Mission Statement

The mission of the NASA/Ames Internship Program is to provide experiential education to a diverse student population. To support this mission the program offers one-year internships that complement each student’s course work, challenge their initiative and creativity, and increase their self-confidence. These internship experiences also prepare students for the world of work or for further college or university study.

Goals and Objectives

GOAL 1. Promote and evaluate program quality, student performance and learning outcomes, job advisor satisfaction with program, and staff and faculty performance achievement.
Objectives:
   a) Collaborate with staff and campus departments to achieve mission goals of access, retention, linkage, strategic planning, equity, diversity, shared responsibility, and accountability.
   b) Review and evaluate program for instructional integrity and effectiveness, pedagogical soundness and achievement of performance and learning goals in alignment with academic standards and criteria of the district and college.
   c) Evaluate academic achievement: mastery of course material, learning objectives, development of critical thinking skills, communication skills, computer technology knowledge, and mathematical analysis skills.
   d) Evaluate intercultural competencies (measures of cognitive, personal and interpersonal growth): measuring students’ awareness of culturally shaped knowledge, quantitative data, and provide opportunities for students to expand their knowledge of other cultures.
   e) Develop and convey clear expectations about what interns can expect and what we can expect from them.
   f) Ascertain reliable methods for maintenance and measuring program quality.
   g) Determine core experiences that every student should have and evaluate program success in linking course work to the internship.

GOAL 2. Plan activities to increase enrollment, enrollment of underrepresented groups with interest in STEM careers, and increase private industry participation in the internship program.
Objectives:
   - Recruitment, placement and hiring of approximately 150 interns per year in the program.
   - Increase enrollment of underrepresented groups with interest in STEM careers in the program by 3% over the 2002-2003 enrollment.
   - Outreach to other community colleges in the area and develop articulation agreements to allow outreach to recruit interns on their campuses.
   - Outreacht to increase the number of internship work experience agreements with private companies contracting with the District by at least three more than during the 2002-2003 school year.
Increase the enrollment of students from diverse populations by conducting at least 4 marketing events targeting diverse populations and networking with K-12 transfer programs.

**GOAL 3.** Continue to provide services and activities related to student success and retention.

**Objectives:**
- Increase the number of meetings, activities and mechanisms for the purpose of promoting student success and sense of community with the program and NASA/Ames.
- Evaluate the opportunities to engage their surroundings, reflect on cultural values and differences, and to synthesize their insights with ideas they garner from written course materials and seminars.
- Provide events and services that celebrate and respect individual differences.
- Provide collaborative opportunities and intern presentation opportunities to promote interaction among interns and NASA/Ames employees.
- Increase the linkage and student utilization of campus counseling and job placement services.
- Create and distribute a Job Supervisors Handbook
- Create and institutionalize a Learning Outcomes based approach to developing educational elements of the program to foster intern success in: personal growth and development, professional development, educational success, cooperative education job success, and future career selection.
- Promote and publicize student success through publication of anecdotal stories of learning achievement and accomplishments of interns.
- Invite internship program alumnae to support interns and participate as guest speakers, mentors, and contributors.
- Maintain currency of all relevant procedures to assure compliance with education code and district board policy, and Federal government (NASA, OSHA) and funding partners.

**GOAL 4:** Foster and promote the partnership between the District, NASA/Ames and other educational programs.

**Objectives:**
- a) Promote the flow of communication between providers of educational internships at NASA/Ames and establish appropriate programmatic linkage.
- b) Keep District and Presidents of Foothill and DeAnza Colleges apprised of the plans and activities of other educational providers working with NASA to develop the NASA Space Park and activities of NASA/Ames Space Park Higher Education Collaborative NASA.
- c) Explore the possibility of offering distance learning classes to International Space Station Personnel, and/or explore the possibility of space station personnel team-teaching or guest lecturing a distance learning class.
- d) Direct activities related to shared office space with the NASA Research Park Learning Collaborative and serve as liaison to the District.

