

**02 INFORMATION ABOUT PRINCIPAL INVESTIGATORS/PROJECT DIRECTORS(PI/PD) and
co-PRINCIPAL INVESTIGATORS/co-PROJECT DIRECTORS**

Submit only ONE copy of this form for each PI/PD and co-PI/PD identified on the proposal. The form(s) should be attached to the original proposal as specified in GPG Section II.B. Submission of this information is voluntary and is not a precondition of award. This information will not be disclosed to external peer reviewers. **DO NOT INCLUDE THIS FORM WITH ANY OF THE OTHER COPIES OF YOUR PROPOSAL AS THIS MAY COMPROMISE THE CONFIDENTIALITY OF THE INFORMATION.**

PI/PD Name: Sidney Kolpas

Gender: Male Female
Ethnicity: (Choose one response) Hispanic or Latino Not Hispanic or Latino

Race:
(Select one or more)
 American Indian or Alaska Native
 Asian
 Black or African American
 Native Hawaiian or Other Pacific Islander
 White

Disability Status:
(Select one or more)
 Hearing Impairment
 Visual Impairment
 Mobility/Orthopedic Impairment
 Other
 None

Citizenship: (Choose one) U.S. Citizen Permanent Resident Other non-U.S. Citizen

Check here if you do not wish to provide any or all of the above information (excluding PI/PD name):

REQUIRED: Check here if you are currently serving (or have previously served) as a PI, co-PI or PD on any federally funded project

Ethnicity Definition:

Hispanic or Latino. A person of Mexican, Puerto Rican, Cuban, South or Central American, or other Spanish culture or origin, regardless of race.

Race Definitions:

American Indian or Alaska Native. A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.

Asian. A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

Black or African American. A person having origins in any of the black racial groups of Africa.

Native Hawaiian or Other Pacific Islander. A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

White. A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

WHY THIS INFORMATION IS BEING REQUESTED:

The Federal Government has a continuing commitment to monitor the operation of its review and award processes to identify and address any inequities based on gender, race, ethnicity, or disability of its proposed PIs/PDs. To gather information needed for this important task, the proposer should submit a single copy of this form for each identified PI/PD with each proposal. Submission of the requested information is voluntary and will not affect the organization's eligibility for an award. However, information not submitted will seriously undermine the statistical validity, and therefore the usefulness, of information received from others. Any individual not wishing to submit some or all the information should check the box provided for this purpose. (The exceptions are the PI/PD name and the information about prior Federal support, the last question above.)

Collection of this information is authorized by the NSF Act of 1950, as amended, 42 U.S.C. 1861, et seq. Demographic data allows NSF to gauge whether our programs and other opportunities in science and technology are fairly reaching and benefiting everyone regardless of demographic category; to ensure that those in under-represented groups have the same knowledge of and access to programs and other research and educational opportunities; and to assess involvement of international investigators in work supported by NSF. The information may be disclosed to government contractors, experts, volunteers and researchers to complete assigned work; and to other government agencies in order to coordinate and assess programs. The information may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records", 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records", 63 Federal Register 268 (January 5, 1998).

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PI/PD Name: Jean Lecuyer

Gender: Male Female
Ethnicity: (Choose one response) Hispanic or Latino Not Hispanic or Latino

Race:
(Select one or more)
 American Indian or Alaska Native
 Asian
 Black or African American
 Native Hawaiian or Other Pacific Islander
 White

Disability Status:
(Select one or more)
 Hearing Impairment
 Visual Impairment
 Mobility/Orthopedic Impairment
 Other
 None

Citizenship: (Choose one) U.S. Citizen Permanent Resident Other non-U.S. Citizen

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List of Suggested Reviewers or Reviewers Not To Include (optional)

SUGGESTED REVIEWERS:

Not Listed

REVIEWERS NOT TO INCLUDE:

Not Listed

COVER SHEET FOR PROPOSAL TO THE NATIONAL SCIENCE FOUNDATION

PROGRAM ANNOUNCEMENT/SOLICITATION NO./CLOSING DATE <i>if not in response to a program announcement/solicitation enter NSF 04-23</i>					FOR NSF USE ONLY	
NSF 06-527			04/12/06		NSF PROPOSAL NUMBER	
FOR CONSIDERATION BY NSF ORGANIZATION UNIT(S) (Indicate the most specific unit known, i.e. program, division, etc.)						
DUE - S-STEM: SCHLR SCI TECH ENG&MATH						
DATE RECEIVED	NUMBER OF COPIES	DIVISION ASSIGNED	FUND CODE	DUNS# (Data Universal Numbering System)	FILE LOCATION	
				078819539		
EMPLOYER IDENTIFICATION NUMBER (EIN) OR TAXPAYER IDENTIFICATION NUMBER (TIN)		SHOW PREVIOUS AWARD NO. IF THIS IS <input type="checkbox"/> A RENEWAL <input type="checkbox"/> AN ACCOMPLISHMENT-BASED RENEWAL		IS THIS PROPOSAL BEING SUBMITTED TO ANOTHER FEDERAL AGENCY? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> IF YES, LIST ACRONYM(S)		
952668744						
NAME OF ORGANIZATION TO WHICH AWARD SHOULD BE MADE			ADDRESS OF AWARDEE ORGANIZATION, INCLUDING 9 DIGIT ZIP CODE			
Glendale Community College			Glendale Community College 1500 North Verdugo Road Glendale, CA. 912082894			
AWARDEE ORGANIZATION CODE (IF KNOWN)						
0012039000						
NAME OF PERFORMING ORGANIZATION, IF DIFFERENT FROM ABOVE			ADDRESS OF PERFORMING ORGANIZATION, IF DIFFERENT, INCLUDING 9 DIGIT ZIP CODE			
PERFORMING ORGANIZATION CODE (IF KNOWN)						
IS AWARDEE ORGANIZATION (Check All That Apply) (See GPG II.C For Definitions)		<input type="checkbox"/> SMALL BUSINESS <input type="checkbox"/> FOR-PROFIT ORGANIZATION		<input type="checkbox"/> MINORITY BUSINESS <input type="checkbox"/> WOMAN-OWNED BUSINESS		<input checked="" type="checkbox"/> IF THIS IS A PRELIMINARY PROPOSAL THEN CHECK HERE
TITLE OF PROPOSED PROJECT Glendale Community College Math and Science Transfer, Excellence and Retention Scholarship Program						
REQUESTED AMOUNT \$	PROPOSED DURATION (1-60 MONTHS)	REQUESTED STARTING DATE	SHOW RELATED PRELIMINARY PROPOSAL NO. IF APPLICABLE			
500,000	60 months	07/01/06				
CHECK APPROPRIATE BOX(ES) IF THIS PROPOSAL INCLUDES ANY OF THE ITEMS LISTED BELOW						
<input type="checkbox"/> BEGINNING INVESTIGATOR (GPG I.A)			<input type="checkbox"/> HUMAN SUBJECTS (GPG II.D.6) Exemption Subsection _____ or IRB App. Date _____			
<input type="checkbox"/> DISCLOSURE OF LOBBYING ACTIVITIES (GPG II.C)			<input type="checkbox"/> INTERNATIONAL COOPERATIVE ACTIVITIES: COUNTRY/COUNTRIES INVOLVED (GPG II.C.2.j)			
<input type="checkbox"/> PROPRIETARY & PRIVILEGED INFORMATION (GPG I.B, II.C.1.d)						
<input type="checkbox"/> HISTORIC PLACES (GPG II.C.2.j)						
<input type="checkbox"/> SMALL GRANT FOR EXPLOR. RESEARCH (SGER) (GPG II.D.1)						
<input type="checkbox"/> VERTEBRATE ANIMALS (GPG II.D.5) IACUC App. Date _____			<input type="checkbox"/> HIGH RESOLUTION GRAPHICS/OTHER GRAPHICS WHERE EXACT COLOR REPRESENTATION IS REQUIRED FOR PROPER INTERPRETATION (GPG I.G.1)			
PI/PD DEPARTMENT		PI/PD POSTAL ADDRESS				
Mathematics		1500 North Verdugo Road SG 321 Glendale, CA 912082894 United States				
PI/PD FAX NUMBER						
818-549-9436						
NAMES (TYPED)	High Degree	Yr of Degree	Telephone Number	Electronic Mail Address		
PI/PD NAME						
Sidney Kolpas	EdD	1979	818-240-1000	skolpas@glendale.edu		
CO-PI/PD						
Jean Lecuyer	PhD	1965	818-240-1000	jlecuyer@glendale.edu		
CO-PI/PD						
CO-PI/PD						
CO-PI/PD						

CERTIFICATION PAGE

Certification for Authorized Organizational Representative or Individual Applicant:

By signing and submitting this proposal, the individual applicant or the authorized official of the applicant institution is: (1) certifying that statements made herein are true and complete to the best of his/her knowledge; and (2) agreeing to accept the obligation to comply with NSF award terms and conditions if an award is made as a result of this application. Further, the applicant is hereby providing certifications regarding debarment and suspension, drug-free workplace, and lobbying activities (see below), as set forth in Grant Proposal Guide (GPG), NSF 04-23. Willful provision of false information in this application and its supporting documents or in reports required under an ensuing award is a criminal offense (U. S. Code, Title 18, Section 1001).

In addition, if the applicant institution employs more than fifty persons, the authorized official of the applicant institution is certifying that the institution has implemented a written and enforced conflict of interest policy that is consistent with the provisions of Grant Policy Manual Section 510; that to the best of his/her knowledge, all financial disclosures required by that conflict of interest policy have been made; and that all identified conflicts of interest will have been satisfactorily managed, reduced or eliminated prior to the institution's expenditure of any funds under the award, in accordance with the institution's conflict of interest policy. Conflicts which cannot be satisfactorily managed, reduced or eliminated must be disclosed to NSF.

