The STEM Colorado Program
Descriptive Statistics

Fall 2003 to Spring 2006

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Introduction

The Science, Technology, Engineering, Mathematics (STEM) Colorado program was funded in 2003 by a grant from the National Science Foundation. The program is an interdisciplinary collaboration between faculty from the College of Arts & Sciences and the School of Education at the University of Colorado at Boulder. The purpose of the STEM Colorado program has been to both assist faculty members in the restructuring of their large-enrollment undergraduate courses and to prepare and recruit undergraduate students to become K-12 math and science teachers. Three formative evaluations of the STEM Colorado program have been conducted: Thiry, Kinner, & Grassi, 2004; Briggs, Geil, Harlow, & Hassel. 2005, and Briggs, Geil, & Harlow, 2006.

The purpose of this report is to summarize all available descriptive statistics on the program and its participants over six semesters, from the Fall of 2003 to the Spring of 2006, in the following four categories:

- STEM Colorado Courses and Learning Assistant Positions
- Learning Assistant Cohorts
- Demographic Characteristics of Learning Assistants
- Learning Assistant Interest in Teaching as a Career

Sources of Data

While administrative records from the STEM Colorado program have been gathered for every semester, other sources of data that have been collected range from individual interviews to written survey instruments. Because the questions posed during interviews and surveys have not

always remained consistent, when semester to semester statistics are based upon questions that changed either in format (oral vs. written) or in wording, this information is noted at the bottom of the relevant table. The various sources for the data from each semester (beyond administrative records) are shown below:

Semester	Sources of Data
Fall 2003	---
Spring 2004	Focus group interviews with Learning Assistants
Fall 2004	Individual interviews with Learning Assistants
Spring 2005	Survey of Learning Assistants and STEM Colorado faculty
Fall 2005	Focus group interviews and survey of Learning Assistants
Spring 2006	Survey of Learning Assistants

As in all reports on the STEM Colorado program, the names of Learning Assistants, faculty and specific courses are pseudonyms.

Report Overview

STEM Colorado Courses and Learning Assistant Positions

In each of the six semesters between 2003 and 2006, there have been on average 10 distinct courses in the departments of Astronomy, Biology, Mathematics, and Physics that have utilized Learning Assistants. Over this time period, there have been four distinct courses consistently using Learning Assistants in Astronomy, three in Biology, six in Mathematics, and seven in Physics. In

the Fall 2005 semester, one course in the Chemistry department began using a Learning Assistant, and continued to do so the following semester. With the exception of the first semester of the STEM Colorado program, there has typically been a mix of new and returning Learning Assistants employed within the different courses. There have been a total of 135 different undergraduate students that have served as Learning Assistants over the first six semesters of the program. The number of new Learning Assistants per semester has ranged from 19 to 32 with an average of 25. The number of returning Learning Assistants (including Learning Assistants returning as Noyce Fellows) has ranged from 15 to 19 with an average of 17. For details on the different ways in which Learning Assistants are utilized across courses and departments, please see Briggs, et al., 2005.

Learning Assistant Cohorts

In each successive semester of the STEM Colorado, new cohorts of Learning Assistants have been formed as students enter the program for the first time, return for one or more semesters, or leave the program after their initial participation in the program. While a majority of Learning Assistants participate in the program for only one semester, 34 students have participated for two semesters, and 17 students have participated for more than two semesters.

Demographic Characteristics of Learning Assistants

On average, there have been somewhat more male Learning Assistants than female Learning Assistants, at a ratio of 57% to 43%. Based on the four semesters in which information was collected on the race and ethnicity of Learning Assistants, about 80% of students identify

themselves as White. There are no other racial/ethnic categories for which there have been more than three Learning Assistants in any given semester.

Learning Assistants come from a wide variety of academic majors. The majors most frequently indicated by Learning Assistants are Applied Mathematics, Mathematics, Astronomy, Biology, Engineering, and Physics. In addition, a number of Learning Assistants indicate Education as a second major. Finally, while there are relatively few Learning Assistants in their freshman year of college, Learning Assistants are roughly equally distributed among sophomore, junior and senior cohorts.

Learning Assistant Interest in Teaching as a Career

Information about the interest of Learning Assistants in K-12 teaching as career possibility was only solicited directly in the Fall 2004 through the Spring 2006 semesters. Across these semesters, the number of new Learning Assistants expressing what could be reasonably categorized as a "high" interest in teaching as a career ranged from a low of 10% in the Spring of 2006 to a high of 32% in the Fall of 2005. (For details on how a "high" interest has been defined across semesters, see the notes at the bottom of Tables 19-22.) The average percent of new Learning Assistants expressing a high interest across these four semesters was about 24%. Among returning Learning Assistants (including Noyce Fellows), the number expressing a high interest in teaching ranged from 55% in the Fall of 2005 to 74% in the Spring of 2006, with an average of 67%.

STEM Colorado Courses and Learning Assistant Positions

Semester	Department	Learning Assistants			
		New	Returning	Noyce	Total
Fall 2003	Astronomy	10	n/a	n/a	10
	Biology	2	n/a	n/a	2
	Mathematics	10	n/a	n/a	10
	Physics	10	n/a	n/a	10
	Total	32	n/a	n/a	32
Spring 2004	Astronomy	10	5	n/a	16
	Biology	8	1	n/a	9
	Mathematics	3	6	n/a	9
	Physics	5	3	n/a	8
	Total	26	15	n/a	41
Fall 2004	Astronomy	8	5	n/a	13
	Biology	2	2	n/a	4
	Mathematics	6	3	n/a	9
	Physics	3	5	n/a	8
	Total	19	15	n/a	34
Spring 2005	Astronomy	2	4	1	7
	Biology	4	2	0	6
	Mathematics	6	4	4	14
	Physics	7	2	0	9
	Education	0	1	0	1
	Total	19	13	5	37
Fall 2005	Astronomy	4	3	2	9
	Biology	3	1	1	5
	Chemistry	1	0	0	1
	Mathematics	4	4	4	12
	Physics	10	3	0	13
	Total	22	11	7	40
Spring 2006	Astronomy	3	1	3	7
	Biology	8	0	2	10
	Chemistry	0	1	0	1
	Mathematics	7	0	6	13
	Physics	12	5	1	18
	Total	30	7	12	49

NOTE: A single Learning Assistant held a position in both the Astronomy and the Physics departments during the Fall 2003, Spring 2004, and Fall 2004 semesters. The "Total" row for each year reflects the number of distinct positions, not the number of distinct undergraduates who served as Learning Assistants.

