future Course Planner (FCP)** survey tool
 - Designed to help with course enrollment planning
 - Can also be 'flipped' to address a perennial question:
 - **Are students getting the classes they need and want?**
- How FCP supports campus planning and operations
 - Limited uses in **rich local contexts** (identifying anomalies)
- What types of analyses can be done when 'flipped'
 - Facing complexity: More questions than definitive answers
- But why is this work needed; why is it being done?
- The **forward-looking new main line** of IR work at UCLA

The New Main Line at UCLA

- Rapid, Progressive & Permanent UG Enrollment Growth
- IR Program Focus Shifts from **Macro- to Micro-Analysis**
- Supporting Departments in **Course Enrollment Planning**
- Supporting Deans in Coordinating **Budget Operations**
- Tracing **Undergraduate Pathways** Course by Course
- **Maintaining Access and High Quality in UG Programs**
- **Supporting Campus Goals for Enrollment Management**

Supporting Student Choice: Access to Programs and Courses

- Offering orderly **access** to chosen majors & minors
- Enabling students to make orderly **progress** in same
- Providing **courses needed** to support student progress
- Providing **guidance needed** to make best use of options

- Maintaining expected **quality** in instructional programs
- Maintaining or improving:
 - ... **Graduation Rates**
 - ... **Time to Degree**
 - **Student Satisfaction with Educational Experience**

Supporting Campus Goals for Enrollment Management

- Operating effective and efficient **instructional programs**
- Managing **access to the university** and its programs
- Offering the right number of **seats in courses**
 - ... in the right courses
 - ... in the right season
 - ... at the right time and place
 - ... and being able to **account for the costs** of doing so

Sections, Seats Offered, and Seats Filled in Undergraduate Courses

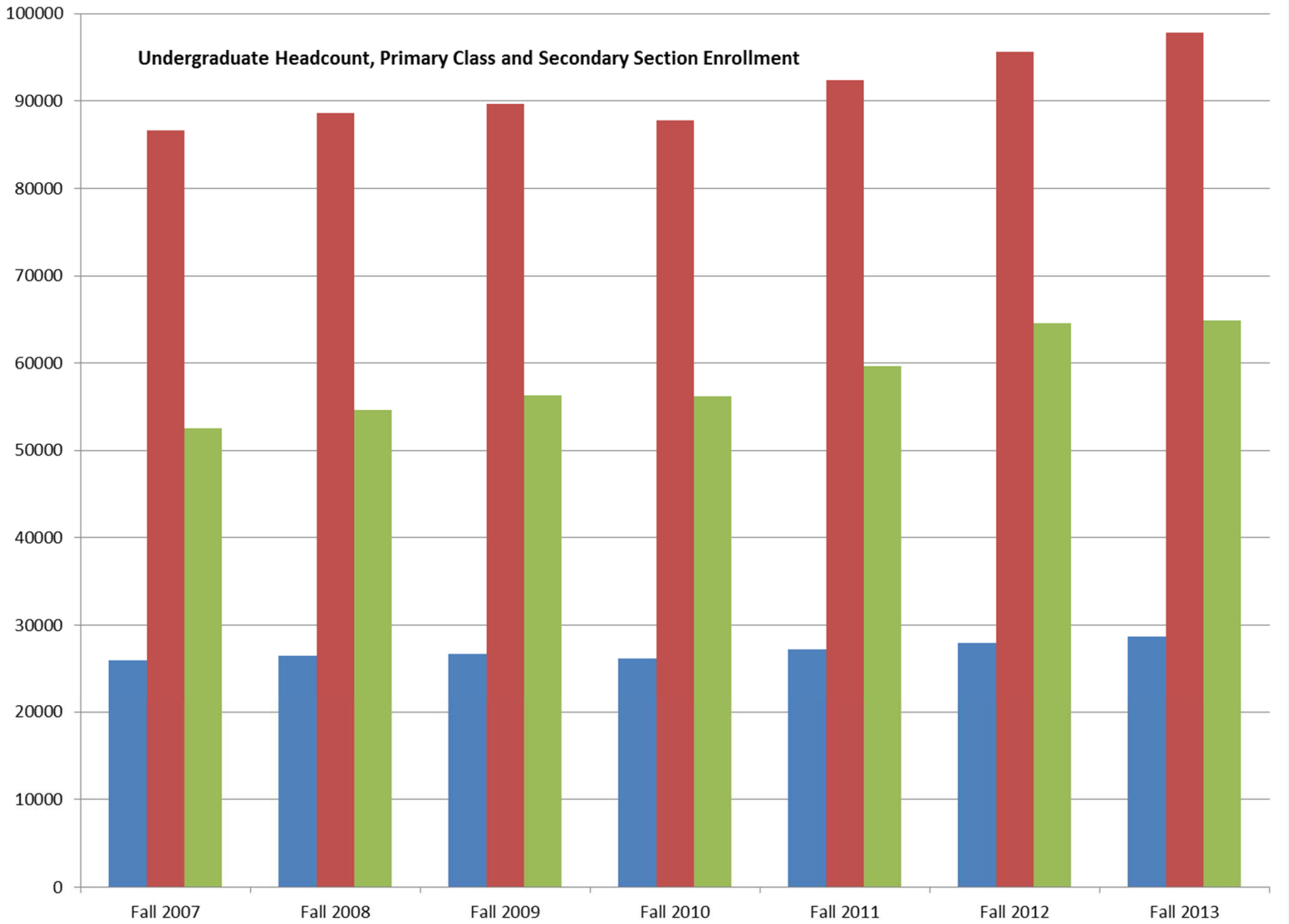
Third-Week Finals Fall 2007 to Fall 2013

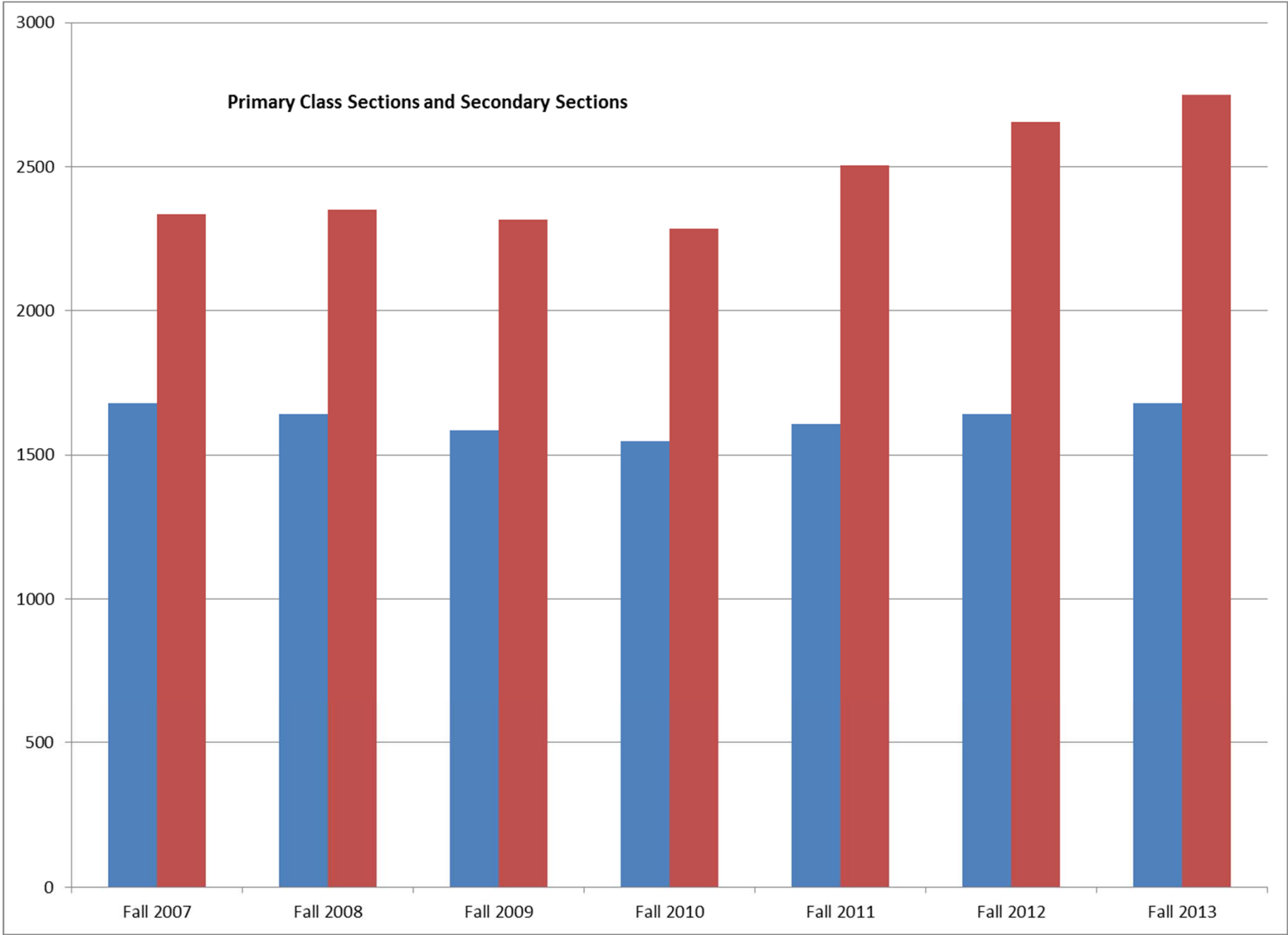
Third-Week Finals	Primary Class Sections				Average Seats per Capita				Average Seats per Section					
	Seats Offered	Seats Filled	Seats Open	% <i>Open</i>	Headcount Enrollment	Seats Offered	Seats Filled	Seats Open	Sections Offered	Seats Offered	Seats Filled	Seats Open	Seats Filled	Sections Offered
Fall 2007	98,220	86,591	11,629	11.8	25,928	3.79	3.34	0.45	1,681	58.4	51.5	6.9		
Fall 2008	98,009	88,609	9,400	9.6	26,536	3.69	3.34	0.35	1,642	59.7	54.0	5.7		
Fall 2009	98,558	89,701	8,857	9.0	26,687	3.69	3.36	0.33	1,586	62.1	56.6	5.6		
Fall 2010	97,920	87,812	10,108	10.3	26,162	3.74	3.36	0.38	1,548	63.3	56.7	6.5		
Fall 2011	105,730	92,420	13,310	12.6	27,199	3.89	3.40	0.49	1,606	65.8	57.5	8.3		
Fall 2012	109,915	95,613	14,302	13.0	27,941	3.93	3.42	0.51	1,641	67.0	58.3	8.7		
Fall 2013	113,842	97,861	15,981	14.0	28,667	3.97	3.41	0.56	1,681	67.7	58.2	9.5		
vs. Fall 2012	3,927	2,248	1,679		726				40					