Drug Free Work Place Certification

By electronically signing the NSF Proposal Cover Sheet, the Authorized Organizational Representative or Individual Applicant is providing the Drug Free Work Place Certification contained in Appendix C of the Grant Proposal Guide.

Debarment and Suspension Certification

(If answer "yes", please provide explanation.)

Is the organization or its principals presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency?

Yes

No

By electronically signing the NSF Proposal Cover Sheet, the Authorized Organizational Representative or Individual Applicant is providing the Debarment and Suspension Certification contained in Appendix D of the Grant Proposal Guide.

Certification Regarding Lobbying

This certification is required for an award of a Federal contract, grant, or cooperative agreement exceeding \$100,000 and for an award of a Federal loan or a commitment providing for the United States to insure or guarantee a loan exceeding \$150,000.

Certification for Contracts, Grants, Loans and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

AUTHORIZED ORGANIZATIONAL REPRESENTATIVE		SIGNATURE	DATE
NAME			
TELEPHONE NUMBER	ELECTRONIC MAIL ADDRESS	FAX NUMBER	

*SUBMISSION OF SOCIAL SECURITY NUMBERS IS VOLUNTARY AND WILL NOT AFFECT THE ORGANIZATION'S ELIGIBILITY FOR AN AWARD. HOWEVER, THEY ARE AN INTEGRAL PART OF THE INFORMATION SYSTEM AND ASSIST IN PROCESSING THE PROPOSAL. SSN SOLICITED UNDER NSF ACT OF 1950, AS AMENDED.

**NATIONAL SCIENCE FOUNDATION
Division of Undergraduate Education**

NSF FORM 1295: PROJECT DATA FORM

The instructions and codes to be used in completing this form are provided in Appendix II.

1. **Program-track** to which the Proposal is submitted: **S-STEM: SCHLR SCI TECH ENG & MATH**

2. Name of **Principal Investigator/Project Director** (as shown on the Cover Sheet):

Kolpas, Sidney

3. Name of submitting **Institution** (as shown on Cover Sheet):

Glendale Community College

4. **Other Institutions** involved in the project's operation:

Project Data:

A. Major Discipline Code: **99**

B. Academic Focus Level of Project: **LO**

C. Highest Degree Code: **A**

D. Category Code:

E. Business/Industry Participation Code: **NA**

F. Audience Code: **WM** _ _ _ _ _

G. Institution Code: **PUBL**

H. Strategic Area Code:

I. Project Features: **1 3** _ _ _ _

Estimated number in each of the following categories to be directly affected by the activities of the project during its operation:

J. Undergraduate Students: **650**

K. Pre-college Students: **0**

L. College Faculty: **25**

M. Pre-college Teachers: **0**

N. Graduate Students: **0**

Glendale Community College
Math & Science Transfer, Excellence and Retention Scholarship
Program Summary

The Glendale Community College Math and Science Transfer, Excellence and Retention (MASTER) project will increase the number of students pursuing science, technology, engineering and math (STEM) disciplines at the associate degree level. Participants will be supported via financial assistance, mentoring and support for successful transfer to a four year university, in a learning community of scholars. Objectives will focus on providing scholarships to academically talented, financially disadvantaged STEM students; providing support to these scholars that will enable a minimum of 70% to persist until associate degree/transfer achievement; and providing transfer assistance to students in the program who complete requirements and desire enrollment in a four-year institution.

The college will reach out to groups of talented students who would otherwise not be able to, or not choose to, enter into a STEM career. Such students come from underrepresented minorities and low income families, and often are or would be first generation college students. For these young men and women, college, and particularly a STEM career, represents a formidable barrier, but one that can be overcome with special financial help and learning assistance. Glendale Community College (GCC) is particularly well positioned to conduct such a program and make it a success. As a community college, GCC is the entry point for precisely the kind of low-income and minority students that the program desires to reach. Further, the college already has considerable experience doing just the type of outreach required for the program. It has run for over ten years a very successful Alliance for Minority Participation (AMP) program in collaboration with California State University, Northridge. The college already has an extensive support system to help students succeed, especially those who do not have a strong support system of their own, such as first generation college students and students from lower economic strata. The college's counseling staff is one of the largest in the state, as is the supplemental instruction program which provides collaborative learning workshops in many science and math classes. GCC has a Math/Science Center for computer work and drop-in tutoring, a regular tutoring program, and, because of the AMP experience, a mentoring program and a summer bridge program focusing on math training and general college preparation. In addition, the college has a strong academic program, in the top 10% among California community colleges, that transfers a large number of students to the University of California and California State University systems and to private universities such as the University of Southern California.

The project has significant **intellectual merit**: activities address a major challenge in recruiting students to STEM careers; it is supported by a capable faculty and by adequate institutional facilities, resources, and commitment, as detailed elsewhere in this document; it focuses on documenting measurable improvements in student learning; and integrates effective evaluation and dissemination design. The project will also have **broader impacts**: a replicable support system for STEM students will be disseminated and be useful to other institutions; and faculty will take specific steps to ensure that pedagogical strategies related to enhancing the success of underrepresented students will be integrated into instructional approaches benefiting the college's diverse student population and broadening the successful participation of underrepresented groups in STEM-related learning.

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For font size and page formatting specifications, see GPG section II.C.

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Project Summary (not to exceed 1 page)	1	_____
Table of Contents	1	_____
Project Description (Including Results from Prior NSF Support) (not to exceed 15 pages) (Exceed only if allowed by a specific program announcement/solicitation or if approved in advance by the appropriate NSF Assistant Director or designee)	14	_____
References Cited	1	_____
Biographical Sketches (Not to exceed 2 pages each)	4	_____
Budget (Plus up to 3 pages of budget justification)	9	_____
Current and Pending Support	2	_____
Facilities, Equipment and Other Resources	2	_____
Special Information/Supplementary Documentation	0	_____
Appendix (List below.) (Include only if allowed by a specific program announcement/ solicitation or if approved in advance by the appropriate NSF Assistant Director or designee)	_____	_____
Appendix Items:		

*Proposers may select any numbering mechanism for the proposal. The entire proposal however, must be paginated. Complete both columns only if the proposal is numbered consecutively.

**Glendale Community College
Math & Science Transfer, Excellence and Retention Scholarship Program**

Project Description

Glendale Community College (GCC) proposes the creation of a scholarship program for science, engineering and math majors at the associate degree level. The program, to be called Math and Science Transfer, Excellence and Retention (MASTER) will build upon a current GCC project aimed at increasing the number of underrepresented students who receive bachelor's degrees in science, engineering, or mathematics, the Alliance for Minority Participation, partially funded by NSF as part of the California State University Louis Stokes Alliance for Minority Participation (HRD 0331537).

Results from Prior NSF Support

In 1993, GCC established the Alliance for Minority Participation (AMP), a support program for science, engineering and mathematics students that emphasized strengthening problem solving and mathematical skills applicable to all academic pursuits. Supported by the NSF, the program was one of dozens of Alliance programs established nationwide, designed to substantially increase the number and quality of minority students receiving baccalaureate degrees in science, mathematics, engineering, and technology and, subsequently, to increase the number of minority students transferring to four year institutions for degrees in these fields.

In twelve years at the college, AMP has had a positive effect both on academic performance and on the persistence rates of participating students with students achieving a significantly higher semester GPA than other underrepresented students and more likely to succeed in their classes. The foundation of the project is a summer bridge program designed to enhance performance in pre-calculus and/or calculus courses, plus the assignment of a caring professor/mentor to each student. Both initiatives will be carried forward into the math and science scholarship program.

OUTCOMES FOR AMP STUDENTS -- FALL 1995 TO FALL 2005		
Measure	AMP Students	Underrepresented Students
Number of Students	1, 125	32,468
Number of Enrollments	4,050	262,683
Course Retention	88%	84%
Course Success	73%	61%
Mean Term GPA	2.59	2.09
Source: GCC Research and Planning		
1. Course retention is the percentage of census enrollments resulting in a grade other than W (withdraw).		
2. Course success is the percentage of census enrollments resulting in a grade of A, B, C, or Credit.		
3. Underrepresented Students are students of Black, Filipino, Latino/Hispanic or American Indian ethnicity.		

Project Objectives and Plans

The MASTER scholarship program will build upon the successful activities established under the AMP program while allowing students majoring in math and science to focus on their studies without the financial restraints that often force them to work full-time. Over 53 percent of GCC

students work 20 or more hours a week, affecting time available for student interaction with faculty and for academics. The scholarship program will increase the number of students majoring in science and math disciplines obtaining associate degrees and/or transferring to four year institutions. The program has three primary goals.

MASTER SCHOLARSHIP PROGRAM PROJECT GOALS
<ol style="list-style-type: none">1. To increase the success of students majoring in science and math through scholarships and the provision of support services that promote full-time enrollment and the attainment of Associate Degrees in the following disciplines: Astronomy, Biology, Chemistry, Computer Science, Engineering, Geology, Oceanography, Mathematics and Physics.2. To assist student transfer to four year institutions to continue their education in one of the above disciplines.3. To increase the participation of low-income, academically talented students in science and math careers, especially students of underrepresented groups.

The scholarship program builds upon a number of initiatives implemented at GCC to increase student retention and success in math and science. The Math-Science Center offers computer programs and drop-in tutoring to support students as they complete their daily assignments and prepare for course exams. Many math and science courses feature Supplemental Instruction (SI), group study and problem-solving sessions facilitated by trained supplemental instruction leaders.