Table 1. Learning Assistant Positions and Noyce Fellows by Department: Fall 2003-Spring 2006

Department	Course Name	Lead Instructor(s)	Learning Assistants		
			New	Returning	Total
ASTR	Astronomy 120	Anderson	10	n/a	10
BIOL	Biology 110	Everson	1	n/a	1
BIOL	Biology 465	Everson & Jackson	1	n/a	1
MATH	Calculus 101A	Stevens	2	n/a	2
MATH	Calculus 110	Olson & Stevens	4	n/a	4
MATH	Calculus 210	Olson	4	n/a	4
PHYS	Physics 101	Robinson & Lang	3	n/a	3
PHYS	Physics 120	Herman	7	n/a	7
Total			32	0	32

NOTE: A single Learning Assistant held a position in both the Astronomy and the Physics departments. The "Total" row reflects the number of distinct positions, not the number of distinct undergraduates who served as Learning Assistants.

Table 2. STEM Colorado Courses, Instructors and Learning Assistant Positions: Fall 2003

Department	Course Name	Lead Instructor(s)	Learning Assistants		
			New	Returning	Total
ASTR	Astronomy 111	Logan	7	4	11
ASTR	Astronomy 120	Bryan	3	1	4
BIOL	Biology 111	Richards	5	0	5
BIOL	Biology 465	Everson & Jackson	3	1	4
MATH	Calculus 101B	Stevens	0	2	2
MATH	Calculus 110	Olson & Stevens	2	1	3
MATH	Calculus 210	Olson	1	2	3
MATH	Calculus 331	Sperry	0	1	1
PHYS	Physics 102	Robinson & Lang	0	1	1
PHYS	Physics 120	Herman	5	2	7
Total			26	15	41

NOTE: A single Learning Assistant held a position in both the Astronomy and the Physics departments. The "Total" row reflects the number of distinct positions, not the number of distinct undergraduates who served as Learning Assistants.

Table 3. STEM Colorado Courses, Instructors and Learning Assistant Positions: Spring 2004

Department	Course Name	Lead Instructor(s)	Learning Assistants		
			New	Returning	Total
ASTR	Astronomy 111	Anderson	5	3	8
ASTR	Astronomy 200	Helm	3	2	5
BIOL	Biology 110	Everson	2	2	4
MATH	Calculus 101A	Stevens	2	0	2
MATH	Calculus 110	Olson & Stevens	2	2	4
MATH	Calculus 210	Sperry	2	0	2
MATH	Comp Sci 101	Townsend	0	1	1
PHYS	Physics 120	Herman & Potter	3	5	8
Total			19	15	34

NOTE: A single Learning Assistant held a position in both the Astronomy and the Physics departments. The "Total" row reflects the number of distinct positions, not the number of distinct undergraduates who served as Learning Assistants.

Table 4. STEM Colorado Courses, Instructors and Learning Assistant Positions: Fall 2004

Department	Course Name	Lead Instructor(s)	Learning Assistants			
			New	Returning	Noyce	Total
ASTR	Astronomy 101	Spradley	2	3	n/a	5
ASTR	Astronomy 120	Anderson	0	1	n/a	1
ASTR	Noyce Fellow	n/a	n/a	n/a	1	1
BIOL	Biology 111	Richards	2	2	n/a	4
BIOL	Biology 465	Everson & Jackson	2	0	n/a	2
MATH	Calculus 101B	Stevens	0	2	n/a	2
MATH	Calculus 110	Olson & Stevens	1	1	n/a	2
MATH	Calculus 210	Olson	5	1	n/a	6
MATH	Noyce Fellow	n/a	n/a	n/a	4	4
PHYS	Physics 102	Corwin	1	1	n/a	2
PHYS	Physics 122	Potter	6	0	n/a	6
PHYS	Physics 307	Herman	0	1	n/a	1
EDUC	Public Schools	n/a	0	1	n/a	1
Total			19	13	5	37

Table 5. STEM Colorado Courses, Instructors and Learning Assistant Positions: Spring 2005

Department	Course Name	Lead Instructor(s)	Learning Assistants			
			New	Returning	Noyce	Total
ASTR	Astronomy 101	Anderson	4	2	n/a	6
ASTR	Astronomy 200	Helm	0	1	n/a	1
ASTR	Noyce Fellow	n/a	n/a	n/a	2	2
BIOL	Biology 110	Everson	3	1	n/a	4
BIOL	Noyce Fellow	n/a	n/a	n/a	1	1
CHEM	Chemistry 441	Taft & Archland	1	0	n/a	1
MATH	Calculus 101A	Stevens	1	1	n/a	2
MATH	Calculus 110	Olson & Stevens	2	1	n/a	3
MATH	Calculus 210	Olson & Stevens	1	1	n/a	2
MATH	Calculus 331	McMullen & Pratt	0	1	n/a	1
MATH	Noyce Fellow	n/a	n/a	n/a	4	4
PHYS	Physics 122	Reeves	8	1	n/a	9
PHYS	Physics 124	Herman	0	1	n/a	1
PHYS	Physics 213	Robinson & Lang	2	1	n/a	3
Total			22	11	7	40

Table 6. STEM Colorado Courses, Instructors and Learning Assistant Positions: Fall 2005