Third-Week Finals	Secondary Sections				Average Seats per Capita				Average Seats per Section				Seats Filled	Sections Offered
	Seats Offered	Seats Filled	Seats Open	% <i>Open</i>	Headcount Enrollment	Seats Offered	Seats Filled	Seats Open	Sections Offered	Seats Offered	Seats Filled	Seats Open	Seats Filled	Sections Offered
Fall 2007	57,355	52,497	4,858	8.5	25,928	2.21	2.02	0.19	2,334	24.6	22.5	2.1	60.6	1.39
Fall 2008	58,381	54,635	3,746	6.4	26,536	2.20	2.06	0.14	2,352	24.8	23.2	1.6	61.7	1.43
Fall 2009	59,837	56,268	3,569	6.0	26,687	2.24	2.11	0.13	2,315	25.8	24.3	1.5	62.7	1.46
Fall 2010	59,920	56,150	3,770	6.3	26,162	2.29	2.15	0.14	2,284	26.2	24.6	1.7	63.9	1.48
Fall 2011	66,159	59,673	6,486	9.8	27,199	2.43	2.19	0.24	2,504	26.4	23.8	2.6	64.6	1.56
Fall 2012	71,135	64,553	6,582	9.3	27,941	2.55	2.31	0.24	2,656	26.8	24.3	2.5	67.5	1.62
Fall 2013	72,846	64,909	7,937	10.9	28,667	2.54	2.26	0.28	2,749	26.5	23.6	2.9	66.3	1.64
vs. Fall 2012	1,711	356	1,355		726				93					

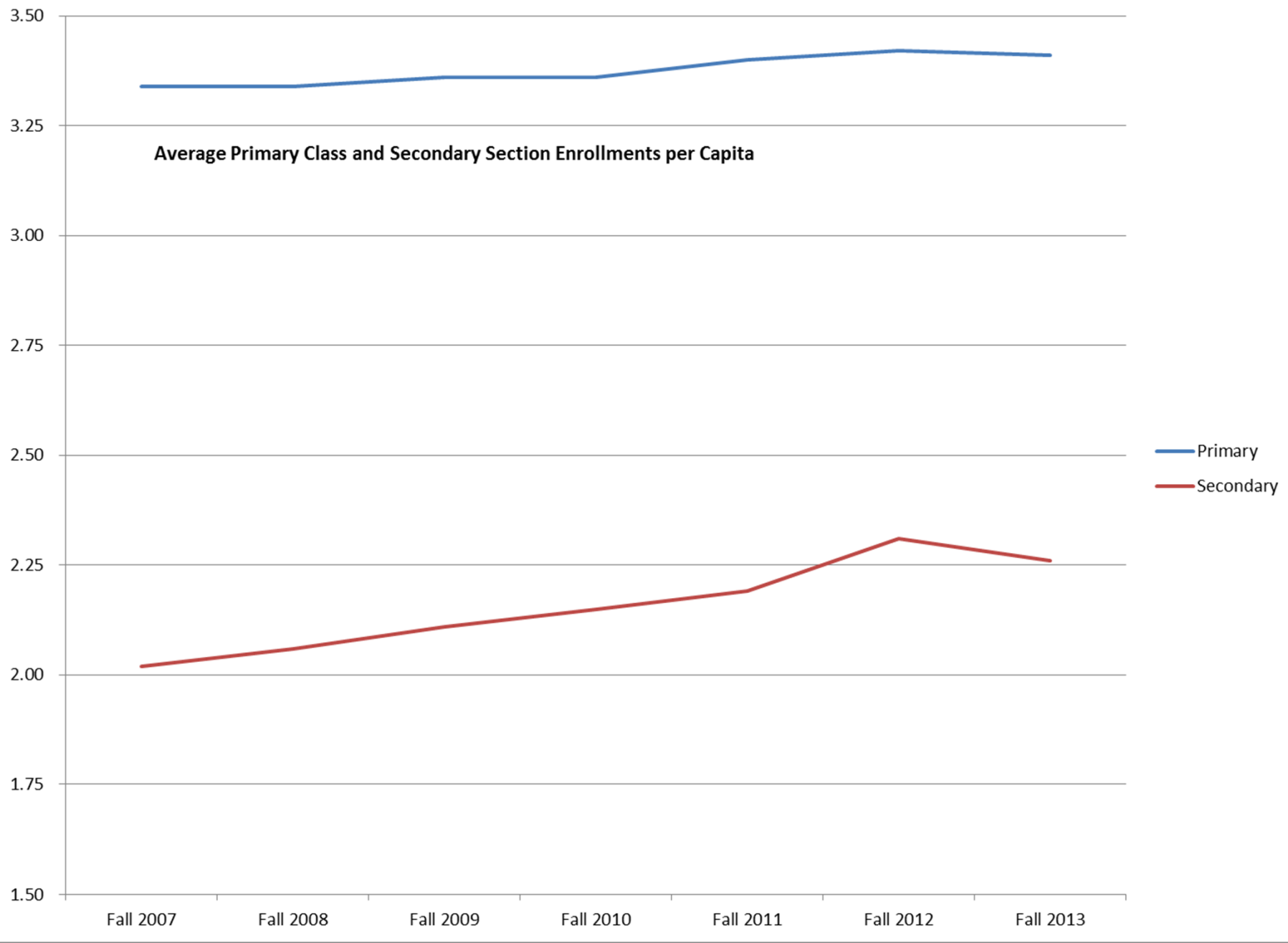
Excluded from the framework of this analysis are courses that operate without fixed schedules or definite enrollment capacities, such as independent study courses, SRP tutorials, Honors Contract courses, off-campus courses, and all courses numbered 195 and above. ROTC courses and undergraduate-level courses designed for graduate students are also excluded. The framework does include several courses featuring online operations in primary classes and/or secondary sections.

Undergraduate Headcount, Primary Class and Secondary Section Enrollment





Average Primary Class and Secondary Section Enrollments per Capita

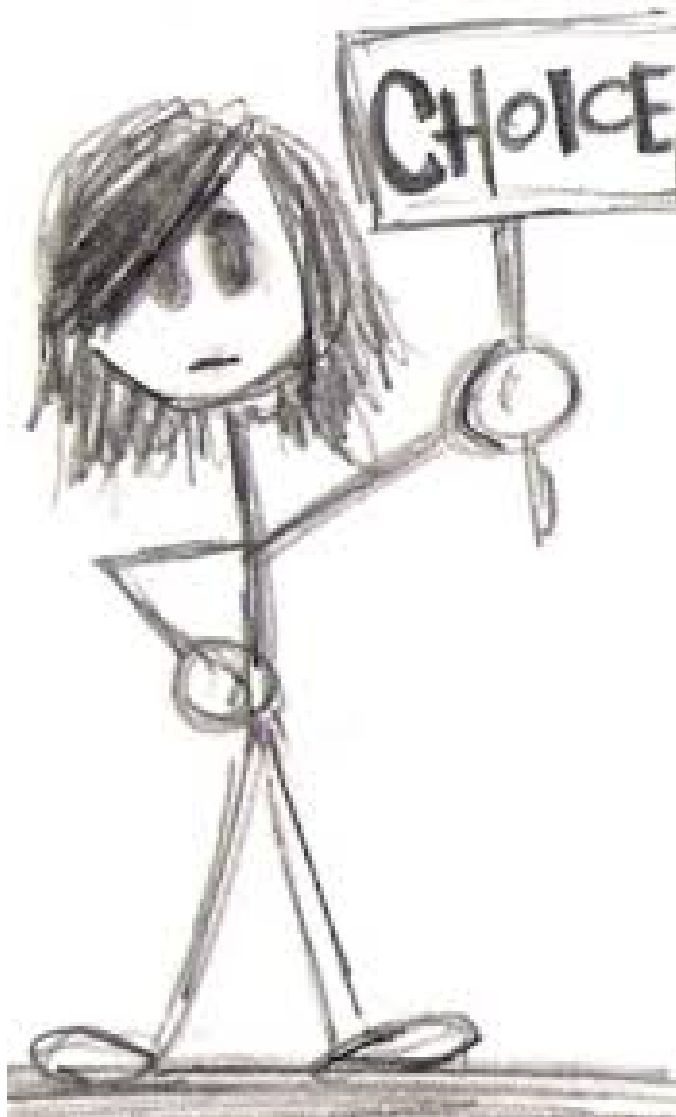






Spencer Elden
Baby on Nevermind Album Cover







**So many choices
So little time!**

Structuring Student Choice: A Host of Mechanisms for Guidance and Control

- Admissions Programming – Pathways for Freshmen and Transfers
- New Student Orientation Counseling
- Counseling and Advising throughout the Undergraduate Career
- General Degree Requirements: Math, Writing, General Education
- Course Unit Values and 'Expected Cumulative Progress'
- Courses as Prerequisites for Other Courses
- Major Program Requisite and Prerequisite Courses
- Minor Programs, Honors Programs, Other Special Tracks
- Courses Cross-Listed
- Upper Division Distribution Requirements ('Allied Fields', etc.)
- Residency Regulations Limiting Extension & CCC Exposure
- What is offered: Course Frequency in Regular and Summer Terms
- What is offered: Course Footprints in Time and Space, Coordination