A summer bridge program, currently offered as a four-week intensive course as part of the AMP program, will provide MASTER scholars with an orientation to college, pre-calculus review and calculus instruction and valuable study skills lessons. The bridge program will be offered in conjunction with a Student Development class that includes developing a Student Educational Plan, understanding transfer requirements in the California system, study skills specifically targeted at math and science, and learning to set goals. Students who choose to participate in the summer bridge/academic enrichment program will receive a top-of-the-line graphing calculator and priority registration for the fall semester.

Each student will also be assigned a caring professor/mentor to help them over any problems they may encounter during their stay at Glendale College. More motivated students may select to apply for admission to the Glendale Community College Scholars Science Academy. This program prepares students for transfer to a major university with priority registration, small seminar-style classes and dedicated teachers who put an increased emphasis on scientific thinking and problem solving. Scholars are given priority consideration for transfer to top four-year universities and the college's transfer alliance program with UCLA offers students joint research, scholarly and social opportunities with UCLA faculty and students.

In order to address the goals of the project, GCC has assembled a collaborative team that includes faculty from math and science disciplines and key personnel from Financial Aid,

Academic Counseling and the Transfer Center. During the course of the four-year project, team members will conduct specific activities to achieve three objectives.

- **Objective 1: To provide scholarships for 70 academically talented, financially disadvantaged science, math and engineering students, including those from underrepresented groups.**

Activities:

- Promote the NSF scholarship project, especially to groups of underrepresented students.
- Identify and maintain a pool of eligible students who possess interest in pursuing careers in science, engineering and math.
- Select students who will receive scholarship awards.

- **Objective 2: To provide support to scholarship students that will enable a minimum of 70% to maintain or exceed a 2.5 GPA and persist until associate degree/transfer achievement.**

Activities:

- Engage project participants in individualized academic planning via the Student Development course and an assigned academic counselor.
- Provide support services to participants in the form of computer programs, tutors, a summer bridge program and collaborative learning opportunities through the Supplemental Instruction program.
- Give participants opportunities for interaction with faculty via a faculty mentor program.

- **Objective 3: To provide transfer assistance to 100% of students who complete the scholarship program requirements and desire enrollment in a four-year institution.**

Activities:

- Help students research their transfer options to four-year institutions.
- Assist students in completing necessary paperwork.

Significance of Program and Rationale

Increasing the numbers of college graduates who will fill the United States' pipeline of technical talent is essential for the future of tomorrow's scientific and technological workforce. It will be difficult for the United States to meet future engineering and science personnel shortages unless more is done to bring students into the pipeline, particularly underrepresented students who have traditionally not pursued careers in math and science.

Community colleges are a relatively inexpensive gateway for students entering higher education, and for this reason, they are often a popular entry point for low-income and under represented students of promise. Glendale Community College is no exception. Reflecting trends in the local community population, during the past 20 years, the college's student population has shifted from being primarily native-born to overwhelmingly foreign-born. Today's students speak over 100 different languages with no one group forming a majority on campus. Armenian and Hispanic are the two largest groups making up about 35% and 25%, respectively, of the credit student population.

The college has committed itself to providing a student-centered learning environment that honors diversity. GCC is committed not only to improving all student outcomes but also to ensuring that educationally and economically disadvantaged students are provided equal opportunity to benefit from the college's services and programs and continue to a four-year institution to complete a degree. Because the need for financial assistance is one of the main barriers to transfer for many of these students, improving retention, transfer and graduation rates requires providing more financial assistance and incentives.

With a projected need for an additional 1,140 math and science teachers in Los Angeles County within the next six years (2006 California Labor Market Information), the college recognizes the strong need for recruiting more students to science and math disciplines and mentoring and supporting these students through degree completion. Scholarship program participants will be supported via a variety of services to help increase retention and effectively prepare them for transfer to a four-year institution.

GCC is requesting \$106,250 to award an estimated 70 scholarships during each 12-month period. The actual number of scholarships may vary depending on the amount of financial need students have after other grant and scholarship opportunities are exhausted. An additional \$17,750 is being requested for student support infrastructure and project management each year, after a \$4,000 planning year. The number of projected scholarships is reasonable based on analysis of the high number of students who major in science and math at the college.

	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005
SCIENCE AND MATH MAJORS	2,367	2,333	2,412	2,062	1,742	1,582
Biology/Life Science	394	393	399	357	362	405
Chemistry	47	40	42	48	50	59
Physics	21	16	17	10	10	9
Geology/Earth Science	16	15	11	14	9	10
Oceanography	0	1	2	5	4	7
Computer Science	1,458	1,451	1,443	1,166	869	649
Science	109	90	106	80	77	63
Physical Science	0	15	40	62	50	74
Mathematics	74	87	95	91	101	100
Engineering	248	225	257	229	210	206
Retention Rate ¹	67%	69%	67%	69%	69%	69%

¹ Glendale College Enrollment Data, based on retention of all students, regardless of GPA, from fall to spring.

The big decline in demand for computer science professionals in recent years has created a significant drop in the total number of majors at Glendale Community College. Excluding this program, science and math enrollments have increased about 3% since 1999-2000. This is despite a recent decline in enrollments at GCC and at community colleges statewide. Many potential students are being deterred from attending college because of rising tuition costs. In the past three years, community college fees in California have gone from \$11 to \$18 to \$26 per unit, a 136 percent increase.

Of all science/math majors enrolled at GCC in 2004-2005, 45% received some form of financial aid. The most frequently earned category of financial aid is the Board of Governors (BOG) waiver, which waives enrollment and health services fees and is available to California residents demonstrating financial need. Nearly 42% of science/math majors in 2004-2005 received BOG waivers. Not counting BOG waivers, science/math majors were awarded an average of \$1,102 in financial aid.

Activities on Which the Project Builds

Glendale Community College has an outstanding reputation in the fields of science and math education, with a number of excellent programs including ten years of experience in contract instruction with JPL and the largest collaborative learning program in the state for math/science students. The college's Biology division transfers the highest percentage of students to UCLA of any community college in the Los Angeles area

In 2003, the college opened the Cimmarusti Science Center, situated in a complex of four buildings featuring state-of-the-art science laboratories, lectures halls and classrooms, and funded by a private/public partnership that included support from the federal government, the state of California, community business partners, college alumni, community supporters and college employees. The center serves GCC students in their science studies as well as elementary and secondary teachers and students from the community via an extensive outreach program. The program provides students in the community with exposure to high quality science experiences through planetarium presentations and special hands-on exhibits. GCC also offers a comprehensive teacher training program for 4th and 5th grade teachers funded by a Congressionally-directed grant from NASA.

GCC science faculty members regularly visit local high schools to work with faculty and students on a variety of projects. In math, GCC faculty meet monthly with math teachers and counselors from three local feeder districts to facilitate dialogue, share materials and discuss successful models of instruction through the Math Collaborative program.

For motivated and talented students, the Glendale Community College Scholars Program provides an opportunity for intensive study and intellectual development not usually reached in lower division undergraduate programs. The program is offered in two tracks: liberal arts or science and prepares students for transfer to a major university with priority registration, small seminar-style classes, dedicated teachers who promote critical thinking and special academic counseling. Glendale College Scholars are given priority consideration for transfer to top four-year universities and the college's transfer alliance program with UCLA offers students joint research, scholarly and social opportunities with UCLA faculty and students. Students with a 3.0 GPA or above are invited to apply for this prestigious program.

The math and science scholarship program will build on the college's efforts to prepare the next generation of leaders in science and technology, utilizing a collaborative network of supportive services:

- **Outreach and Advertising** includes outreach efforts to local high schools through site visits by math and science faculty members and outreach staff, particularly to programs that encourage careers in mathematics, science and technology such as the Crescenta Valley High School Academy of Science and Medicine. A recruitment brochure will be distributed both on campus and at college fairs and high school counseling offices. The program will be promoted, along with the Scholars Science Academy, to high school students that visit the Cimmarusti Science Center for a planetarium presentation. Over 4,000 K-12 students, science teachers and community guests have visited the center since it opened in October 2003. The program will also be promoted on *Gateways to Glendale College*, the college's weekly television show.
- **The Screening and Selection Committee** will include the Project Director, Co-Principal Investigator, faculty from math and science disciplines and key personnel from Financial Aid, Academic Counseling and the Transfer Center.
- **Supplemental Instruction** offers collaborative learning workshops for several science and math classes. These workshops focus on critical thinking and problem solving exercises centered on the course material. They are scheduled outside of class time and led by trained student leaders. The workshops allow students to ask questions and discuss ideas in a friendly, collaborative environment and have been shown to be quite effective in raising students' grades and increasing motivation. Success rates of regular SI participants tend to be 15 to 20% higher than for non-participants, with GPAs increased by half a point.
- **Supportive Services:** Each student will be matched with a member of the science or math faculty for mentoring and support. In addition, a dedicated counselor from **Academic Counseling** will be identified to effectively assist each student in deciding upon an educational objective, determining the courses required for achieving this objective, and identifying the services needed to achieve the objective. Students complete a full Student Educational Plan (S.E.P.) with their counselor during their first year at GCC, and they review the plan periodically with their counselor as they move toward or decide to change their educational objective. Counselors, services, course schedules, and academic programs are matched to student needs.
- **Other Existing Services:** Throughout the day and evening, six days a week, student learning, retention, and success in classes across the curriculum are supported by an extensive array of student support services. **The Learning Center** offers free instructional help to all students who want to improve their learning skills, including a **Writing Center**, **Tutoring Center** and the **Computer Assisted Instruction Lab**. The **Math/Science Center** provides drop-in tutoring, computer programs and videotapes, and student tutors and/or faculty members to answer questions and give explanations about math, physics, chemistry and astronomy courses. The **Center for Students with Disabilities** provides counseling for students with verified physical, learning, communication, visual and hearing disabilities, as well as significant health impairments. In addition, qualified students may receive any of the following services based on the educational limitations imposed by their disability: registration assistance, special parking, mobility assistance and orientation, examination

proctoring, tutoring, visual aids, Braille materials or other form of alternate media.