Dept	Course Name	Lead Instructor(s)	Learning Assistants			
			New	Returning	Noyce	Total
ASTR	Astronomy 101	Helm	3	1	n/a	4
ASTR	Noyce Fellow	n/a	n/a	n/a	3	3
BIOL	Biology 111	Richards	4	0	n/a	4
BIOL	Biology 465	Everson & Jackson	4	0	n/a	4
BIOL	Noyce Fellow	n/a	n/a	n/a	2	2
CHEM	Chemistry 102	Thompson	0	1	n/a	1
MATH	Calculus 101B	Stevens	2	0	n/a	2
MATH	Calculus 110	Neilson & Tetlow	1	0	n/a	1
MATH	Calculus 210	Olson & Stevens	2	0	n/a	2
MATH	Calculus 331	McMullen	2	0	n/a	2
MATH	Noyce Fellow	n/a	n/a	n/a	6	6
PHYS	Physics 102	Reeves	1	1	n/a	2
PHYS	Physics 120	Lauerman & Willis	7	0	n/a	7
PHYS	Physics 122	Monahan & Shaw	3	2	n/a	5
PHYS	Physics 213	Robinson & Lang	1	2	n/a	3
PHYS	Noyce Fellow	n/a	n/a	n/a	1	1
Total			30	7	12	49

Table 7. STEM Colorado Courses, Instructors and Learning Assistant Positions: Spring 2006

Department	Course Number	Course Name	Fall 2003	Spring 2004	Fall 2004	Spring 2005	Fall 2005	Spring 2006	Total
Astronomy	ASTR 101	Introductory Astronomy 1				1	1	1	3
Astronomy	ASTR 111	Introductory Astronomy 2	1	1	1				3
Astronomy	ASTR 120	General Astronomy - Stars/Galaxy	1	1		1			3
Astronomy	ASTR 200	Ancient Astronomies			1		1		2
Biology	BIOL 110	Fundamentals of Human Genetics	1		1		1		3
Biology	BIOL 111	Biofundamentals		1		1		1	3
Biology	BIOL 465	Developmental Biology	1	1		1		1	4
Chemistry	CHEM 102	Introductory Chemistry						1	1
Chemistry	CHEM 441	Physical Chemistry/ Biochemistry					1		1
Math	CALC 101A	Calculus 1A w/Algebra	1		1		1		3
Math	CALC 101B	Calculus 1B w/Algebra		1		1		1	3
Math	CALC 110	Calculus 1 for Engineers	1	1	1	1	1	1	6
Math	CALC 210	Calculus 2 for Engineers	1	1	1	1	1	1	6
Math	CALC 331	Matrix Methods		1			1	1	3
Math	CSCI 101	Introduction to Engineering Computing			1				1
Physics	PHYS 101	Physics of Everyday Life 1	1						1
Physics	PHYS 102	Physics of Everyday Life 2		1		1		1	3
Physics	PHYS 120	General Physics 1	1	1	1			1	4
Physics	PHYS 122	General Physics 2				1	1	1	3
Physics	PHYS 124	Sound and Music					1		1
Physics	PHYS 213	General Physics 3					1		1
Physics	PHYS 307	Energy & the Environment				1			1
		Total # of Courses	9	10	8	10	11	11	59

Table 8. STEM Colorado Courses Taught by Semester

Course	Course Description	Use of Learning Assistants
ASTR 101	Introduces principles of modern astronomy for nonscience majors, summarizing our present knowledge about the Earth, Sun, moon, planets, and origin of life. Requires nighttime observation sessions at Observatory and Planetarium.	Facilitating group (6-12 students) laboratory activities and discussions.
ASTR 111	Introduces principles of modern astronomy for nonscience majors, summarizing our present knowledge about the Sun, stars, birth and death of stars, neutron stars, black holes, galaxies, quasars, and the organization and origins of the universe. Offers nighttime observation sessions at Observatory and Planetarium.	
ASTR 120	Examines principles of modern astronomy for nonscience majors, summarizing our present knowledge about the Sun, stars, neutron stars, black holes, interstellar gas, galaxies, quasars, and the structure and origins of the universe. Offers opportunities to attend nighttime observation sessions at Observatory and Planetarium.	
ASTR 200	Documents the numerous ways in which observational astronomy and cosmology have been features of ancient cultures. Includes naked eye astronomy, archaeoastronomy, ethnoastronomy, concepts of time, calendrics, cosmogony, and cosmology.	

Table 9. Course Descriptions and Uses of Learning Assistants: Astronomy

Course	Course Description	Use of Learning Assistants
BIOL 111	A web-based, in-class discussion and online laboratory course covering the fundamental properties of biologic systems. Focused on common evolutionary, ecological, molecular and cellular mechanisms, the course provides a thorough introduction to the biological sciences.	Facilitating small group discussion during weekly lectures. Assisting students in computer labs.
BIOL 465	Analyzes development, emphasizing cellular, molecular, and genetic mechanisms. Topics include descriptive embryology, developmental control of gene expression in eukaryotic cells, mechanisms of differentiation and morphogenesis, and developmental genetics.	Facilitating small group discussion and problem-solving activities during weekly lectures, recitations, and labs.

Table 10. Course Descriptions and Uses of Learning Assistants: Biology

Course	Course Description	Use of Learning Assistants
CHEM 102	Lecture, recitation, and laboratory course. For students with no high school chemistry or a very weak chemistry background. Prepares students for Chemistry 111.	Facilitating discussions of concept questions during lecture and writing review questions.
CHEM 441	Lecture course. Introduces thermodynamics and kinetics, emphasizing macromolecule and biochemical applications. Includes thermodynamics, chemical and physical equilibriums, solution chemistry, transport properties, multiple site binding phenomena, and the rates of chemical and biochemical reactions. Designed for biochemistry and biology majors.	Facilitating discussion of conceptual questions during class and voluntary problem solving sessions.