Setting Fall 2013 Transfer Enrollment Targets

	N Maj	4 Yr Ad Rate	4 Yr Rg Rate	Enrolled 4 Yr Avg	Enrolled Fall 2012	Target Fall 2013	Target vs. 4 Yr Avg	Target vs. Fall 2012	Est Admit Fall 2013	% NRT 4 Yr Avg	Est NRT Fall 2013
AFRO-AMERICAN ST	1	51	75	18	20	20	2	-	27	-	-
ANTHROPOLOGY	2	60	67	216	236	205	(11)	(31)	308	5	11
ASIAN AMERICAN ST	1	44	63	15	16	15	1	(1)	24	29	4
CHICANA & CHICANO ST	1	55	72	23	24	25	2	1	35	1	-
COMMUNICATION ST	1	12	67	76	91	80	5	(11)	119	26	21
ECONOMICS	3	16	51	237	246	195	(42)	(51)	392	42	82
GENDER ST	1	55	72	60	56	55	(5)	(1)	76	7	4
GEOGRAPHY	2	62	59	49	52	50	1	(2)	84	11	6
HISTORY	1	44	66	165	150	150	(15)	-	227	3	4
POLITICAL SCI	1	35	56	220	178	175	(45)	(3)	310	6	11
SOCIOLOGY	1	22	65	102	123	125	23	2	192	14	17
HUMANITIES	47	52	57	644	636	600	(44)	(36)	1,043	10	56
LIFE SCIENCES	12	25	66	550	506	465	(85)	(41)	711	10	45
PHYSICAL SCIENCES	22	47	52	462	509	460	(2)	(49)	881	28	126
SOCIAL SCIENCES	16	27	61	1,184	1,200	1,100	(84)	(100)	1,801	15	160
INTERNATIONAL INST	6	32	51	81	77	75	(6)	(2)	149	21	17
COLLEGE + INTL	104	33	59	2,930	2,933	2,705	(225)	(228)	4,591	15	405
ENGINEERING	9	20	40	146	131	85	(61)	(46)	217	32	27
ARTS	7	11	75	65	77	75	10	(2)	106	8	4
TFT	2	6	80	35	21	25	(10)	4	32	15	4
NURSING	1	9	84	20	20	10	(10)	(10)	10	7	-
UCLA	123	29	58	3,195	3,182	2,900	(295)	(282)	4,956	16	440

**Primary Classes Served by New Student and Transition Programs for Fall 2013
Initial Seat Planning Targets Compared to Third Week Seats Offered, Filled, and Open**

subject	course	short title	GE	secondary sections	room cap	Initial Seat Planning			Third Week Seats		
						NSTP	Other	Total	Offered	Filled	Open
HIST	0001A	WESTERN CIVILIZATN	Y	15	290	60	300	360	300	249	51
HIST	0001C	WESTERN CIVILIZATN	Y	12	290	60	180	240	240	229	11
HIST	0003A	INTRO HIST SCIENCE	Y	6	229	20	160	180	120	115	5
HIST	0005	HOLOCAUST		4	144	40	200	240	80	60	20
HIST	0008A	COLONIAL LATIN AMER	Y	12	419	40	260	300	240	228	12
HIST	0009D	NEAR & MIDDLE EAST	Y	6	181	25	125	150	150	73	77
HIST	0010A M	AFRICA TO 1800	Y	3	129	40	60	100	31	31	-
HIST	0011A	HIST-CHINA TO 1000	Y	3	98	20	100	120	60	58	2
HIST	0013A	US&COLONIAL ORIGINS	Y	6	115	40	200	240	120	89	31
HIST	0020	WRLD HIST TO AD 600	Y	19	406	20	300	320	380	380	-
SOCIOL	0001	INTRODUCTORY SOCIOL	Y	15	406	150	150	300	300	297	3
SOCIOL	0001	INTRODUCTORY SOCIOL	Y	15	320	150	150	300	300	282	18
SOCIOL	0020	INTRO SOC RSCH MTHD		6	177	75	75	150	150	150	-
SOCIOL	0111	SOCIAL NETWORKS		3	141	35	40	75	90	90	-
SOCIOL	0124A M	CONVRSTNL STRCTRS 1		6	129	50	70	120	121	121	-
SOCIOL	0133	COLLECTIVE BEHAVIOR		6	157	50	100	150	155	155	-
SOCIOL	0151	COMPRTV IMMIGRATION		6	141	50	100	150	150	145	5
SOCIOL	0173	ECONOMY AND SOCIETY		6	188	50	100	150	150	137	13
CAMPUS TOTALS				1,360		19,310	23,756	43,066	42,130	38,739	3,391

Step Back Four Years

Shaken & Stirred

Depressed Conditions and New Engagements for Institutional Research

Bob Cox – UCLA

with special guest

Van Novack – Cal State Long Beach

California Association for Institutional Research

November 20, 2009 Sacramento

Full presentation now posted at

http://www.cair.org/conferences/cair2009/pres/Cox_Shaken%20and%20Stirred.pdf

Shaken - Summer 2008

- Financial news - cuts to academic unit budgets
- Enrollment news – projected 1,500 FTE over “budget”
- News from the Scheduling Office – cancelled classes
- News from Orientation – tight space at summer’s end
- **A Shocking Realization – for the first time in its history, UCLA may be at risk of entering a term in which there are not enough seats offered in classes to meet aggregate undergraduate demand**

California's San Andreas Fault



Map copyright © 2006 David K. Lynch



Stirred - Summer 2008

- Tap into course scheduling system records of **seats offered and seats filled** in every undergraduate course on a repeated basis in advance of an upcoming term
- **A new data source for IR / Learning how to use it**
- Circulate **summary reports** on the evolving situation for campus leadership and **detailed reports** to managers responsible for course offerings
- **Project** aggregate demand / **Benchmark** proposed seat offerings against comparable past term seats offered and seats filled
- Department managers use detailed reports to **formulate funding requests**
- **Funding distributed** - most serious shortages and bottlenecks addressed

Assembling the Components

- **Fundamental Measures of Instructional Activity**
 - Undergraduate Courses Offered, Term by Term
 - Primary Classes and Secondary Sections
 - Seats Offered, Seats Filled, Seats Open
 - Average Primary and Secondary Enrollments per Student
 - Average Enrollment per Primary and Secondary Section
 - Ratios and Subsets (e.g. Courses Offering Secondary Sections)
- **Measures Combined and Compared at Different Levels**
 - Specific Courses, Course Subjects, Departments and Programs
 - Schools and Divisions, Campus Totals
 - Special Groups (e.g. Courses for General Education Credit)

New Engagements 2008-09

- Course previews for upcoming terms now a **standard issue**
- **Enrollment Planning Committee** formed in the College to investigate and recommend measures to protect undergraduate access to courses and maintain high rates of academic progress
 - Many accomplishments in a year of work
 - Recommendations led to major overhaul of “enrollment priority” system
- Development of a wide variety of **new reports** in support of planning
 - Full-year course offerings
 - Multi-year course rotations
 - General Education courses
 - Critical courses for entering freshmen and transfers
 - Term-by-term instructor staffing patterns

Step Ahead Two Years

**The Management of Undergraduate
Course Offerings and the Rise of
Future Course**

Bob Cox

UCLA Office of Analysis and Information Management

California Association for Institutional Research

November 11, 2011 Rohnert Park

Full presentation now posted at:

http://www.cair.org/conferences/cair2011/pres/Cox_FutureCourse_11.11.pdf

Non-Resident Enrollment Plans

- Non-Resident Workgroup (2009-10)
- Target +2,400 Non-Res UG by 2013-14
- From 9% to 18% of UG Enrollment
- While maintaining Cal Resident access
- Non-Res Implementation Task Force
- Outreach /Services/Academic Programs
- Preparation for Innovation

“Information Flow” Subgroup

- Active Faculty Leadership
- IR hits the limit on looking backwards
- How else to look ahead and plan ahead?
- Make students part of the process
- ... by linking up existing assets...
 - The Tentative Schedule of Classes
 - My UCLA



Something New Under the Sun

- The “**Future Course Planner**” at UCLA
- A simple survey mechanism, built into
- Each student’s personal campus webpage
- Gathers information on **course preferences**
- Two or three terms in advance, to help
- Departments adjust section/seat offerings