- **Learning Community:** GCC has been guided in the development of this program by the success of a variety of cohort programs and learning communities established at the college. They have proven to be an effective way to respond to the needs of a diverse student body and move students toward college completion and transfer, particularly the college's Alliance for Minority Participation program. This program specifically targets science, engineering and math majors who are on a transfer path. In the summer bridge program, students will have an opportunity to form strong bonds with other students and faculty members who share their interests while learning effective study strategies and developing their own plans for personal, academic and career success. They will interact with these same students in their advanced math and science courses. They will also be encouraged to join the Math Club, which tutors any GCC student weekly in mathematics. The college has found that students who participate in learning communities have significantly higher retention rates, complete more units, and get significantly better grades than non-participating matched cohorts.
- **Transfer Preparation:** A key segment of student success occurs when students leave GCC and enter the workforce or transfer to their four-year institution. To ensure that students do not have to spend additional years at their four-year school because they did not complete appropriate courses in their major at GCC, GCC maintains articulation agreements with all area colleges and encourages students to use the services of the Transfer Center and the website www.assist.org. Faculty ensure that GCC offers the courses students need to complete lower division requirements within their major and maintain close relationships with their counterparts in the major four-year institutions to which students transfer.
- **Financial Aid:** Students with economic needs are served by a responsive financial aid program that ensures that they get their first financial aid check in time to buy their books before classes begin. The office also effectively manages one of the most extensive scholarship programs at any community college in California. In 2003-2004, more than 500 scholarships totaling more than \$300,000 were awarded to GCC students. With a recent rise in college tuition that has increased California community college fees by 136 percent, the college has increased its outreach efforts to inform the community that financial aid is available and that cost should not be a barrier to enrolling in college. In 2004-2005, GCC hired additional staff to provide one-on-one service and delivered over 25 high school financial aid presentations in English, Spanish and Armenian. The office will inform students selected for this program of the new SMART Grants for juniors and seniors majoring in math, science and technology, part of the recent federal push for science and math education, so that they can apply for the grant when continuing their education at a four-year institution.

S-STEM Project Management Plan

GCC faculty and staff will work together across institutional divisions to meet students' educational needs and facilitate their success. The following management plan will be followed to attain the objectives in a timely manner.

OVERALL PROJECT MANAGEMENT PLAN		
Activities	Persons Responsible	Timeframe
Advertisement and recruitment of students to science/math fields	Principal Investigators Outreach Services Marketing Office Faculty Members	Quarterly, with kick-off in Spring 2007
Maintenance of student records	Project Director	Quarterly
Reporting responsibilities	Project Director	Quarterly
Oversight of student support services	Principal Investigators	Ongoing
Selection of students and replacing students who lose eligibility	Screening and Selection Committee	Quarterly
Provision of scholarships	Financial Aid Office	Quarterly
Assurance that each student is assigned a mentor	Screening and Selection Committee	Quarterly
Provision of academic support and mentoring	Principal Investigators, assigned Academic Counselor, Faculty Mentors, Supplemental Instruction Coordinator	Ongoing
Transfer information and application assistance	Academic Counselor, Transfer Center	Quarterly
Evaluation of program outcomes	Principle Investigators	Annually

The first year of the program will be dedicated as a planning year to transition students from the current Alliance for Minority Participation program to the proposed scholarship program. This will give the Project Director and Co-Principal Investigator time to set up the support systems and to meet with the Screening and Selection Committee to design recruitment materials and coordinate outreach visits.

The Principal Investigator/Project Director will be Dr. Sid Kolpas, a faculty member in the Math Department. He holds Master's and Bachelor's degrees in Math from California State University, Northridge and an Educational Doctorate in Mathematics Curriculum and Instruction from the University of Southern California. Dr. Kolpas ran the Alliance for Minority Participation program at GCC for the past twelve years and is actively involved with the GCC Scholars Program. He was granted the college's Distinguished Faculty Award in 2004. Dr. Kolpas will provide leadership and management of the project, monitor project progress, and complete quarterly and annual reports.

The Co-Principal Investigator will be Dr. Jean Lecuyer, a faculty member in the Physics Department. He holds a Bachelor's of Science degree from the University of Montreal and a Ph.D. in Astrophysics from the University of Chicago. Dr. Lecuyer created and directed the college's Math/Science Center, a drop-in tutoring center for students in Math and Physical Sciences. He also helped secure funding for the Alliance for Minority Participation program. He currently serves as the director of the Cimmarusti Science Center and coordinates its Education Outreach Project. He will assist the Project Director with recruitment of students, oversight of student support services and evaluation of program outcomes.

An accomplished team of faculty from a range of departments will serve as faculty mentors for MASTER program participants.

SCHOLARSHIP PROGRAM FACULTY MENTORS		
Name	Degree	Department/Division
Kathy Flynn	Ph.D., University of Southern California	Credit ESL
Kim Foong Chong	M.S., California State University, Northridge	Mathematics
John Gerz	M.S., California State University, Northridge	Physics
Lina Gupta	Ph.D., Claremont Graduate School	Social Science
David Hurst	M.S., University of Illinois	Chemistry/Astronomy
Stacy Jazan	Ph.D., University of California, Los Angeles	Spanish
Sid Kolpas	Ed.D., University of Southern California	Mathematics
Jean Lecuyer	Ph.D., University of Chicago	Physics
John Leland	Ph.D., University of California, Los Angeles	Geology
Mark Maier	Ph.D., New School for Social Research	Economics
Gary Massion	M.A.T., University of California, Los Angeles	Mathematics
Juliet Salazar	M.A., University of California, Los Angeles	Mathematics
Peter Stathis	M.A., Claremont Graduate School	Mathematics

Student Selection Process and Criteria

The Project Director and Screening and Selection Committee will use a variety of outreach strategies to recruit math and science students to participate in the scholarship program. Project staff will announce the availability of scholarships through departmental newsletters, the college’s newspaper *El Vaquero*, local media submissions, brochures distributed through the college’s Marketing Office and presentations to high school groups, student orientation groups and various clubs and classes. All inquiries resulting from these activities will be referred to the Screening and Selection Committee. Project team members will make special efforts to communicate with and recruit female and minority students. They will make presentations and disseminate information to targeted high schools and organizations to encourage participation.

In selecting participants for the scholarship program, the committee will use the following criteria for selection, based on NSF guidelines as well as local needs.

1. Participants must be citizens of the United States, nationals of the United States, aliens admitted as refugees, or aliens lawfully admitted to the United States for permanent residence.
2. Participants must be enrolled each semester full time (12 units or more) in Astronomy, Biology, Chemistry, Computer Science, Engineering, Geology, Oceanography, Mathematics or Physics. Nine of the 12 units must be courses that apply toward degree attainment or transfer requirements. In addition, students who enroll full time (four units) during the summer for the bridge program will be eligible for additional scholarship funds.
3. Participants must demonstrate academic potential or ability. Academic ability will be determined through multiple indicators: (a) a minimum grade point average of 2.5, (b) letter of recommendation from teacher/faculty member, (c) personal essay, (d) placement into

Intermediate Algebra or Pre-Calculus on the college placement test and (e) personal interviews (as necessary.)

4. Participants must demonstrate financial need, defined by the U.S. Department of Education rules for Financial Aid. The Financial Aid Office will determine the applicant's financial need by their responses on the Free Application for Federal Financial Aid (FAFSA), and a calculation of the difference between the institutional cost of attendance, the estimated family contribution and other financial awards. Counselors and financial aid staff will offer support and guidance to students during the application process.

The Financial Aid Office will review all applications to create a pool of eligible students. From this pool, the Screening and Selection Committee will select, notify and pair each recipient with a faculty member to serve as their mentor. Students selected for the program will sign a contract that states they will work to maintain their eligibility in the project. Achievement and ongoing eligibility each semester will be tracked by the Project Director using a database set up for the scholarship project. At the end of each semester, the Project Director will generate a report detailing student progress. If a student's GPA falls below a 2.5, they will be allowed to continue in the program if they increase their GPA to a 2.5 by the end of the next semester and show evidence of seeking academic support from the Math/Science Center or Learning Center.

The Project Director and the Director of Financial Aid will monitor MASTER participants each semester to document ongoing eligibility and to ensure an adequate pool of applicants to replace students who choose not to continue or who no longer meet the eligibility criteria.

S-STEM Student Support Services and Programs

Glendale Community College is proposing to use 15% of scholarship funds (8% student support services and 7% administrative services) to offer scholarship students a full collaborative network of services and programs.

The first component of the scholarship program will be a summer bridge program that provides an intensive review of pre-calculus mathematics, focusing on problem-solving, explorations, and real world applications incorporating a graphing calculator. The class will be offered in conjunction with a Student Development course to provide students with a strong orientation to the college. In addition to classroom activities, students will meet peers with similar interests; explore a variety of careers in science, engineering, and mathematics via field trips and other activities; improve their problem solving abilities; and learn the skills necessary to be successful in college. Though this program will be optional to scholarship students, participation will be highly encouraged. Students will receive scholarship funds for enrolling in the course, as well as a state-of-the-art graphing calculator and priority registration for the following semester. The college is requesting \$6000 annually to run this bridge program.

The college is also requesting \$3825 annually for the supplemental instruction program, offering collaborative learning workshops targeting the classes that students find to be most difficult. In Spring 2006, the college offered 42 supplemental instruction programs in science and math. This funding will ensure that these programs can continue.