Table 11. Course Descriptions and Uses of Learning Assistants: Chemistry

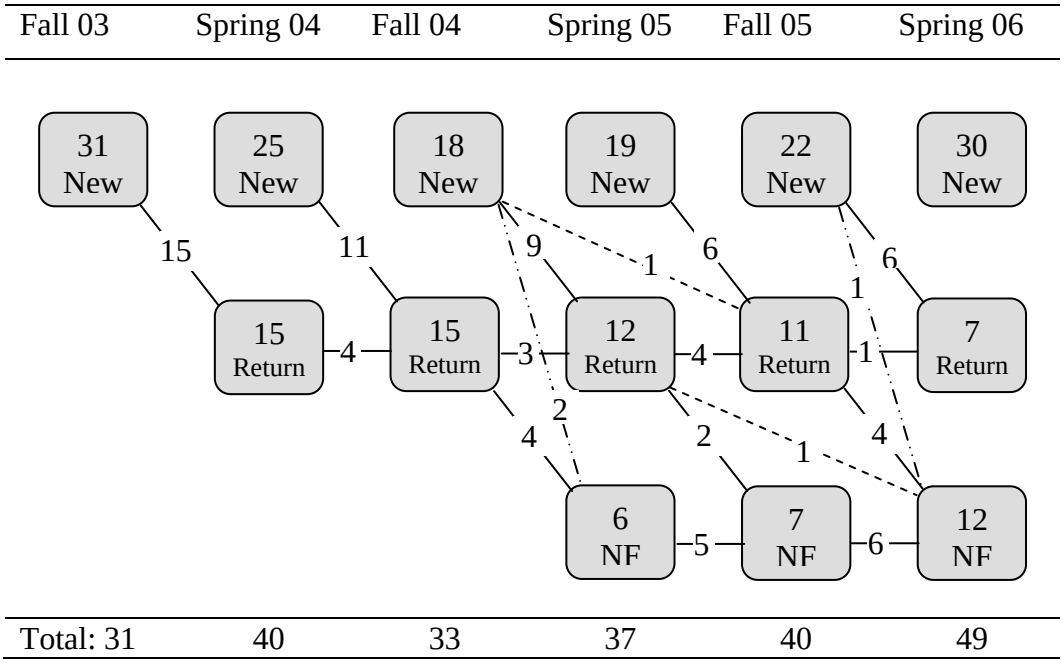
Course	Course Description	Use of Learning Assistants
CALC 101A	First semester of a two semester course in calculus. Topics in analytical geometry and calculus including limits, rates of change of functions, derivatives and integrals of algebraic and transcendental functions, applications of differentiations and integration.	Tutoring during optional workshop (help) sessions.
CALC 101B	Second semester of a two semester course in calculus. Topics in analytical geometry and calculus including limits, rates of change of functions, derivatives and integrals of algebraic and transcendental functions, applications of differentiations and integration.	
CALC 110	Topics in analytical geometry and calculus including limits, rates of change of functions, derivatives and integrals of algebraic and transcendental functions, applications of differentiations and integration.	Facilitating mandatory help sessions for voluntary student subsample; leading problem-solving activities on collective whiteboard.
CALC 210	Continuation of Calculus 110. Focuses on applications of the definite integral, methods of integration, improper integrals, Taylor's theorem, and infinite series.	
CALC 331	Introduces linear algebra and matrices, with an emphasis on applications, including methods to solve systems of linear algebraic and linear ordinary differential equations. Discusses computational algorithms that implement these methods. Some applications in operations research may be included as time permits.	Facilitating voluntary homework/review study sessions. Grading weekly homework assignments.
CSCI 101	Introduces the use of computers in engineering problem solving and elementary numerical methods. Learn programming fundamentals including data and algorithm structure, and modular programming. Numerical methods learned include solving single, non-linear equations, fixed point iteration, Gaussian elimination, and linear regression. Software vehicles include Excel/VBA, MathCAD, and Matlab.	Assisting students during class with the creation of computer programs and course assignments.

Table 12. Course Descriptions and Uses of Learning Assistants: Mathematics

Course	Course Description	Use of Learning Assistants
PHYS 102	Intended primarily for nonscientists, this course is a continuation of Physics 101. Includes electrical power generation and distribution, electrical motors, radio, television, computers, copiers, lasers, fluorescent lights, cameras, and medical imaging. Prereqs., Physics 101 and high school algebra.	Facilitating small group discussion and problem solving during Tutorials and lectures.
PHYS 120	Three lectures, one recitation per week, plus three evening exams in the semester. First semester of three-semester sequence for science and engineering students. Covers kinematics, dynamics, momentum of particles and rigid bodies, work and energy, gravitation, simple harmonic motion, and introduction to thermodynamics.	
PHYS 122	Three lectures, one recitation per week, plus three evening exams in the semester. Second semester of three-semester introductory sequence for science and engineering students. Covers electricity and magnetism, wave motion, and optics.	
PHYS 124	Explores the physical processes that underlie the diversity of sound and musical phenomena. Topics covered include the physical nature of sound, the perception of sound, the perception of pitch and harmony, musical instruments, synthesizers and samplers, and room acoustics. Nonmathematical; geared toward nonscience majors.	Working with students during help room hours.
PHYS 213	Third semester of introductory sequence for science and engineering students except physics majors and those studying computer applications in physics (for these, see Physics 217). Covers special relativity, quantum theory, atomic physics, solid state, and nuclear physics.	Facilitating small group discussion and problem solving during lectures. Assisting students at help sessions. Providing feedback to the instructors through field notes.
PHYS 307	Contemporary issues in energy consumption and its environmental impact, including fossil fuel use and depletion; nuclear energy and waste disposal; solar, wind, hydroelectric, and other renewable sources; home heating; energy storage; fuel cells; and alternative transportation vehicles. Included are some basic physical concepts and principles that often constrain choices. No background in physics is required.	Facilitating small group discussion and problem solving.

Table 13. Course Descriptions and Uses of Learning Assistants: Physics

Learning Assistant Cohorts



NOTE: The values in the figure represent the number of individuals participating in the STEM Colorado program. Note that this is different than the values in tables 1-7 because those tables represent the number of learning assistant positions. One Learning Assistant in each of the first three semesters of the STEM Colorado program held two positions.