MyUCLA Class Planner and Future Course Planner Enhancements

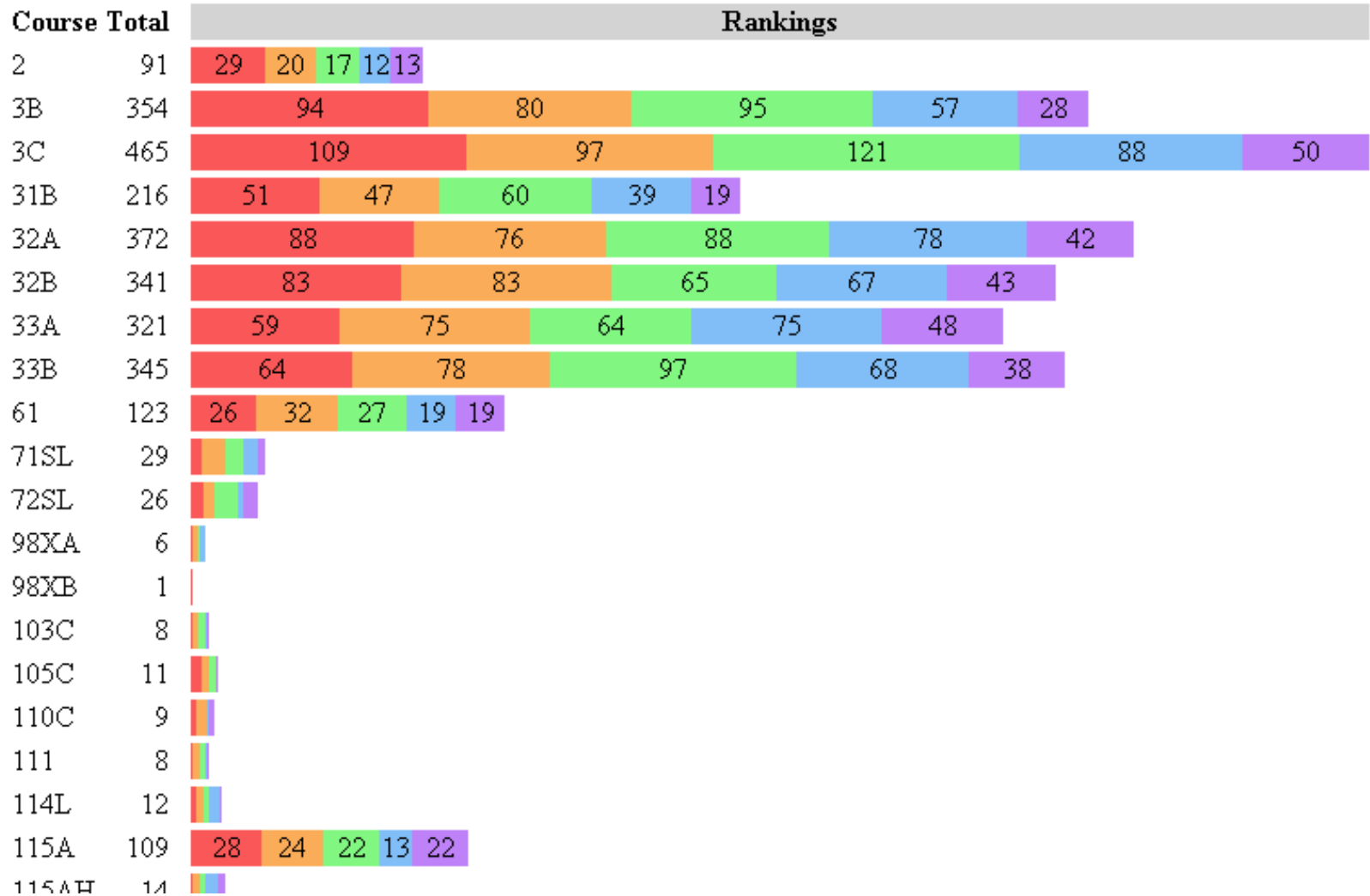
Chris Spreitzer

Director, Educational Information Technology

Departmental Counselors and Advisors Fall Quarter Meeting

November 1, 2011

Course Plan Breakdown - MATH - 66F



New Analytical Support for Planning

- Future Course updates over the Summer
- Analysis of “response rates” by major, etc.
- Sorting out the implications
- Supplement, not substitution
- Circulating relevant materials
- To people making decisions on the ground

Future Course Planner for Winter 2012

FCP Response Rates in Relation to Fall 2011 Undergraduate Population Totals **

All Undergraduates	FCP	NOT	ALL	% FCP
	12,717	14,532	27,249	46.7
Major Department	FCP	NOT	ALL	% FCP
Applied Linguistics	17	17	34	50.0
Art History	116	103	219	53.0
Asian L&C	69	78	147	46.9
Classics	29	29	58	50.0
Comparative Literature	25	30	55	45.5
English	421	605	1,026	41.0
French & Francophone	28	17	45	62.2
Germanic Languages	10	5	15	66.7
Italian	14	9	23	60.9
Linguistics	176	123	299	58.9
Musicology	21	29	50	42.0
Near Eastern L&C	19	24	43	44.2
Philosophy	191	196	387	49.4
Scandinavian Section		2	2	-
Slavic L&L	6	14	20	30.0
Spanish & Portuguese	80	91	171	46.8
Study of Religion	14	24	38	36.8
Undeclared - Humanities	196	274	470	41.7
Humanities Subtotal	1,432	1,670	3,102	46.2
Computational & Systems	20	11	31	64.5
Ecology & Evolutionary Biology	718	822	1,540	46.6
Integrative Biology & Physiology	514	513	1,027	50.0
MIMG	299	236	535	55.9
MCD Biology	252	228	480	52.5
Neuroscience	340	291	631	53.9
Psychology	1,245	1,416	2,661	46.8
Society & Genetics	11	3	14	78.6
Undeclared - Life Science	231	281	512	45.1
Life Sciences Subtotal	3,770	3,918	7,688	49.0
Atmospheric & Oceanic	16	12	28	57.1
Chemistry & Biochemistry	719	665	1,384	52.0
Earth & Space	37	23	60	61.7
Mathematics	583	552	1,135	51.4
Physics	168	145	313	53.7
Statistics	61	42	103	59.2
Undeclared - Physical Science	109	177	286	38.1
Physical Sciences Subtotal	1,693	1,616	3,309	51.2

California's San Andreas Fault



Map copyright © 2006 David K. Lynch

2010-11 Earthquake Update

- Benchmarking for Bridge Funding
- Campus maintains performance levels
- Four-Year Grad Rate rises to 70%
- Minerva's Owl may fly at dusk, but **IR**...
- Is not short for "**I**n the **R**earview Mirror"
- It must engage in **forward operations**
- Where **profiles and projections** are used
- **To frame planning and funding decisions**



March 2011 – UAIF

- **UCLA Today**
- Apr 05, 2011 By Cynthia Lee
- **Funds redirected to maintain high quality of undergraduate education**
- **UCLA's largest incoming freshman class** projected to enroll this fall, senior leaders have taken steps to ensure that there will be enough seats for first-year students in **critically needed lower-division courses**, including General Education courses; skill courses such as composition, foreign languages and quantitative reasoning; and preparation classes for impacted majors.
-
- Chancellor Gene Block and Executive Vice Chancellor and Provost Scott Waugh have decided to convert temporary resources, known as bridge funding, to a new pool of funds to meet key student enrollment needs in both core lower- and upper-division courses for all undergraduates to make sure they can graduate in a timely manner.
-
- This new resource, called the **Undergraduate Academic Incentive Funds**, will also be used to provide seed funding for innovative projects that can potentially increase the efficiency of courses and curricula. Last year, roughly \$7 million in bridge funding was distributed.
-
- "Maintaining a high-quality undergraduate program is one of our highest priorities and these funds will support that goal," Waugh said. **Undergraduate Academic Incentive Funds (UAIF)** will be allocated annually after deans of the College of Letters and Science submit their requests each year for funding of courses they feel are critical to undergraduate education. Requests for funding for this year's allocation are due by April 11.