Each scholarship student will be matched with a faculty mentor who they will meet with monthly for mentoring, providing information about transfer programs and making referrals to support services available at the college. In addition, students can see their assigned counselor for academic advising. One counselor will be identified to carry the entire scholarship student caseload to be more responsive to their specialized needs. Students who are identified as experiencing academic or personal problems will be referred to the appropriate support service. Academic support services include assessment, tutoring, study skills workshops, career interest inventory, disabled student services, tutorial services and transfer planning. Personal/social support services include counseling and personal support, financial aid counseling and mentoring.

In order to encourage students to pursue bachelor's degrees, GCC is proposing to use \$3095 of grant funds each year for application fees for four year universities and colleges. This will eliminate one final financial barrier that may prohibit students' enrollment in four-year institutions. In addition, the Transfer Center will offer quarterly workshops for students who are considering pursuing four-year degrees in science, engineering or mathematics.

Quality Educational Programs

Students majoring in science, engineering or math at GCC benefit from a strong curriculum supported by an extensive range of support services and state-of-the-art equipment and facilities. The programs make extensive use of collaborative learning and there are several rooms in the new Cimmarusti Science Center Complex dedicated to that purpose. The complex also has its own drop-in tutoring/computer learning area: the Math/Science Center.

In addition to the regular science learning, most classes dedicate a lot of time training students in core competencies that are important for SMET careers, such as critical thinking, scientific reasoning, problem solving, written and oral presentations and basic research. Science labs supporting these classes are state-of-the-art and computer-equipped, and faculty and students make extensive use of these computers.

The college has a field station in the Baja California peninsula of Mexico that is used as a study station for biology, geology and oceanography classes, the only community college field station in the Baja peninsula. The area surrounding the field station is host to a rich, intricate ecosystem that supports a large variety of marine species – birds, fish, dolphins, whales, invertebrates – alongside a highly specialized desert environment that runs down to the shore. Each year, between four and seven sessions are offered at the facility, running one, two or three weeks. Courses are taught by GCC professors and teaching methods emphasize field observations and group effort.

The college's Biology Division has an exceptional transfer program with the University of California system, with a high percentage of students who successfully complete the GCC program accepted for admission, many of them to the more selective campuses including UCLA, UC Berkeley and UC San Diego. Classes are taught from the bottom up, beginning with molecules and atoms and required to be taken sequentially to provide transfer momentum. Courses are held in six state-of-the-art labs and at the Baja field station. Of students who transfer

to a University of California program, ninety-two percent graduate with a bachelor's degree in biology.

The Math Division at GCC has computer-equipped classrooms and a strong link with local high schools through its Math Collaborative project which seeks to better prepare high school students for college level math. Courses are offered in a variety of formats, including online, hybrid and telecourses. The division is composed of 19 full-time faculty and from 45-50 adjunct faculty. Full time faculty members are very active in looking for ways to improve delivery and student success in mathematics. Every year the full time faculty members go on a three day retreat to study questions related to program improvement. In addition, to target efforts as efficiently as possible, all full time faculty serve on curriculum groups.

In the Physical Sciences Division, the GCC chemistry program is regionally recognized as a program of excellence. It has one of the largest community college organic chemistry programs in the region, enrolling 75 students per semester. Students in these programs have access to all of the latest equipment including a multinuclear NMR and Spartan software used to model the energies of bonds and orbitals in organic molecules. Students that transfer to UCLA after completing this course receive credit for what is usually a junior level course. In general chemistry, all of the laboratories have been computerized, enabling students to manipulate data and acquire data via interfaces and access the internet for special projects. Because of the strength of the program, a high number of chemistry students are selected to participate in summer research programs at Occidental College, Loyola-Marymount University and California State University, Los Angeles.

The physics program features an internship program that sends students to work for a semester at the nearby Jet Propulsion Laboratory (JPL) and in other labs or engineering firms. The program at JPL is particularly successful: although open to all colleges and universities in the area, the vast majority of interns come from GCC. The department also has solid links with local engineering schools such as California State Polytechnic University, Pomona; California State University, Northridge; and UCLA.

The college's geology and oceanography programs have grown perhaps the fastest of all GCC programs in the past ten years and now account for about 40% of enrollments in the Physical Sciences Division. Students participate in a number of field trips, including day-long cruises on the ocean for the oceanography classes, camping trips in the southwest for geology and visits to the Baja field station for both.

The astronomy program at GCC offers courses on the solar system, stars and galaxies, observational astronomy and modern astronomy. Classes are quickly filled in both daytime and evening offerings. A digital planetarium, which opened in 2003 as part of the new Science Center, is now a vital part of the astronomy program. The planetarium features a custom built 30 foot diameter dome and 48 reclining seats. Most astronomy classes meet in the planetarium and it has proved to be an extremely effective teaching tool. The planetarium staff (manager, astronomy teacher, technician) meet almost daily to discuss the operation of the planetarium. This includes hardware, software, upgrades, new ideas for planetarium demonstrations, discoveries in space exploration and astronomical research.

The computer science program, taught in the combined Department of Computer Science/Information Systems, includes all courses required in the lower division portion of a computer science major at California State University, Northridge; California State University, Los Angeles and California State Polytechnic University, Pomona. Departmental faculty meet regularly with faculty from these universities to maintain currency of course offerings and facilitate transfer of students. The department also maintains contact with the Jet Propulsion Laboratory through faculty who also work or have worked at JPL, and offers a course designed specifically to prepare students for work at that facility.

A comprehensive college transfer program qualifies students for junior standing in most four-year institutions. The college has articulation agreements with all UC and CSU institutions as well as most other four-year schools in the Los Angeles basin. In 2004-2005, Glendale Community College ranked fourth in the number of transfer students who transferred to the prestigious University of Southern California and was in the top 15% of community colleges transferring students to the University of California system.

Assessment and Evaluation

The Project Director will use the following measures to evaluate the project’s success:

EVALUATION PLAN		
Project Objective	Data Elements	Analysis Framework
1: To provide scholarships for 70 academically talented, financially disadvantaged math and science students, including those from underrepresented groups.	<ul style="list-style-type: none"> ▪ Number of applicants each semester who meet the guidelines and receive an NSF scholarship. ▪ The percentage of students who are accepted compared to the total that have completed the application and interview process. ▪ The percentage of scholarship recipients who are from under-represented groups. 	To determine effectiveness of the overall recruitment process, identify weaknesses and implement remedies.
2: To provide support to science and math scholarship recipients that will enable a minimum of 70% to maintain or exceed a 2.5 GPA and persist until associate degree/transfer achievement.	<ul style="list-style-type: none"> ▪ Number of scholarship recipients making satisfactory progress during the academic year. ▪ The percentage of students whose cumulative GPA remains at or above 2.5 at the end of each semester of enrollment. ▪ Number of scholarship recipients obtaining associate degrees or completing transfer curriculum. 	To determine the effectiveness of support services designed to improve academic performance.
3: To provide transfer assistance to 100% of students who complete program requirements and desire enrollment in a four-year institution.	<ul style="list-style-type: none"> ▪ Percentage of scholarship recipients who desire a baccalaureate education (and declare such on their Student Educational Plan) compared to those who actually enroll in a four-year institution. 	To measure the project’s ability to support students desiring to continue their education at a four-year institution.

Within 30 days of the beginning of each semester, the Principle Investigator will provide a report via Fastlane to NSF with the following data on each scholarship recipient.

SCHOLARSHIP RECIPIENT DATA TO BE REPORTED TO NSF	
<ul style="list-style-type: none"> ▪ Name ▪ Permanent Address ▪ School Address (if applicable) ▪ Major ▪ Career Goals ▪ Race/Ethnicity/Disability (optional) 	<ul style="list-style-type: none"> ▪ Gender ▪ Date of Birth ▪ Grade Point Average ▪ Participation in an internship (in a S-STEM related area) ▪ Student Employment (part-time/full-time)

Scholarship participants will be tracked each semester to determine their continued enrollment in their designated program and their financial eligibility. Over the course of the grant, mentors will monitor students to document their ongoing process towards degree completion and their transfer to a four-year institution in a STEM discipline. During the mentoring process, faculty members will collect and record qualitative data from students concerning their impressions of and satisfaction with the services of the project.

The college will annually publish a report showing the results of the NSF scholarship program and post it on the GCC web site. The site will be used as a vehicle to recruit students and supporters for the project and include contact information for the Program Director and Counselor. GCC will also make use of electronic mail to create a campus-wide network connecting science and math faculty, the Screening and Selection committee and other applicable personnel. This networking will facilitate the exchange of ideas among all participants for timely communication and ongoing success of this collaborative venture.

REFERENCES CITED

California Employment Development Department, Los Angeles County Profile: Projections of Employment by Industry 2001-2008. (<http://www.labormarketinfo.edd.ca.gov>)

Glendale Community College, Research and Planning Department, Campus Profile. (<http://research.glendale.edu/html/campusprofile>)

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Granada Hills, CA 91344
(818) 363-5966

Professional Preparation

University of Southern California	Mathematics Curriculum & Instruction, Minor in Educational Psychology	Ed.D. 1979
Cal State University, Northridge	Math	M.S. 1971
Cal State University, Northridge	Math (Magna Cum Laude)	B.A. 1969

Appointments

2004-Present	President, Academic Senate Glendale Community College, Glendale, California
2002-2004	Vice President, Academic Senate Glendale Community College, Glendale, California Responsible for Curriculum & Instruction and Minimum Qualifications and Equivalencies
1991-Present	Professor of Mathematics Glendale Community College, Glendale, California
1990	Summer Instructor for CBEST Mathematics Preparation Moorpark College, Moorpark, California
1989	SAT Mathematics Preparation Instructor Korean College Preparatory School, Hollywood, California
1986-1990	Adjunct Instructor (Part-Time) College of the Canyons, Valencia, California Courses taught include Elementary Algebra, Intermediate Algebra, College Algebra, Calculus I and Calculus II.
1985-1989	Mathematics and Computer Science Mentor Burbank Unified School District, Burbank, California
1980-1991	Math Teacher John Burroughs High School, Burbank Unified School District
1979-1985	Instructor/Software Specialist/Author Tandy Corporation, Area Training and Support, Fort Worth, TX
1970-1980	Math Faculty Luther Burbank Junior High School, Burbank, California
1976-1977	Computer Programming Instructor Gifted Children's Association, San Fernando Valley, CA

Select Publications

“A Student Perspective on Tangent Lines,” *AMATYC Review*, Vol. 20 Number 2, Spring 1999.