Figure 1. Flow Chart of Learning Assistant Cohorts: Fall 2003 to Spring 2006.

Total Semesters in STEM	Number of Learning Assistants	Semesters	Learning Assistants
6	3	F03-S06	Edgar, Virginia, Warren
5	3	S04-S06	Felix, Doug, Allen
4	2	S04-S05, S06	Jen
		F04-S06	Fran
3	9	F03-S04	Tyson
		F04-F05	Harold, Katrina, Olivia, George
		S05-S06	Diane, Greta, Judith, Raymond
2	34	F03-S04	Jasmine, Lance, Gregory, Conner, Samantha, Jocelyn, Evelyn, Bailey Melanie, Ewan, Seth
		S04-F04	Marissa, Nicole, Helen, Irene, Steven, Kerri, Bill
		F04-S05	Ronald, Colleen, Edward, Isabel, Brent, Sara
		F04, F05	Noelle
		S05-F05	Donovan, Theodore
		F05-S06	Gail, Monty, Conway, Paul, Ashton, Cleveland, Christina

Table 14. Learning Assistants Participating in STEM Colorado Program more than one semester

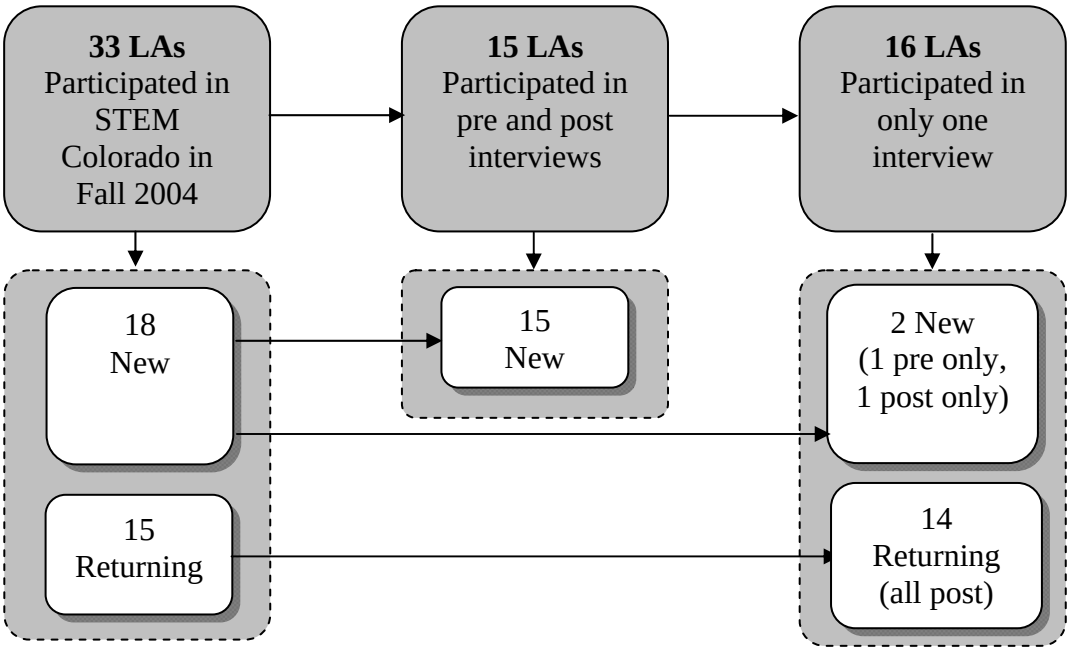


Figure 2. Data Collection from Learning Assistants: Fall 2004.

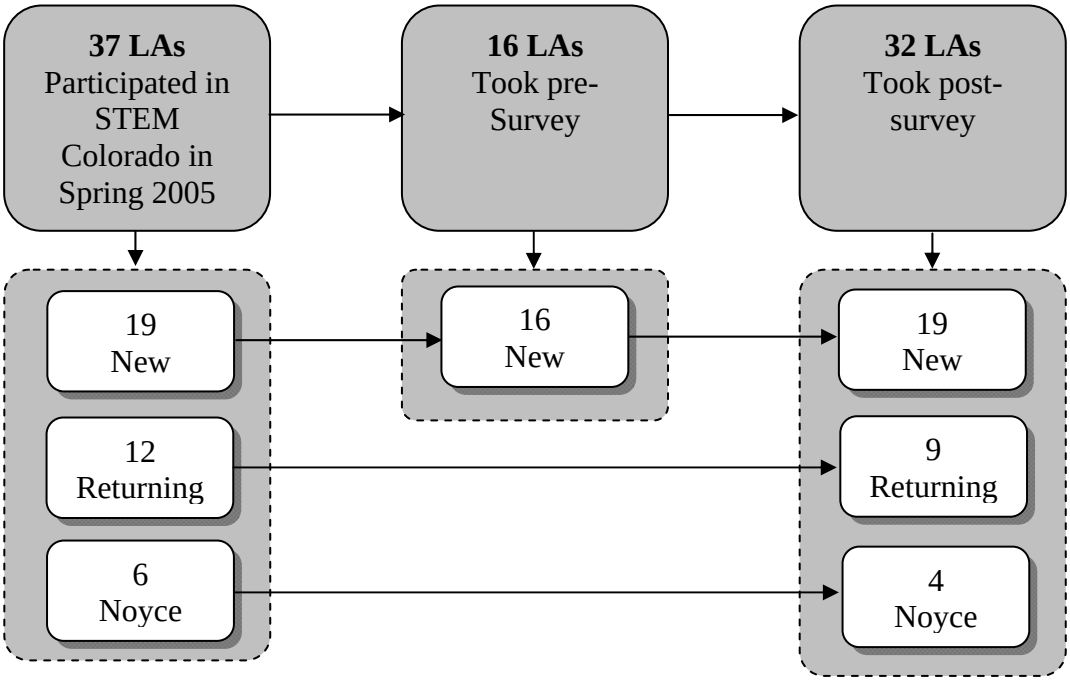


Figure 3. Data Collection from Learning Assistants: Spring 2005.