Fall 11 - Planned Growth **PLUS!**

- Planned for 5250 new freshmen Fall 2011
- But SIRs show many more are coming
- Actually enrolled 5825 (= last year +26%)
- Record number of Internationals
- Record number of Cal Residents
- Expanded responsibilities for Orientation
- Identification of "**CRITICAL COURSES**"

Critical Courses to Support the Expansion of Freshman Access to UCLA in Fall 2011

Primary Class Sections, Seats Offered, and Seats Filled -- Fall 2011 Compared to Fall 2010

by Academic Unit and by GE Foundation Area

ACADEMIC UNIT	Primary Classes			Seats Offered			Percent	Seats Filled			Percent
	Fall 2010	Fall 2011	Gain	Fall 10	Fall 11	Gain	Gain	Fall 2010	Fall 2011	Gain	Gain
Humanities	50	55	6	5,011	6,754	1,743	35	4,897	5,996	1,099	22
Life Sciences	14	18	4	3,183	4,509	1,326	42	3,133	4,258	1,125	36
Physical Sciences	77	85	8	12,204	14,070	1,866	15	11,970	13,029	1,059	9
Social Sciences	31	33	2	7,448	8,539	1,091	15	7,215	7,557	342	5
GE Clusters	9	9	-	1,932	2,044	112	6	1,890	1,788	(102)	(5)
English Composition and ESL	48	63	15	1,035	1,282	247	24	1,019	1,271	252	25
Other College	3	4	1	409	376	(33)	(8)	382	363	(19)	(5)
College	231	267	36	31,222	37,574	6,352	20	30,506	34,262	3,756	12
SEAS	5	3	(2)	401	408	7	2	368	404	36	10
SOAA	9	9	-	1,303	1,538	235	18	1,285	1,445	160	12
STFT	2	2	-	286	413	127	44	286	410	124	43
Others	-	-	-	-	-	-	-	-	-	-	-
Schools	15	13	(2)	1,990	2,359	369	19	1,939	2,259	320	17
All Critical Courses	246	280	34	33,212	39,933	6,721	20.2	32,445	36,521	4,076	12.6

GE FOUNDATION AREA	Primary Classes			Seats Offered			Percent	Seats Filled			Percent
	Fall 2010	Fall 2011	Gain	Fall 2010	Fall 2011	Gain	Gain	Fall 2010	Fall 2011	Gain	Gain
Literary & Cultural Analysis (LC)	38	41	3	5,011	5,936	925	18	4,881	5,157	276	6
Philosophical & Linguistic Analysis (PL)	13	13	-	1,849	2,606	757	41	1,809	2,494	685	38
Visual & Performance Arts A&P (VP)	17	19	2	3,302	4,660	1,358	41	3,228	4,181	953	30
Historical Analysis (HA)	20	26	6	4,194	5,373	1,179	28	4,152	4,519	367	9
Social Analysis (SA)	31	31	-	6,428	7,208	780	12	6,247	6,630	383	6
Life Science (LS)	20	25	5	4,443	5,457	1,014	23	4,373	5,068	695	16
Physical Science (PS)	41	45	4	8,010	9,138	1,128	14	7,808	8,266	458	6
Foundations / Arts & Humanities (unduplicated)	57	65	8	8,280	10,896	2,616	32	8,105	9,748	1,643	20
Foundations / Society & Culture (unduplicated)	46	50	4	9,240	10,947	1,707	18	9,039	9,727	688	8
Foundations / Scientific Inquiry (unduplicated)	52	60	8	10,721	12,633	1,912	18	10,454	11,568	1,114	11
All GE Courses (unduplicated)	134	147	13	24,611	29,298	4,687	19.0	24,047	26,463	2,416	10.0
Other Critical Courses -- Not GE	112	133	21	8,601	10,635	2,034	23.6	8,398	10,058	1,660	19.8
All Critical Courses	246	280	34	33,212	39,933	6,721	20.2	32,445	36,521	4,076	12.6

Step Ahead Again to ...

2012



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Profiles, Projections, and Stress Tests: Pathways to Institutional Effectiveness

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California Association for Institutional Research

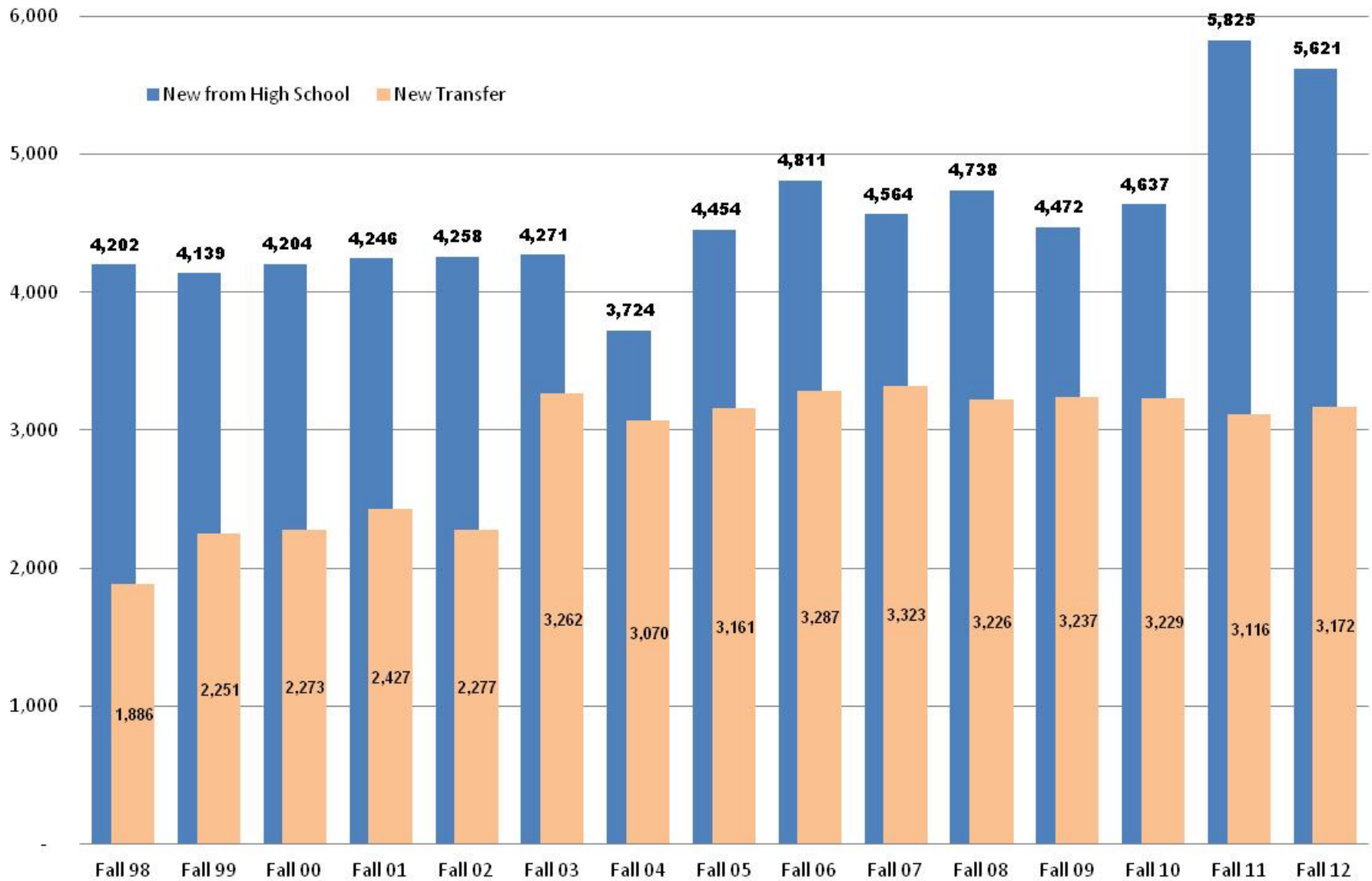
November 9, 2012 Anaheim

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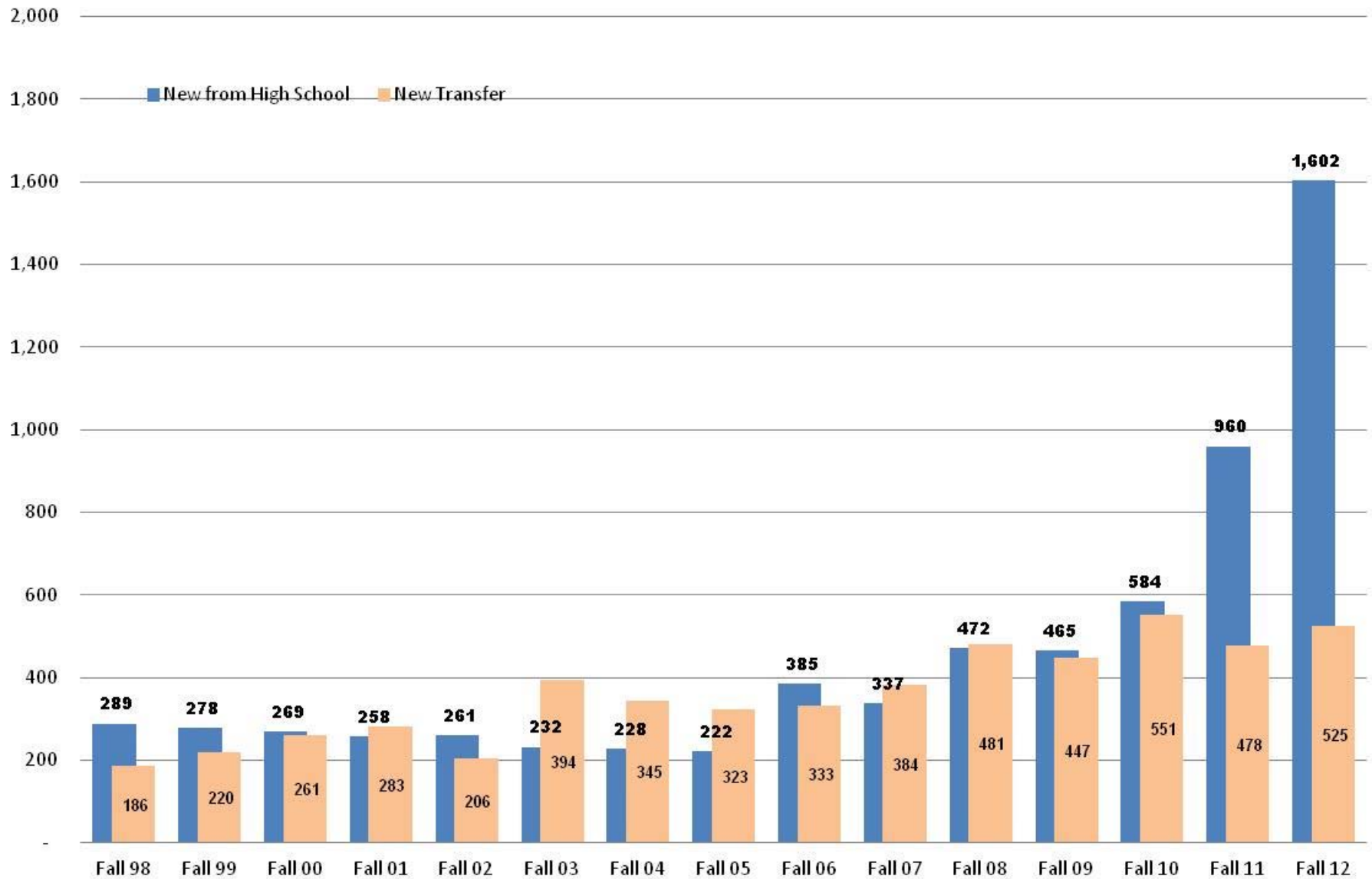
Full presentation now posted at:

http://www.cair.org/conferences/cair2012/pres/54_Cox.pdf

New Undergraduates at UCLA, Fall 1998 to Fall 2012



New Non-Resident Undergraduates at UCLA, Fall 1998 to Fall 2012



Apr 12, 2012 By UCLA Today staff

UCLA leaders commit funds to maintain high-quality undergraduate education

As state support for the University of California declines, campus leaders are making supplemental funding available to maintain UCLA's high-quality undergraduate education and provide the classroom seats needed to ensure that first-year students make timely progress to graduation.

Deans have submitted comprehensive proposals to utilize funding to be allocated by Chancellor Gene Block and Executive Vice Chancellor and Provost Scott Waugh in the next few weeks. While the exact amount to be allocated has not been determined, campus leaders last April made **\$16 million** available for use during the current academic year.

"We want to provide a sufficient number of courses and the right kinds of courses to enable undergraduates to move in a timely manner toward completing their degrees," Waugh said. "Maintaining a high-quality undergraduate education is one of our highest priorities."

The supplemental funding has allowed the campus to accommodate a larger-than-expected freshman class. Deans and department chairs are using the funding to hire the additional instructors and teaching assistants necessary to increase core course offerings in key fields, including General Education courses; skill courses such as composition, foreign languages and quantitative reasoning; and preparation classes for impacted majors.

By paying close attention to course enrollment patterns, deans and department chairs regularly make adjustments to ensure that entering students have the courses they need and to facilitate the progress of continuing students. In recent years, careful attention to enrollment and course planning has helped students achieve the highest-ever four-year graduation rate in UCLA history.

"Approximately 91 percent of our freshman class now earns a bachelor's degree at UCLA. And of those who graduate, three-quarters (75 percent) graduate in four years or less, 21 percent graduate in five years and three percent graduate beyond the fifth year," Dean and Vice Provost of Undergraduate Education Judith Smith said. "Our goal is to increase the number of freshman students who graduate in four years and work more closely with those interested in the option of graduating in three years," she said, noting that timely graduation helps to ensure access for additional incoming freshmen.

As per-student state support for the University of California system has declined by about half over the past decade, the UC Board of Regents has increased tuition to help fill the gap with some of the revenue necessary to maintain academic excellence. But while some college campuses have had to drastically cut back on course offerings, UCLA has used careful planning and supplemental funding to meet important student enrollment needs.

"That doesn't mean that every student gets every course she or he wants at the time they want it," Smith said. "But it does mean that we have worked very hard to determine what classes are needed and to manage course enrollment so that students' needs are met."

Stress Tests in an IR Context

- Assessing the capacity of academic units to adapt to **challenges specified by alternative models** of future conditions
- Most useful in uncertain times, times of crisis or rapid change
- Focused here on problems of maintaining quality and effectiveness in undergraduate instructional programs
- Stress tests combine IR skills used to prepare academic unit profiles with methods used to project future distributions of population and instructional workload

Stress Tests in Context at UCLA

- Stress tests mark the opening of a new stage in the **academic planning process** at UCLA
- Building upon collaborative efforts that have enabled the campus to **target** instructional resources allocation far more effectively
- But the campus must rely on the departments to take the initiative in planning for changes in instructional workload delivery
- Stress tests, to be effective, should be developed in **dialog with departments**, mediated by the deans

Lessons from Life Sciences

- Different Departments – Different Stress Points
- Psychology Dept. will be overwhelmed by a giant rising junior cohort seeking to enter the major
- **Classroom space** and **availability of TAs** at issue
- Familiar **resource ratios** thrown into disequilibrium
- New summer offerings might (or might not) help
- Limits on **teaching lab space** and pressures on **major advising and staffing**
- Questions about **cadavers**

Now Flash Forward to ...

Planning for 2013-14

- **IR** projects growth in course enrollment demand for 2013-14
- ... based on **course enrollment history by cohort and major mobility**
- **Provost** requests detailed UAIF funding proposals from Deans
- **Assistant Deans** use IR projections to evaluate responses to the RFP
- **IR and Budget Office collaborate** to design uniform reporting format
- Planned expenditures are detailed by **course level & instructor type**
- March 2013: Budget Office receives and evaluates proposals
- May 2013: Provost approves **\$38m** in UAIF funding for 2013-14

UCLA
COLLEGE OF
LETTERS AND SCIENCE

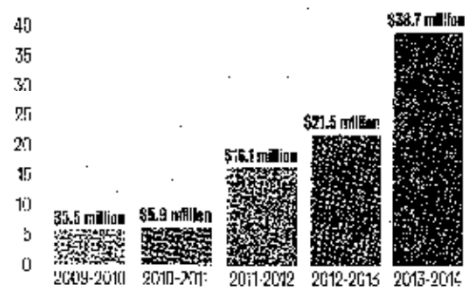
College of Letters and Science

**2013-14 Undergraduate
Academic Incentive Funding
Request**

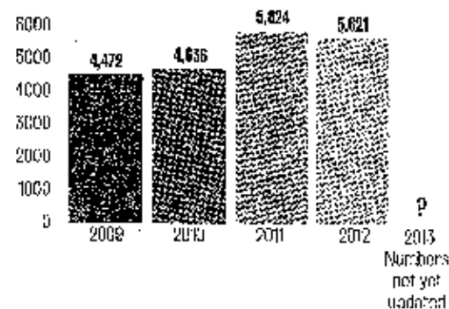
Academic funds for enrollment

To adjust to the increasing number of undergraduate students enrolled at UCLA each year, Chancellor Gene Block has allocated about \$38 million in supplementary funding to academic departments over the past five years. The funds are aimed at helping departments provide more seats in classes, offer students more scheduling options and hire additional instructors. From 2009-2011, the allocated funds were known as bridge funding. For the past three years, the funds have been allocated as part of the Undergraduate Academic Incentive Funds.

Amount of funding allocated each year for the past five years



Freshman class enrollment over the past four years



BYRON G. BECKER/WIREIMAGE.COM; JILL KAPLAN FOR THE BRUIN. PHOTO COURTESY OF THE BRUIN ARCHIVE. GRAPH BY BRUIN ARCHIVE. DATA SOURCE: UCLA OFFICE OF UNDERGRADUATE ACADEMIC AFFAIRS

Sections, Seats Offered, and Seats Filled in Undergraduate Courses

Third-Week Finals Fall 2007 to Fall 2013

Third-Week Finals	Primary Class Sections				Average Seats per Capita				Average Seats per Section					
	Seats Offered	Seats Filled	Seats Open	% <i>Open</i>	Headcount Enrollment	Seats Offered	Seats Filled	Seats Open	Sections Offered	Seats Offered	Seats Filled	Seats Open	Seats Filled	Sections Offered
Fall 2007	98,220	86,591	11,629	11.8	25,928	3.79	3.34	0.45	1,681	58.4	51.5	6.9		
Fall 2008	98,009	88,609	9,400	9.6	26,536	3.69	3.34	0.35	1,642	59.7	54.0	5.7		
Fall 2009	98,558	89,701	8,857	9.0	26,687	3.69	3.36	0.33	1,586	62.1	56.6	5.6		
Fall 2010	97,920	87,812	10,108	10.3	26,162	3.74	3.36	0.38	1,548	63.3	56.7	6.5		
Fall 2011	105,730	92,420	13,310	12.6	27,199	3.89	3.40	0.49	1,606	65.8	57.5	8.3		
Fall 2012	109,915	95,613	14,302	13.0	27,941	3.93	3.42	0.51	1,641	67.0	58.3	8.7		
Fall 2013	113,842	97,861	15,981	14.0	28,667	3.97	3.41	0.56	1,681	67.7	58.2	9.5		
vs. Fall 2012	3,927	2,248	1,679		726				40					