“A Classroom Note on Monte Carlo Integration,” *Mathematics and Computer Education*, Volume 32 Number 1, Winter 1998.

“A Classroom Note on Descartes’ Derivative,” *Mathematics and Computer Education*, Volume 29 Number 1, Winter 1995.

“An Unexpected Proof of An Unexpected Occurrence of e,” *AMATYC Review*, Volume 18 Number 2, Spring 1997. Co-written with Steve Marsden.

Editor of *Agnesi to Zeno: Over 100 Vignettes from the History of Math* by Sanderson Smith. Key Curriculum Press, 1996.

Synergistic Activities

2004	Glendale Community College Distinguished Faculty Award As recipient, presented a lecture to the GCC campus on the topic "Everything you always wanted to know about two."
1998-Present	Chair of Science Lecture Series, Glendale Community College Responsible for coordinating four lectures per semester as part of a lecture series funded by Verdugo Banking Company. All of the lectures are free and open to the public.
1993-Present	Director, Alliance for Minority Participation Program Glendale Community College, Glendale, California
1991-Present	Member, Calculus Curriculum Team and Developmental Math Team
1987	Recipient of NASA/NCTM Honors Teachers Award Worked at NASA and developed curriculum.
1984-1988	Participated in KNBC teacher educational TV project on the teaching of Geometry with videos.
1984-Present	California Mathematics Council, Southern Section Workshops Chair, Evaluations Chairman, Scholarship Committee Chair

Collaborators & Other Affiliations

Steve Marsden, Professor of Mathematics, Glendale Community College, Co-author
Gary Massion, Professor of Mathematics, Glendale Community College, Co-author
National Council of Teachers of Mathematics
American Association of Two Year Colleges
American Mathematics Association
California Math Council
Phi Delta Kappa

JEAN LECUYER, Ph.D.

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Los Angeles, CA 90046
(323) 851-2236

Professional Preparation

University of California Berkeley	Post-doctorate research, Astrophysics	1965-69
University of Chicago	Ph.D., Astrophysics	1965
University of Montreal	Bachelor of Science	1960
University of Montreal	Bachelor of Arts	1957

Appointments

1978 – Present	Physics Department, Glendale Community College, Glendale, CA Full-time instructor, Physics. Created and directed the college's Math/Science Center, a drop-in tutoring center for students in Math and Physical Sciences. Organized monthly series of Science lectures for students and faculty. Has been applying Treisman-style collaborative learning methods in introductory Physics classes with great success; participated with Dr. Treisman in statewide and national conferences on the subject. A January 1994 presentation before California State University representatives resulted in a \$20,000 annual grant to the college and a collaboration between California State University Northridge and Glendale College in the National Science Foundation "Alliance for Minority Participation" program.
1977 – 1978	Physics Department, Long Beach City College, Long Beach, CA Full-time instructor, Physics.
1970 – 1975	Physics Department, Maisonneuve College, Montreal, Que. (1970 - 75) Full-time instructor, Physics and Astronomy. Initiated and developed the Astronomy program, with construction of observational facilities.

Synergistic Activities

1998 – Present	Director, Science Education Center Chaired a committee of faculty members who developed a \$12M Center funded from federal and state grants and private contributions. The mission of the Center is to provide state-of-the-art science and math education at the college and assist the surrounding K-12 schools in their science and math education. The Center opened its doors in the fall of 2003 and serves elementary and secondary teachers and students from the community via an extensive outreach program.
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- 1997 – 1998
 Chairperson, Accreditation Task Force
 Directed and coordinated the work of approximately one hundred members of the college faculty and staff in the preparation of the self-study necessary for the 6-year renewal of the college's accreditation. Edited the final report: its recommendations were given a strong endorsement by the Accrediting Commission, and the college received full accreditation without conditions.
- 1993 – 2003
 Planning Coordinator
 In charge of organizing the planning process and supervising the revision and upgrading of the college's educational master plan. The college has a 6-year planning cycle, with its last plans approved in 1998 and in 2004.
- 1989 - 1994
 Title III Coordinator
 Organized the entire Title III grant project from planning to full operation, and coordinated its activities. Also directed the Instructional Assistance component of the project, a section which included development programs in collaborative learning, videodisc technology, and classroom research. The \$2.5M project got excellent reviews from nationally known educators such as Dr. Uri Treisman, and Dr. Richard Alfred.
- 1988 – 1989
 Chairperson, Title III Steering Committee
 Directed the committee that organized the first comprehensive planning effort in the history of the college; the resulting Master Plan provided the backbone of the college's very successful Title III grant proposal. Wrote the grant proposal, which finished 6th out of 500 in a national competition.
- 1986 – 1987
 Chairperson, Accreditation Task Force
 As described above, directed the task force that prepared the college's accreditation self-study and edited the final report. The college received full accreditation without conditions.
- 1984 – 1987
 President, Glendale Community College Academic Senate
 Strengthened the academic leadership role of the Senate and provided a major contribution in the development of institutional research and planning at the college. Established close professional relationships between the Senate and the Board of Trustees and coordinated an extensive faculty involvement in the selection of a new college president. Established the annual Distinguished Faculty Award, and later the Parker Award, to reward outstanding faculty members at the college. Was instrumental in persuading the administration to start institutional research at the college and hire a researcher on a permanent basis.

SUMMARY PROPOSAL BUDGET YEAR 1

ORGANIZATION Glendale Community College				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Sidney Kolpas				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
				CAL	ACAD	SUMR	
1. Sidney Kolpas - Project Director/PI				0.00	0.00	0.00	\$ 0 \$
2. Jean Lecuyer - Co-Principal Investigator				0.00	0.00	0.00	0
3.							
4.							
5.							
6. (0) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	0
7. (2) TOTAL SENIOR PERSONNEL (1 - 6)				0.00	0.00	0.00	0
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. (0) POST DOCTORAL ASSOCIATES				0.00	0.00	0.00	0
2. (0) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	0.00	0
3. (0) GRADUATE STUDENTS							0
4. (0) UNDERGRADUATE STUDENTS							0
5. (0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							0
6. (0) OTHER							0
TOTAL SALARIES AND WAGES (A + B)							0
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							0
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							0
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							0
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)							0
2. FOREIGN							0
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ _____ 0							
2. TRAVEL _____ 0							
3. SUBSISTENCE _____ 0							
4. OTHER _____ 0							
TOTAL NUMBER OF PARTICIPANTS (0) TOTAL PARTICIPANT COSTS							0
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							4,000
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							0
3. CONSULTANT SERVICES							0
4. COMPUTER SERVICES							0
5. SUBAWARDS							0
6. OTHER							0
TOTAL OTHER DIRECT COSTS							4,000
H. TOTAL DIRECT COSTS (A THROUGH G)							4,000
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) (Rate: , Base:)							
TOTAL INDIRECT COSTS (F&A)							0
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							4,000
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS SEE GPG II.C.6.j.)							0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							\$ 4,000 \$
M. COST SHARING PROPOSED LEVEL \$ 0 AGREED LEVEL IF DIFFERENT \$							
PI/PD NAME Sidney Kolpas				FOR NSF USE ONLY			
ORG. REP. NAME*				INDIRECT COST RATE VERIFICATION			
				Date Checked	Date Of Rate Sheet	Initials - ORG	

SUMMARY PROPOSAL BUDGET YEAR 2

ORGANIZATION Glendale Community College				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Sidney Kolpas				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
				CAL	ACAD	SUMR	
1.	Sidney Kolpas - PI/Summer Bridge Coordinator			0.00	0.00	1.50	\$ 2,000
2.	Jean Lecuyer - Co-Principal Investigator			0.00	0.00	0.00	0
3.							
4.							
5.							
6.	(0) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)			0.00	0.00	0.00	0
7.	(2) TOTAL SENIOR PERSONNEL (1 - 6)			0.00	0.00	1.50	2,000
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	(0) POST DOCTORAL ASSOCIATES			0.00	0.00	0.00	0
2.	(2) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)			0.00	0.00	1.50	4,000
3.	(0) GRADUATE STUDENTS						0
4.	(17) UNDERGRADUATE STUDENTS						3,825
5.	(0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)						0
6.	(0) OTHER						0
TOTAL SALARIES AND WAGES (A + B)							9,825
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							0
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							9,825
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							0
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)							0
2. FOREIGN							0
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS	\$	106,250				
2.	TRAVEL		0				
3.	SUBSISTENCE		0				
4.	OTHER		3,095				
TOTAL NUMBER OF PARTICIPANTS (70)				TOTAL PARTICIPANT COSTS			109,345
G. OTHER DIRECT COSTS							
1.	MATERIALS AND SUPPLIES						4,830
2.	PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION						0
3.	CONSULTANT SERVICES						0
4.	COMPUTER SERVICES						0
5.	SUBAWARDS						0
6.	OTHER						0
TOTAL OTHER DIRECT COSTS							4,830
H. TOTAL DIRECT COSTS (A THROUGH G)							124,000
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) (Rate: , Base:)							
TOTAL INDIRECT COSTS (F&A)							0
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							124,000
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS SEE GPG II.C.6.j.)							0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							\$ 124,000
M. COST SHARING PROPOSED LEVEL \$ 0				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME Sidney Kolpas				FOR NSF USE ONLY			
ORG. REP. NAME*				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet			Initials - ORG	