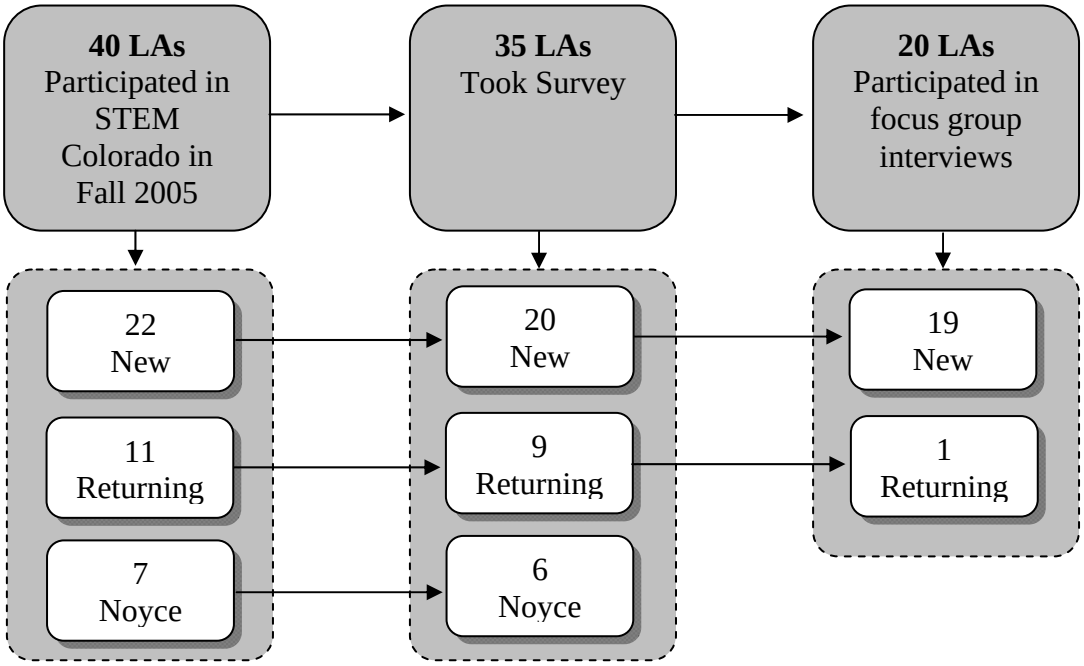


Figure 4. Data Collection from Learning Assistants: Fall 2005.

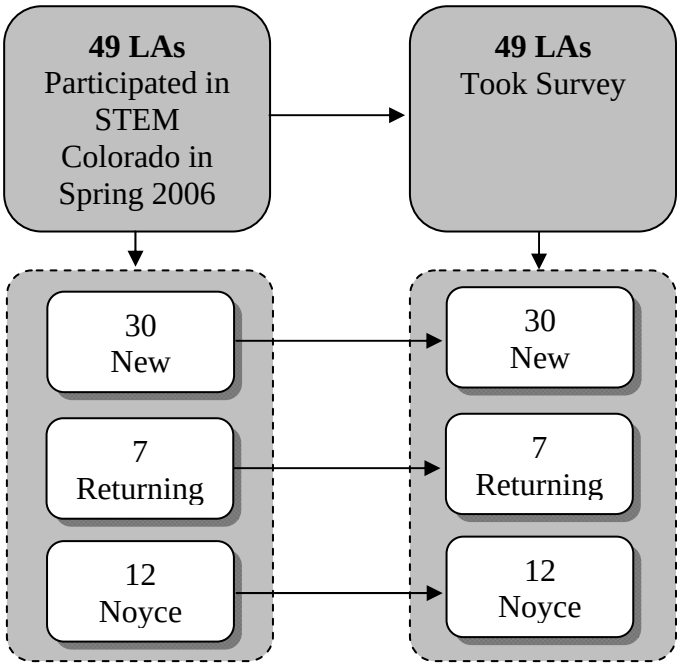


Figure 5. Data Collection from Learning Assistants: Spring 2006.

Demographic Characteristics of Learning Assistants

	Fall 2003 (N=31)	Spr 2004 (N=40)	Fall 2004 (N=33)	Spr 2005 (N=32)	Fall 2005 (N=35)	Spr 2006 (N=49)
Gender						
Female	42% (13)	48% (19)	52% (17)	41% (13)	40% (14)	39% (19)
Male	58% (18)	53% (21)	48% (16)	59% (19)	60% (21)	61% (30)
Race/Ethnicity						
American Indian	--	3% (1)	--	3% (1)	3% (1)	2% (1)
Asian	--	3% (1)	--	9% (3)	0% (0)	2% (1)
Black	--	0% (0)	--	0% (0)	0% (0)	4% (2)
Hispanic	--	5% (2)	--	3% (1)	9% (3)	6% (3)
Multiracial	--	0% (0)	--	0% (0)	0% (0)	2% (1)
White	--	73% (29)	--	78% (25)	89% (31)	76% (37)
No information	--	18% (7)	--	6% (2)	0% (0)	8% (4)
Year in School						
Freshman	--	--	--	13% (4)	--	12% (6)
Sophomore	--	--	--	38% (12)	--	25% (12)
Junior	--	--	--	25% (8)	--	16% (8)
Senior	--	--	--	19% (6)	--	39% (19)
5th yr Senior	--	--	--	3% (1)	--	4% (2)
Post- baccalaureate	--	--	--	3% (1)	--	2% (1)
Masters student	--	--	--	0% (0)	--	2% (1)
Academic Major†						
Anthropology	--	--	--	0% (0)	6% (2)	0% (0)
Applied Math	--	--	--	25% (8)	14% (5)	14% (7)
Astronomy	--	--	--	6% (2)	17% (6)	4% (2)
Astrophysics	--	--	--	3% (1)	6% (2)	6% (3)
Biochemistry	--	--	--	6% (2)	3% (1)	6% (3)
Biology	--	--	--	13% (4)	9% (3)	18% (9)
Chemistry	--	--	--	0% (0)	0% (0)	4% (2)
Computer Science	--	--	--	3% (1)	3% (1)	4% (2)
Economics	--	--	--	3% (1)	0% (0)	0% (0)
Education	--	--	--	19% (6)	17% (6)	16% (8)
Engineering	--	--	--	13% (4)	20% (7)	29% (14)
Fine Arts	--	--	--	0% (0)	3% (1)	0% (0)
Germanic Studies	--	--	--	0% (0)	3% (1)	0% (0)
Mathematics	--	--	--	13% (4)	14% (5)	12% (6)
Physics	--	--	--	22% (7)	29% (10)	18% (9)
Psychology	--	--	--	0% (0)	3% (1)	0% (0)
Spanish	--	--	--	0% (0)	0% (0)	6% (3)
Undeclared	--	--	--	3% (1)	0% (0)	0% (0)
No Info provided	--	--	--	3% (1)	0% (0)	0% (0)