Third-Week Finals	Secondary Sections				Average Seats per Capita				Average Seats per Section				Seats Filled	Sections Offered
	Seats Offered	Seats Filled	Seats Open	% <i>Open</i>	Headcount Enrollment	Seats Offered	Seats Filled	Seats Open	Sections Offered	Seats Offered	Seats Filled	Seats Open	Seats Filled	Sections Offered
Fall 2007	57,355	52,497	4,858	8.5	25,928	2.21	2.02	0.19	2,334	24.6	22.5	2.1	60.6	1.39
Fall 2008	58,381	54,635	3,746	6.4	26,536	2.20	2.06	0.14	2,352	24.8	23.2	1.6	61.7	1.43
Fall 2009	59,837	56,268	3,569	6.0	26,687	2.24	2.11	0.13	2,315	25.8	24.3	1.5	62.7	1.46
Fall 2010	59,920	56,150	3,770	6.3	26,162	2.29	2.15	0.14	2,284	26.2	24.6	1.7	63.9	1.48
Fall 2011	66,159	59,673	6,486	9.8	27,199	2.43	2.19	0.24	2,504	26.4	23.8	2.6	64.6	1.56
Fall 2012	71,135	64,553	6,582	9.3	27,941	2.55	2.31	0.24	2,656	26.8	24.3	2.5	67.5	1.62
Fall 2013	72,846	64,909	7,937	10.9	28,667	2.54	2.26	0.28	2,749	26.5	23.6	2.9	66.3	1.64
vs. Fall 2012	1,711	356	1,355		726				93					

Excluded from the framework of this analysis are courses that operate without fixed schedules or definite enrollment capacities, such as independent study courses, SRP tutorials, Honors Contract courses, off-campus courses, and all courses numbered 195 and above. ROTC courses and undergraduate-level courses designed for graduate students are also excluded. The framework does include several courses featuring online operations in primary classes and/or secondary sections.

Future Course Planner Functions in Brief

FCP Responses are -

Summarized by **Student Cohort**

Subjected to **Response Rate Analysis**

Transformed into Estimates of Demand

Compared to Course Enrollment Histories

Circulated to Deans and Departments

Student Participation Rates Average **35%** across Cohorts

Analysis of 'Flipped' FCP Initiates a **New Phase of Operations**

Start by Determining Simple **'Hit Rates'** , that is...

Actual Course Enrollments as a % of Courses Named in FCP

But with **many qualifications**, not yet fully explored

One Example of Demand Estimates Circulated to Deans and Departments

**148 Courses Cited by 40+ Students in the Future Course Planner
as a 'Top Three' Selection for Winter 2013 - by Student Cohort Type**

**With FCP Selection Count Multiplied by the Inverse of the Cohort Type Response Rate
to Provide a First Order Estimate of Total 'Top Three' Demand for Each Course**

FCP Response >>		23%	43%	40%	36%	28%	40%	N/A	est. FCP
COURSE		HS 1	HS 2	HS 3	HS +	TR 1	TR +	GR	Win 13
EE BIOL 116		-	2	45	70	4	33	9	163
LIFESCI 1		260	223	70	34	25	15	6	633
LIFESCI 2		106	343	30	3	50	10	-	542
LIFESCI 3		4	690	75	22	61	30	9	891
LIFESCI 4		-	209	223	20	90	40	3	585
LIFESCI 15		66	53	3	6	4	5	-	137
LIFESCI 0023L		-	219	45	3	22	8	-	297
MCD BIO 0165A		-	2	40	28	22	48	6	146
MIMG 102		-	2	43	101	7	15	3	171
MIMG 0185A		-	-	30	53	4	23	3	113
NEUROSC 0101B M		9	-	120	31	22	45	3	230
PHYSICI 5		70	46	13	31	4	8	-	172
PHYSICI 0111A		-	7	188	17	22	5	3	242
PHYSICI 167		-	2	53	171	4	45	-	275
PSYCH 10		154	55	5	8	-	5	-	227
PSYCH 0100A		48	253	18	11	32	3	3	368
PSYCH 0100B		9	200	93	6	248	10	3	569
PSYCH 110		4	21	115	64	25	53	-	282
PSYCH 115		-	14	78	48	47	30	3	220
PSYCH 0119E		-	7	13	95	18	30	-	163
PSYCH 0119Q		-	5	30	126	32	25	3	221
PSYCH 0120A		4	18	75	112	58	115	-	382
PSYCH 126		4	-	13	48	14	63	-	142
PSYCH 0127A		4	18	33	20	29	8	-	112
PSYCH 135		4	28	48	14	72	20	-	186
PSYCH 0136A		-	2	13	90	11	63	3	182
PSYCH 0137C		-	18	43	31	22	20	6	140

**Comparing 'Top Three' Future Course Planner
Estimated Demand for Winter 2013 to**

**Actual Enrollment by Quarter 2011-12 - 2nd Week Enrollment Fall 2012
and Stated Course Enrollment Capacities for Winter 2013 at October 16**

Fall 11	Win 12	Spr 12	Week 2 Fall 12	est. FCP Win 13	Capacity Win 13	vs. FCP Win 13
	203			163	180	17
524	658	544	642	633	720	87
632	633	720	642	542	648	106
569	733	491	598	891	760	(131)
488	520	488	542	585	576	(9)
284	214	217	286	137	216	79
	309	285	329	297	-	(297)
162	159			146	162	16
				171	300	129
118	116		87	113	120	7
	172			230	160	(70)
420	412	416	420	172	418	246
	289			242	290	48
	364			275	350	75
638	541	513	682	227	450	223
478	244	303	499	368	250	(118)
239	319	253	279	569	210	(359)
200	192	188	154	282	160	(122)
105	294	183		220	200	(20)
	120			163	50	(113)
	56			221	50	(171)
310	304	292		382	240	(142)
21	21	27	21	142	24	(118)
224	199	179	247	112	200	88
305	173	153	400	186	160	(26)
27	26	25		182	48	(134)
	411	164		140	400	260

Working with the 'Flipped' FCP: Initial Analytical Findings

- 2012-13 Course Enrollments for 5,012 FCP Respondents
- Looking for 'hits' Summer through Spring

- 71% naming only one course enrolled in that course
- 52% naming two courses enrolled in both
 - While 34% enrolled in one of two
- 39% naming three courses enrolled in all three
 - While 35% enrolled in two and 19% in one of three

Full Year Course Hits for 5,012 Spring 2012 Respondents in Three Cohorts to the Future Course Planner for Fall 2012

	-	1	one	-	1	2	two	-	1	2	3	three	-	1	2	3	4	four	-	1	2	3	4	5	five	all
HS 2	32	82	114	21	59	104	184	31	78	165	177	451	7	64	147	215	203	636	41	105	201	269	289	171	1,076	2,461
HS 3	27	69	96	23	43	63	129	19	50	83	123	275	15	42	80	130	97	364	55	92	123	141	108	53	572	1,436
HS 4	26	54	80	14	41	50	105	15	50	77	61	203	14	57	64	77	45	257	35	99	149	105	58	24	470	1,115
Combined	85	205	290	58	143	217	418	65	178	325	361	929	36	163	291	422	345	1,257	131	296	473	515	455	248	2,118	5,012

	-	1	one	-	1	2	two	-	1	2	3	three	-	1	2	3	4	four	-	1	2	3	4	5	five	all
HS 2	1	3	5	1	2	4	7	1	3	7	7	18	0	3	6	9	8	26	2	4	8	11	12	7	44	100
HS 3	2	5	7	2	3	4	9	1	3	6	9	19	1	3	6	9	7	25	4	6	9	10	8	4	40	100
HS 4	2	5	7	1	4	4	9	1	4	7	5	18	1	5	6	7	4	23	3	9	13	9	5	2	42	100
Combined	2	4	6	1	3	4	8	1	4	6	7	19	1	3	6	8	7	25	3	6	9	10	9	5	42	100

	-	1	one	-	1	2	two	-	1	2	3	three	-	1	2	3	4	four	-	1	2	3	4	5	five
HS 2	28	72	100	11	32	57	100	7	17	37	39	100	1	10	23	34	32	100	4	10	19	25	27	16	100
HS 3	28	72	100	18	33	49	100	7	18	30	45	100	4	12	22	36	27	100	10	16	22	25	19	9	100
HS 4	33	68	100	13	39	48	100	7	25	38	30	100	5	22	25	30	18	100	7	21	32	22	12	5	100
Combined	29	71	100	14	34	52	100	7	19	35	39	100	3	13	23	34	27	100	6	14	22	24	21	12	100