SUMMARY PROPOSAL BUDGET YEAR 3

ORGANIZATION Glendale Community College				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Sidney Kolpas				AWARD NO.	Proposed	Granted	
				A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)			
				CAL	ACAD	SUMR	
1.	Sidney Kolpas - PI/Summer Bridge Coordinator			0.00	0.00	1.50	\$ 2,000
2.	Jean Lecuyer - Co-Principal Investigator			0.00	0.00	0.00	0
3.							
4.							
5.							
6.	(0) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)			0.00	0.00	0.00	0
7.	(2) TOTAL SENIOR PERSONNEL (1 - 6)			0.00	0.00	1.50	2,000
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	(0) POST DOCTORAL ASSOCIATES			0.00	0.00	0.00	0
2.	(2) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)			0.00	0.00	1.50	4,000
3.	(0) GRADUATE STUDENTS						0
4.	(17) UNDERGRADUATE STUDENTS						3,825
5.	(0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)						0
6.	(0) OTHER						0
TOTAL SALARIES AND WAGES (A + B)							9,825
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							0
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							9,825
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							0
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)							0
2. FOREIGN							0
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS	\$	106,250				
2.	TRAVEL		0				
3.	SUBSISTENCE		0				
4.	OTHER		3,095				
TOTAL NUMBER OF PARTICIPANTS (70)				TOTAL PARTICIPANT COSTS			109,345
G. OTHER DIRECT COSTS							
1.	MATERIALS AND SUPPLIES						4,830
2.	PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION						0
3.	CONSULTANT SERVICES						0
4.	COMPUTER SERVICES						0
5.	SUBAWARDS						0
6.	OTHER						0
TOTAL OTHER DIRECT COSTS							4,830
H. TOTAL DIRECT COSTS (A THROUGH G)							124,000
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) (Rate: , Base:)							
TOTAL INDIRECT COSTS (F&A)							0
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							124,000
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS SEE GPG II.C.6.j.)							0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							\$ 124,000
M. COST SHARING PROPOSED LEVEL \$ 0				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME Sidney Kolpas				FOR NSF USE ONLY			
ORG. REP. NAME*				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet	Initials - ORG			

SUMMARY PROPOSAL BUDGET YEAR 4

ORGANIZATION Glendale Community College				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Sidney Kolpas				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1. Sidney Kolpas - PI/Summer Bridge Coordinator				0.00	0.00	1.50	\$ 2,000
2. Jean Lecuyer - Co-Principal Investigator				0.00	0.00	0.00	0
3.							
4.							
5.							
6. (0) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	0
7. (2) TOTAL SENIOR PERSONNEL (1 - 6)				0.00	0.00	1.50	2,000
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. (0) POST DOCTORAL ASSOCIATES				0.00	0.00	0.00	0
2. (2) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	1.50	4,000
3. (0) GRADUATE STUDENTS							0
4. (17) UNDERGRADUATE STUDENTS							3,825
5. (0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							0
6. (0) OTHER							0
TOTAL SALARIES AND WAGES (A + B)							9,825
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							0
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							9,825
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							0
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)							0
2. FOREIGN							0
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ <u>106,250</u>							
2. TRAVEL <u>0</u>							
3. SUBSISTENCE <u>0</u>							
4. OTHER <u>3,095</u>							
TOTAL NUMBER OF PARTICIPANTS (70)				TOTAL PARTICIPANT COSTS			109,345
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							4,830
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							0
3. CONSULTANT SERVICES							0
4. COMPUTER SERVICES							0
5. SUBAWARDS							0
6. OTHER							0
TOTAL OTHER DIRECT COSTS							4,830
H. TOTAL DIRECT COSTS (A THROUGH G)							124,000
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) (Rate: , Base:)							
TOTAL INDIRECT COSTS (F&A)							0
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							124,000
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS SEE GPG II.C.6.j.)							0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							\$ 124,000
M. COST SHARING PROPOSED LEVEL \$ 0				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME Sidney Kolpas				FOR NSF USE ONLY			
ORG. REP. NAME*				INDIRECT COST RATE VERIFICATION			
				Date Checked	Date Of Rate Sheet	Initials - ORG	

SUMMARY PROPOSAL BUDGET YEAR 5

ORGANIZATION Glendale Community College				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Sidney Kolpas				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
		CAL	ACAD	SUMR			
1.	Sidney Kolpas - PI/Summer Bridge Coordinator	0.00	0.00	1.50	\$ 2,000	\$	
2.	Jean Lecuyer - Co-Principal Investigator	0.00	0.00	0.00	0		
3.							
4.							
5.							
6.	(0) OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)	0.00	0.00	0.00	0		
7.	(2) TOTAL SENIOR PERSONNEL (1 - 6)	0.00	0.00	1.50	2,000		
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1.	(0) POST DOCTORAL ASSOCIATES	0.00	0.00	0.00	0		
2.	(2) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)	0.00	0.00	1.50	4,000		
3.	(0) GRADUATE STUDENTS				0		
4.	(17) UNDERGRADUATE STUDENTS				3,825		
5.	(0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)				0		
6.	(0) OTHER				0		
TOTAL SALARIES AND WAGES (A + B)					9,825		
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					0		
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)					9,825		
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT					0		
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)					0		
2. FOREIGN					0		
F. PARTICIPANT SUPPORT COSTS							
1.	STIPENDS \$ <u>106,250</u>						
2.	TRAVEL <u>0</u>						
3.	SUBSISTENCE <u>0</u>						
4.	OTHER <u>3,095</u>						
TOTAL NUMBER OF PARTICIPANTS (70)				TOTAL PARTICIPANT COSTS		109,345	
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES					4,830		
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION					0		
3. CONSULTANT SERVICES					0		
4. COMPUTER SERVICES					0		
5. SUBAWARDS					0		
6. OTHER					0		
TOTAL OTHER DIRECT COSTS					4,830		
H. TOTAL DIRECT COSTS (A THROUGH G)					124,000		
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE) (Rate: , Base:)							
TOTAL INDIRECT COSTS (F&A)					0		
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)					124,000		
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS SEE GPG II.C.6.j.)					0		
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)					\$ 124,000	\$	
M. COST SHARING PROPOSED LEVEL \$ 0				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME Sidney Kolpas				FOR NSF USE ONLY			
ORG. REP. NAME*				INDIRECT COST RATE VERIFICATION			
		Date Checked	Date Of Rate Sheet	Initials - ORG			

SUMMARY PROPOSAL BUDGET Cumulative

ORGANIZATION Glendale Community College				FOR NSF USE ONLY			
				PROPOSAL NO.	DURATION (months)		
PRINCIPAL INVESTIGATOR / PROJECT DIRECTOR Sidney Kolpas				AWARD NO.	Proposed	Granted	
A. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)				NSF Funded Person-months		Funds Requested By proposer	Funds granted by NSF (if different)
				CAL	ACAD	SUMR	
1. Sidney Kolpas - Project Director/PI				0.00	0.00	6.00	\$ 8,000
2. Jean Lecuyer - Co-Principal Investigator				0.00	0.00	0.00	0
3.							
4.							
5.							
6. () OTHERS (LIST INDIVIDUALLY ON BUDGET JUSTIFICATION PAGE)				0.00	0.00	0.00	0
7. (2) TOTAL SENIOR PERSONNEL (1 - 6)				0.00	0.00	6.00	8,000
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)							
1. (0) POST DOCTORAL ASSOCIATES				0.00	0.00	0.00	0
2. (8) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)				0.00	0.00	6.00	16,000
3. (0) GRADUATE STUDENTS							0
4. (68) UNDERGRADUATE STUDENTS							15,300
5. (0) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)							0
6. (0) OTHER							0
TOTAL SALARIES AND WAGES (A + B)							39,300
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)							0
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)							39,300
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING \$5,000.)							
TOTAL EQUIPMENT							0
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)							0
2. FOREIGN							0
F. PARTICIPANT SUPPORT COSTS							
1. STIPENDS \$ 425,000							
2. TRAVEL 0							
3. SUBSISTENCE 0							
4. OTHER 12,380							
TOTAL NUMBER OF PARTICIPANTS (280)							
TOTAL PARTICIPANT COSTS							437,380
G. OTHER DIRECT COSTS							
1. MATERIALS AND SUPPLIES							23,320
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION							0
3. CONSULTANT SERVICES							0
4. COMPUTER SERVICES							0
5. SUBAWARDS							0
6. OTHER							0
TOTAL OTHER DIRECT COSTS							23,320
H. TOTAL DIRECT COSTS (A THROUGH G)							500,000
I. INDIRECT COSTS (F&A)(SPECIFY RATE AND BASE)							
TOTAL INDIRECT COSTS (F&A)							0
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)							500,000
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS SEE GPG II.C.6.j.)							0
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)							\$ 500,000
M. COST SHARING PROPOSED LEVEL \$ 0				AGREED LEVEL IF DIFFERENT \$			
PI/PD NAME Sidney Kolpas				FOR NSF USE ONLY			
ORG. REP. NAME*				INDIRECT COST RATE VERIFICATION			
		Date Checked		Date Of Rate Sheet		Initials - ORG	

C *ELECTRONIC SIGNATURES REQUIRED FOR REVISED BUDGET

Glendale Community College
Math & Science Transfer, Excellence and Retention Scholarship Program
Budget Justification

The following budget narrative breaks down the budget for year one (2006-2007) and years two through five (2008-2011) which will be distributed equally.