NOTE: † Because respondents were able to list more than one academic major, the rows in this section of the table are not mutually exclusive and do not sum to 100%.

Table 15. Demographic Characteristics of Learning Assistants by Semester

	New Learning Assistants (N = 19)	Returning Learning Assistants (N = 9)	Noyce Fellows (N = 4)	Total (N = 32)
Gender				
Female	42% (8)	56% (5)	0% (0)	41% (13)
Male	58% (11)	44% (4)	100% (4)	59% (19)
Race/Ethnicity				
American Indian	0% (0)	0% (0)	25% (1)	3% (1)
Asian American	16% (3)	0% (0)	0% (0)	9% (3)
Hispanic	0% (0)	0% (0)	25% (1)	3% (1)
White	74% (14)	100% (9)	50% (2)	78% (25)
No information	11% (2)	0% (0)	0% (0)	6% (2)
Year in School				
Freshman	21% (4)	0% (0)	0% (0)	13% (4)
Sophomore	32% (6)	67% (6)	0% (0)	38% (12)
Junior	21% (4)	11% (1)	75% (3)	25% (8)
Senior	21% (4)	22% (2)	0% (0)	19% (6)
5th yr Senior	5% (1)	0% (0)	0% (0)	3% (1)
Post baccalaureate	0% (0)	0% (0)	25% (1)	3% (1)
Academic Major†				
Applied Math	26% (5)	11% (1)	50% (2)	25% (8)
Astronomy	0% (0)	22% (2)	0% (0)	6% (2)
Astrophysics	0% (0)	11% (1)	0% (0)	3% (1)
Biochemistry	11% (2)	0% (0)	0% (0)	6% (2)
Biology	16% (3)	11% (1)	0% (0)	13% (4)
Computer science	0% (0)	0% (0)	25% (1)	3% (1)
Economics	0% (0)	11% (1)	0% (0)	3% (1)
Education	11% (2)	11% (1)	75% (3)	19% (6)
Engineering	16% (3)	11% (1)	0% (0)	13% (4)
Mathematics	21% (4)	0% (0)	0% (0)	13% (4)
Physics	26% (5)	22% (2)	0% (0)	22% (7)
Undeclared	5% (1)	0% (0)	0% (0)	3% (1)
No info provided	0% (0)	11% (1)	0% (0)	3% (1)

NOTE: † Because respondents were able to list more than one academic major, the rows in this section of the table are not mutually exclusive and do not sum to 100%.

Table 16. Demographic Characteristics of Learning Assistants by Experience in STEM Colorado Program: Spring 2005

	New Learning Assistants (N = 20)	Returning Learning Assistants (N = 9)	Noyce Fellows (N = 6)	Total (N = 35)
Gender				
Female	40% (8)	44% (4)	33% (2)	40% (14)
Male	60% (12)	56% (5)	67% (4)	60% (21)
Race/Ethnicity				
American Indian	0% (0)	0% (0)	17% (1)	3% (1)
Asian American	0% (0)	0% (0)	0% (0)	0% (0)
Hispanic	10% (2)	0% (0)	17% (1)	9% (3)
White	90% (18)	100% (9)	67% (4)	89% (31)
No information	0% (0)	0% (0)	0% (0)	0% (0)
Academic Major†				
Anthropology	5% (1)	11% (1)	0% (0)	6% (2)
Applied Math	5% (1)	11% (1)	50% (3)	14% (5)
Astronomy	10% (2)	33% (3)	17% (1)	17% (6)
Astrophysics	10% (2)	0% (0)	0% (0)	6% (2)
Biochemistry	5% (1)	0% (0)	0% (0)	3% (1)
Biology	10% (2)	11% (1)	0% (0)	9% (3)
Computer Science	0% (0)	0% (0)	17% (1)	3% (1)
Education	0% (0)	11% (1)	83% (5)	17% (6)
Engineering	25% (5)	22% (2)	0% (0)	20% (7)
Fine Arts	5% (1)	0% (0)	0% (0)	3% (1)
Germanic Studies	5% (1)	0% (0)	0% (0)	3% (1)
Mathematics	20% (4)	11% (1)	0% (0)	14% (5)
Physics	40% (8)	22% (2)	0% (0)	29% (10)
Psychology	5% (1)	0% (0)	0% (0)	3% (1)
No info provided	0% (0)	0% (0)	0% (0)	0% (0)

NOTE: † Because respondents were able to list more than one academic major, the rows in this section of the table are not mutually exclusive and do not sum to 100%.