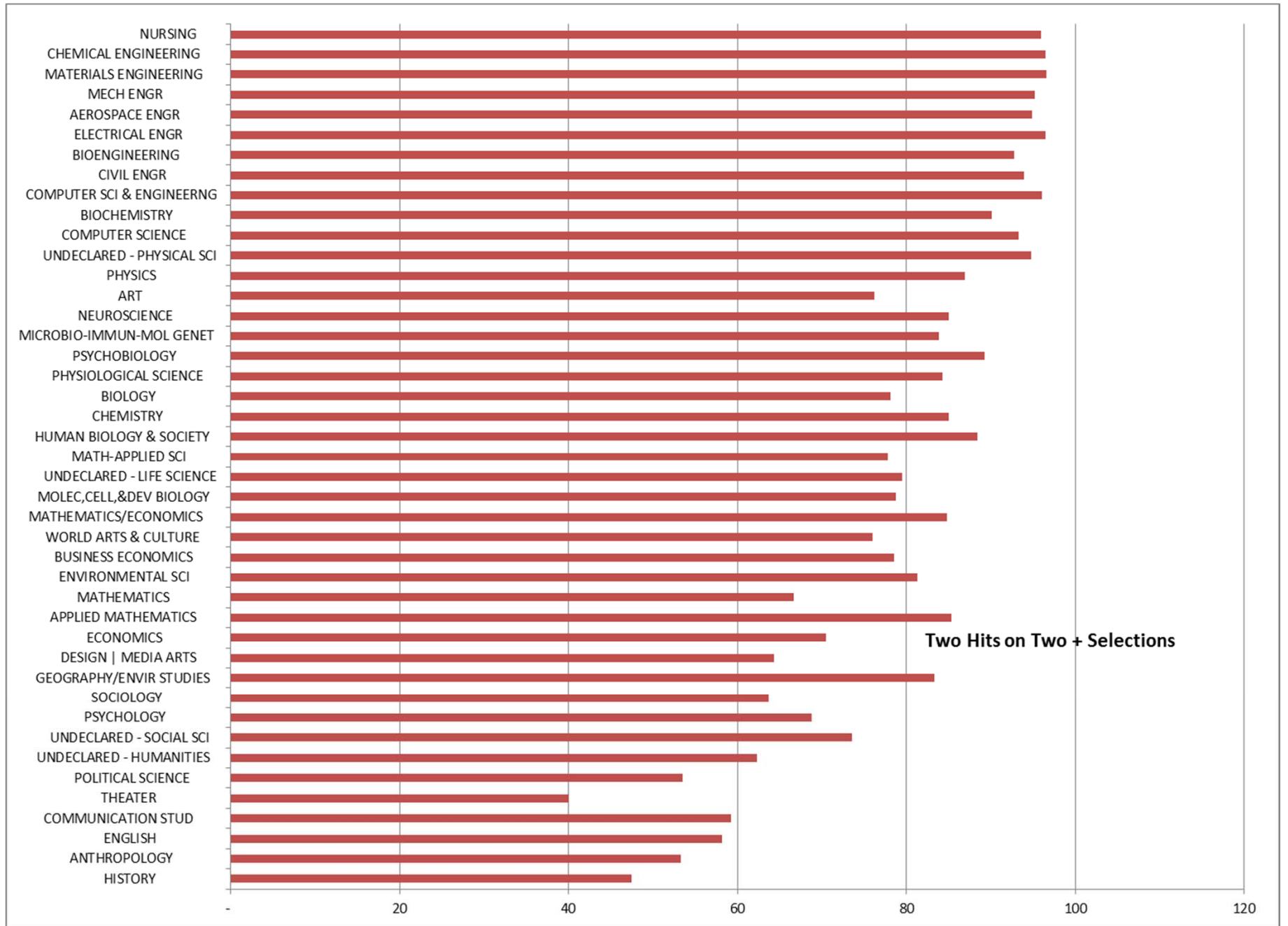
Working with the 'Flipped' FCP: Several Significant Analytical Findings

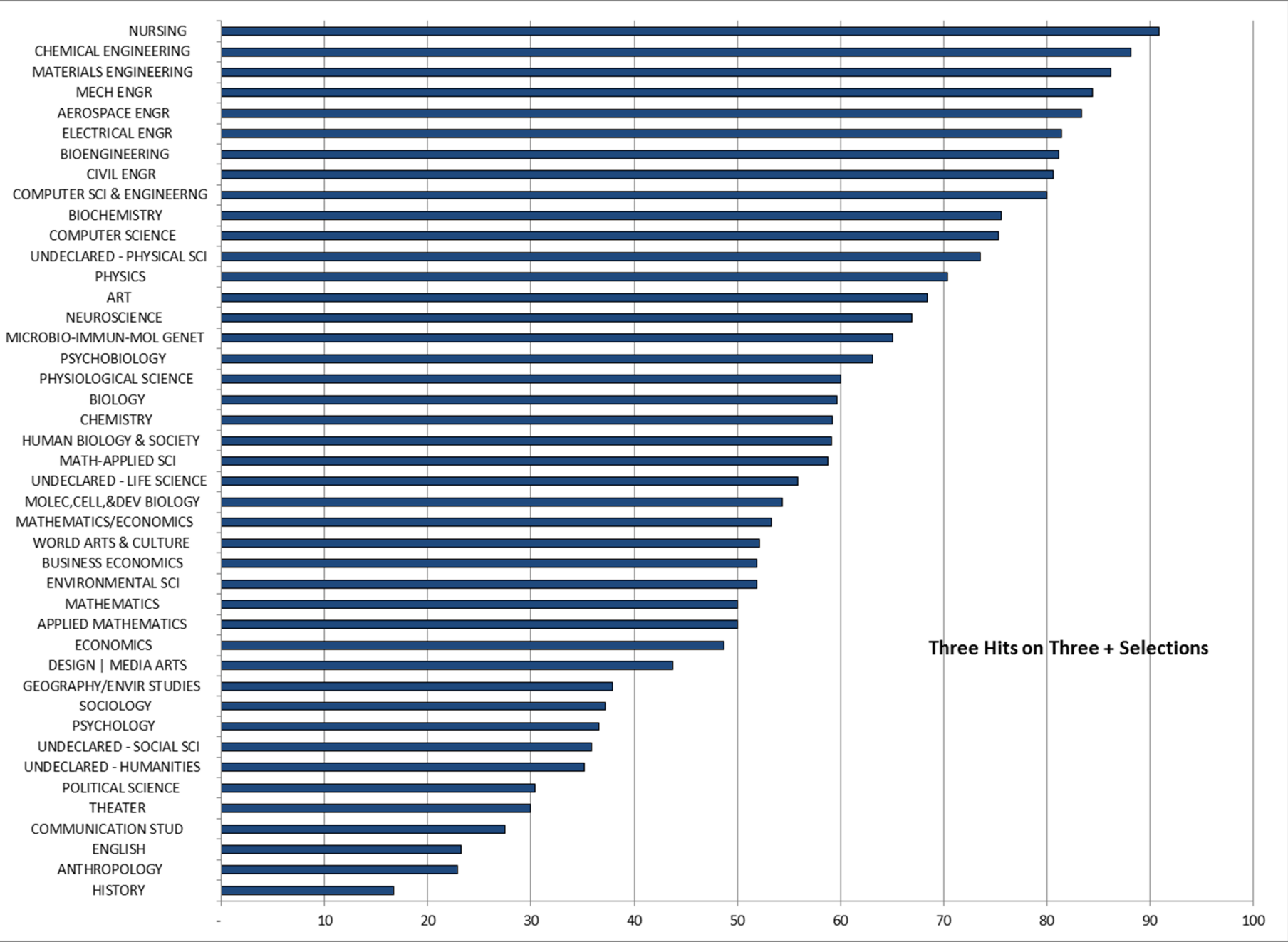
- 93% of respondents enrolled in **at least one** FCP course
- 55% managed to enroll in **at least three** FCP courses
 - Or in **all courses named**, if fewer than three
- Distributions of simple hit rates by major program
- **Majors with strong linear structures show higher hit rates**
 - Particularly when it comes to getting three or more FCP courses
 - Engineering, Nursing, most of the **STEM** majors
 - Why? Majors themselves have 'narrower' course channels
 - And? Students consequently have better idea of what lies ahead

Number and Percentage of Respondents with Zero, One+ and Three+ Course Hits

	Zero	One+	Three+	Base
HS 2	132	2,329	1,510	2,461
HS 3	139	1,297	784	1,436
HS 4	104	1,011	474	1,115
Combined	375	4,637	2,768	5,012

	Zero	One+	Three+	Base
	5	95	61	100
	10	90	55	100
	9	91	43	100
	7	93	55	100





But Analytical Work is Only Beginning and May Never Reach Full Closure

- **Many, many reasons** why students might not score a 'hit'
 - Courses listed in FCP tentative schedule may not actually be offered
 - Other, more attractive courses may be offered that were not posted in FCP
 - Students may only be able to choose one or the other of two FCP courses
 - FCP does not show who is teaching; when this is known, preferences may shift
 - Students entering or changing programs may reorder priorities -- and, of course ...
 - Students are free (within limits) to simply **change their minds, make new choices**
- **Many, many ways** in which a 'non-hit' may really be a 'hit'
 - Different courses may be functionally equivalent in many different ways
 - Satisfying, for example, the same General Education requirements
 - Or the same major program or minor program or distribution requirements
 - Students planning to place at one level may step up or down (Math 3 not Math 2)
 - Etc. Etc.



A Happy Ending?

- **Supporting Student Choice**
 - Access to Programs and Courses that Attract Students to the Institution
 - Offering Freedom to Explore, to Change, to Find the Best Fit
- **Supporting Campus Goals for Enrollment Management**
 - Operating Effective and Efficient Instructional Programs
 - Excellence and Accountability in Course Enrollment Planning
- **Achieving Dual Institutional Objectives Not Necessarily Compatible**
 - The Forward-Looking New Main Line of IR Activity at UCLA
 - The IR Program Expands; Focus Shifts from Macro- to Micro-Analysis
 - Supporting Deans and Departments in Course Enrollment Planning
 - Tracing Undergraduate Pathways Course by Course
- **Difficulties Leading to Rewards**
 - Nothing like a wedding to illustrate the joining of choice to a structured outcome
 - The story of a broadminded and headstrong UCLA girl who is getting it done

Mabel Ko and Tom Thacker

Nov.10, 2013 (Read all about it in the **New York Times** – Vows, Nov. 17, 2013)



Student Choice & Course Enrollment Planning

Bob Cox

University of California, Los Angeles

California Association for Institutional Research

November 22, 2013 Napa