Year One

A. Senior Personnel – None requested.

B. Other Personnel – None requested.

C. Fringe Benefits – None requested.

D. Equipment – None requested.

E. Travel – None requested.

F. Participant Support Costs – None requested.

G. Other Direct Costs - \$4000

The first year of the grant will be designated as a planning year, with the screening and selection committee meeting regularly to coordinate the student support services and establish full program guidelines. The committee will also help develop a transition process for current Alliance for Minority Participation program participants who might be eligible for the new scholarship program. The college will spend \$2500 to create recruitment materials to promote the scholarship program to current and prospective students, including a full-color brochure and a website. An additional \$1500 will be spent on supplies, including printing and duplication expenses.

H. Total Direct Costs/ Amount of Request – \$4000

Years Two – Five

A. Senior Personnel - \$2000 (annual)

Five percent of the grant budget will be used for a program coordinator and faculty to run the summer bridge program. The principal investigator, Dr. Sid Kolpas will serve as the summer bridge coordinator and will receive a \$2000 stipend to run the program. Dr. Kolpas has coordinated the Alliance for Minority Participation summer bridge program for the past twelve years. During the planning year, he will oversee the transition of the summer bridge program from a four-week session to a full five-week credit course that will be offered in conjunction with a Student Development course over the summer to provide math and science students with a strong transition to the college environment. In addition to coordinating classroom activities for

the bridge program, Dr. Kolpas will create opportunities for summer bridge students to explore a variety of careers in science, engineering, and mathematics via field trips and other activities.

B. Other Personnel - \$7825 (annual)

The remaining funds dedicated to the summer bridge program (\$4000) will be spent on two faculty members to teach the summer bridge program coursework each year. Selected from current college science and math faculty, the two instructors will be responsible for preparing a curriculum that provides an intensive review of pre-calculus mathematics focused on problem-solving, explorations, and real world applications incorporating a graphing calculator. The class will be offered in conjunction with a Student Development course and the two faculty members will work closely with the instructor of that course to make sure students have adequate opportunity to improve their problem solving abilities and gain skills necessary to be successful in college.

The college is also requesting \$3825 for the supplemental instruction program, offering collaborative learning workshops targeting the classes that students find to be most difficult. These funds will allow the college to offer 17 supplemental instruction courses in math and science at the levels most needed by scholarship program participants and will pay for the salaries of 17 undergraduate students to serve as supplemental instruction student leaders. These student leaders will be funded at a rate of \$7.50/hour, with each course requiring 30 hours of work.

C. Fringe Benefits – None requested.

D. Equipment – None requested.

E. Travel – None requested.

F. Participant Support Costs - \$109,345 (annual)

The college will use \$106,250 to award an estimated 70 scholarships during each 12-month period. The actual number of scholarships may vary depending on the amount of financial need students have after other grant and scholarship opportunities are exhausted.

In addition, \$3095 of grant funds will be spent annually on transfer application fees for program participants who wish to transfer to a four-year university after leaving GCC. The college's Transfer Center will administer this fund and actively promote it to scholarship students via classroom presentations and mailings to program participants and faculty mentors.

G. Other Direct Costs - \$4830 (annual)

An additional 2% of administrative expenses (for a total of 7%) will be spent on materials and supplies, including printing and duplicating expenses and outreach materials to promote the program at local high schools. The college will spend \$1750 on materials and supplies each year.

Student support expenses in the amount of \$3080 will be spent on the purchase of 28 TI graphing calculators to be distributed to students who participate in the Summer Bridge Program. The calculators are utilized in the summer bridge program's intensive review of pre-calculus mathematics and in many of the college's advanced level math courses.

H. Total Direct Costs/Amount of Request - \$124,000 (annual)

Current and Pending Support

(See GPG Section II.C.2.h for guidance on information to include on this form.)

The following information should be provided for each investigator and other senior personnel. Failure to provide this information may delay consideration of this proposal.	
Investigator: Sidney Kolpas	Other agencies (including NSF) to which this proposal has been/will be submitted.
Support: <input type="checkbox"/> Current <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future <input type="checkbox"/> *Transfer of Support Project/Proposal Title: Glendale Community College Math & Science Transfer, Excellence and Retention (MASTER) Scholarship Program	
Source of Support: National Science Foundation Total Award Amount: \$ 500,000 Total Award Period Covered: 07/01/06 - 06/30/11 Location of Project: Glendale, CA Person-Months Per Year Committed to the Project. Cal: 11.00 Acad: 0.00 Sumr: 0.00	
Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future <input type="checkbox"/> *Transfer of Support Project/Proposal Title:	
Source of Support: Total Award Amount: \$ Total Award Period Covered: Location of Project: Person-Months Per Year Committed to the Project. Cal: Acad: Sumr:	
Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future <input type="checkbox"/> *Transfer of Support Project/Proposal Title:	
Source of Support: Total Award Amount: \$ Total Award Period Covered: Location of Project: Person-Months Per Year Committed to the Project. Cal: Acad: Sumr:	
Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future <input type="checkbox"/> *Transfer of Support Project/Proposal Title:	
Source of Support: Total Award Amount: \$ Total Award Period Covered: Location of Project: Person-Months Per Year Committed to the Project. Cal: Acad: Sumr:	
Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future <input type="checkbox"/> *Transfer of Support Project/Proposal Title:	
Source of Support: Total Award Amount: \$ Total Award Period Covered: Location of Project: Person-Months Per Year Committed to the Project. Cal: Acad: Summ:	

*If this project has previously been funded by another agency, please list and furnish information for immediately preceding funding period.

Current and Pending Support

(See GPG Section II.C.2.h for guidance on information to include on this form.)

The following information should be provided for each investigator and other senior personnel. Failure to provide this information may delay consideration of this proposal.	
Investigator: Jean Lecuyer	Other agencies (including NSF) to which this proposal has been/will be submitted.
Support: <input type="checkbox"/> Current <input checked="" type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future <input type="checkbox"/> *Transfer of Support Project/Proposal Title: Glendale Community College Math & Science Transfer, Excellence and Retention (MASTER) Scholarship Program	
Source of Support: National Science Foundation Total Award Amount: \$ 500,000 Total Award Period Covered: 07/01/06 - 06/30/11 Location of Project: Glendale, CA Person-Months Per Year Committed to the Project. Cal: 10.00 Acad: 0.00 Sumr: 0.00	
Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future <input type="checkbox"/> *Transfer of Support Project/Proposal Title:	
Source of Support: Total Award Amount: \$ Total Award Period Covered: Location of Project: Person-Months Per Year Committed to the Project. Cal: Acad: Sumr:	
Support: <input type="checkbox"/> Current <input type="checkbox"/> Pending <input type="checkbox"/> Submission Planned in Near Future <input type="checkbox"/> *Transfer of Support Project/Proposal Title:	
Source of Support: Total Award Amount: \$ Total Award Period Covered: Location of Project: Person-Months Per Year Committed to the Project. Cal: Acad: Sumr:	
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*If this project has previously been funded by another agency, please list and furnish information for immediately preceding funding period.

Glendale Community College
Math & Science Transfer, Excellence and Retention Scholarship Program
Facilities, Equipment & Other Resources

Laboratory

Students enrolled in STEM majors at Glendale Community College have access to:

- An Anthropology lab equipped for studies in the biological aspects of human populations as well as in archaeology and paleontology.
- A state-of-the-art chemistry lab featuring computer interfaced instruments and wired for laptop use.
- A modular general and introductory chemistry lab featuring internet connections and computer docking ports at laboratory stations.
- A Geography lab with computer access to the Geographical Information System (GIS) to study physical geography, population dynamics, water systems and more.
- A computer-equipped geology lab designed to help students visualize 3D geological and topographic structures, and access satellite-based planetary data.
- An Oceanography lab featuring equipment and samples to help students investigate the physics, chemistry and evolution of the oceans.
- A physical science lab with computers loaded with software for all the physical sciences. It is used on a drop-in basis for student work, computer-based learning and tutoring.
- A conceptual physics lab for conducting experiments in basic physics and a computerized physics lab for advanced coursework.
- Six Biology labs featuring state-of-the-art equipment.

Clinical

N/A

Animal

N/A

Computer

There are 22 computer labs on campus with more than 2000 computers for student use. A dedicated Math/Science lab features computers with programs commonly utilized by math, physics, chemistry and astronomy students. More than 90 percent of the 103 classrooms at Glendale Community College have one or more twisted-pair Ethernet jacks that are connected to the campus backbone and support the Dynamic Host Configuration Protocol. Network and System Services recently installed a self-addressing IP address system in classrooms to improve the ease of connecting to the Internet using portable equipment. Several new classrooms in the Science Center can support wireless web access.

Office

There will be no individual office assigned to the scholarship program. Instead, a variety of offices across campus will support the scholarship students, including Financial Aid, Academic Counseling, the Math/Science Center, Supplemental Instruction and the

Transfer Center. The program director and co-principal investigator will coordinate the program from their own offices, with the support of a clerical assistant.

Other

The Cimmarusti Science Center houses an all digital planetarium, developed by Sky-Skan, Inc. with a live digital star field via the DigitalSky and full-dome video presentation via SkyVision plus, a computer controlled 5.1 surround sound system. Shows are presented on a custom built 30 foot diameter dome. The planetarium has 48 reclinable seats.

Major Equipment

N/A

Other Resources

Clerical support will be made available to the proposed scholarship program.