Table 17. Demographic Characteristics of Learning Assistants by Experience in STEM Colorado Program: Fall 2005

	New Learning Assistants (N = 30)	Returning Learning Assistants (N = 7)	Noyce Fellows (N =12)	Total (N = 49)
Gender				
Female	37% (11)	14% (1)	58% (7)	39% (19)
Male	63% (19)	86% (6)	42% (5)	61% (30)
Race/Ethnicity				
African American	6% (2)	0% (0)	0% (0)	4% (2)
American Indian	0% (0)	0% (0)	8% (1)	2% (1)
Asian American	3% (1)	0% (0)	0% (0)	2% (1)
Hispanic	0% (0)	14% (1)	17% (2)	6% (3)
Multiracial	3% (1)	0% (0)	0% (0)	2% (1)
White	77% (23)	72% (5)	75% (9)	76% (37)
No information	10% (3)	14% (1)	0% (0)	8% (4)
Year in School				
Freshman	20% (6)	0% (0)	0% (0)	12% (6)
Sophomore	27% (8)	29% (2)	17% (2)	25% (12)
Junior	17% (5)	29% (2)	8% (1)	16% (8)
Senior	33% (10)	29% (2)	58% (7)	39% (19)
5th Yr Senior	0% (0)	14% (1)	8% (1)	4% (2)
Post baccalaureate	3% (1)	0% (0)	0% (0)	2% (1)
Masters student	0% (0)	0% (0)	8% (1)	2% (1)
Academic Major†				
Applied Math	10% (3)	0% (0)	33% (4)	14% (7)
Astronomy	3% (1)	0% (0)	8% (1)	4% (2)
Astrophysics	6% (2)	14% (1)	0% (0)	6% (3)
Biochemistry	6% (2)	14% (1)	0% (0)	6% (3)
Biology	27% (8)	0% (0)	8% (1)	18% (9)
Chemistry	3% (1)	0% (0)	8% (1)	4% (2)
Computer Science	3% (1)	0% (0)	8% (1)	4% (2)
Education	3% (1)	14% (1)	50% (6)	16% (8)
Engineering	40% (12)	29% (2)	0% (0)	29% (14)
Mathematics	10% (3)	14% (1)	17% (2)	12% (6)
Physics	17% (5)	43% (3)	8% (1)	18% (9)
Spanish	10% (3)	0% (0)	0% (0)	6% (3)

NOTE: † Because respondents were able to list more than one academic major, the rows in this section of the table are not mutually exclusive and do not sum to 100%.

Table 18. Demographic Characteristics of Learning Assistants by Experience in STEM Colorado Program: Spring 2006

Learning Assistant Interest in Teaching as a Career

	New Learning Assistants (N = 16)	Returning Learning Assistants (N = 14)	Noyce Fellows (N = 0)	Total (N=30)
High	31% (5)	71% (10)	n/a	50% (15)
Medium	44% (7)	29% (4)	n/a	37% (11)
Low	25% (4)	0% (0)	n/a	13% (4)
Totals	100%	100%	n/a	100%

NOTE: Categories were defined as follows: High = K-12 teaching described as first choice or among top choices; Medium = Might consider K-12 teaching as a second career; Low = No interest expressed for K-12 teaching.

Table 19. Categorized Interest in K-12 teaching from responses to the interview question *What are your current career plans?*: Fall 2004

	New Learning Assistants (N = 19)	Returning Learning Assistants (N = 9)	Noyce Fellows (N=4)	Total (N=32)
Definitely	21% (4)	56% (5)	100% (4)	41% (13)
Possibly	42% (8)	22% (2)	0% (0)	31% (10)
As a second career	16% (3)	11% (1)	0% (0)	13% (4)
Not at all	21% (4)	11% (1)	0% (0)	16% (5)
Totals	100%	100%	100%	100%

Table 20. Observed Responses to the Survey Question *Are you considering teaching at the K-12 level?*: Spring 2005

	New Learning Assistants (N = 22)	Returning Learning Assistants (N = 11)	Noyce Fellows (N = 7)
High	32% (7)	36% (4)	86% (6)
Medium	36% (8)	27% (3)	0% (0)
Low	18% (4)	9% (1)	0% (0)
No Information	14% (3)	27% (3)	14% (1)
Totals	100%	100%	100%

NOTE: Responses of new Learning Assistants were categorized based on their comments during focus group interviews. Students coded as High stated that they were definitely interested in K-12 teaching; students coded as Medium stated that they were possibly interested in K-12 teaching or in teaching as a second career; and students coded as Low stated that they were not interested in K-12 teaching. Categorizations for Returning Learning Assistants and Noyce Fellows were based on responses to the following survey questions: 1) Over the course of the semester, how has your interest in teaching as a profession changed? 2) What is your current career choice? Returning Learning Assistants and Noyce Fellows were coded as having a High interest if they answered "K-12 teacher" (or some variety such as "high school math teacher") as their current career choice. Students that did not respond that they wanted to be a K-12 teacher were then coded as "Medium" if they said that they wanted to teach as a second career. Students coded as "Low" reported little or no interest in pursuing K-12 teaching as a career.

Table 21. Categorized Interest in Teaching among Learning Assistants: Fall 2005

	New Learning Assistants (N = 30)	Returning Learning Assistants (N = 7)	Noyce Fellows (N = 12)	Total (N = 49)
High	10% (3)	29% (2)	100% (12)	35% (17)
Medium	43% (13)	57% (4)	0% (0)	35% (17)
Low	17% (5)	14% (1)	0% (0)	12% (6)
No information	30% (9)	0% (0)	0% (0)	18% (9)
Totals	100%	100%	100%	100%

NOTE: Categorizations were based on responses to the following survey questions: 1) Over the course of the semester, how has your interest in teaching as a profession changed? 2) What is your current career choice? Returning Learning Assistants and Noyce Fellows were coded as having a High interest if they answered "K-12 teacher" (or some variety such as "high school math teacher") as their current career choice. Students that did not respond that they wanted to be a K-12 teacher were then coded as "Medium" if they said that they wanted to teach as a second career. Students coded as "Low" reported little or no interest in pursuing K-12 teaching as a career.

Table 22. Categorized Interest in Teaching among Learning Assistants: Spring 2006