**GOAL 5:** Research the relationship of student internship experience to student success in the workforce and/or their pursuit of academic educational goals.

**Objectives:**
- a) Develop research proposal to measure the learning outcome and impact of Return on Investment of student internship work at NASA/Ames and Private Industry contractors.
b) Aggregate and report intern information on the relationship of internship experience to academic educational goals.

c) Identify metrics to assess internship experiences related to learning and the 21st Century Learning Outcomes Assessment model.

**Expected outcomes and program success can be measured by:**

1. The number of career track interns finding employment in their field of work.
2. The number of students indicating that the internship experience increased their self-confidence.
3. The number of students continuing their community college education.
4. The number of students transferring to a four year college or university.
5. Anecdotal notes and other information indicating that interns were more successful or better able to transfer knowledge and skills learned on the job to the classroom and had an increased understanding about the relationship of coursework to the job site.
6. The number of interns indicating that they found employment at the end of their internship and that they would be making more in wages or salary than before their internship.
7. The number of interns indicating they were very satisfied with the program.
8. The number of interns indicating that they achieved their educational goal.

**Future Program 2003-2004 Goals/Implications**

**Foothill-De Anza Community College District**

**NASA/Ames and Private Industry Internship Program**

**CHANGES, CHALLENGES AND STRATEGIC PARTNERING**

**Promoting Student Access and Success, and Workforce Development in 2003-2004**

**What is our mission and goal?**

1. Provide experiential education to a diverse population

2. Work experience that complements course work, challenges initiative and creativity, and increases self-confidence

3. Foster personal growth and plans for professional achievement
   a) Provide opportunity for self-assessment, critical analysis, and target outcomes for personal and professional growth
   b) Develop creative, critical and analytical thinking processes
   c) Develop exercises and seminars to promote personal skills: Judgment and decision-making, curiosity, analysis, synthesis, reasoning, evaluation, creativity, research, learning strategies, problem solving, information management, and aesthetic awareness.
   d) To develop social perceptiveness including, respect, citizenship, cultural awareness, interpersonal skills, ethics, lifelong learning, community service, self-esteem, integrity, empathy, and awareness of diversity of learning styles.

4. Prepares students for the world of work and further university study
   a) Advancing student success and access (FHDACCD Educational Master Plan, Spring 1999)
b) Strategies for recruitment and retention of underrepresented students who reflect the diversity of our community

c) Link students with special academic needs, those under-prepared, facing language challenges, lacking privilege, first generation college students and all those who need a chance to succeed in a changing world to appropriate campus services.

d) Develop activities and programs to ensure that all underrepresented students perform and achieve at a level consistent with other student groups, and that all students perform to their potential.

e) Ensure that every Foothill-De Anza graduate will write, read, and communicate at the college level and is able to work cooperatively in a global and diverse cultural environment.

How do we plan to accomplish these goals?

1. Addressing change and analyzing, planning and strategizing ways to improve our service
   a) Determining how we must adapt to interface with and align the Internship Program with NASA/Ames workforce development pipeline goals for educational partners
   b) Scanning the horizon to determine career and education trends and match them to internship opportunities within NASA/Ames and in private industry

2. Scrutinizing our program and supporting the 21st Century Learning Outcomes project at Foothill:
   a) Developing baseline data in preparation for district accreditation self-studies and visits which will focus on improving student learning
   b) Planning student learning goals and behavior change,
   c) Assessing student learning outcomes
   d) Soliciting and reporting anecdotal student successes
   e) Moving to a “culture of evidence” to organize, document and report on evidence of student success supported by learning outcome evidence

3. Refine our educational program and student services to ensure that our diverse population will achieve their educational goals

4. Provide counseling and linkage to academic support services on campus

5. Build in feedback and review points to assist students develop communication skills

6. Develop strategies for recruitment and retention of interns that reflect the diversity of the students we serve

7. Create an environment which encourages the free exchange of diverse ideas, opinions, and inquiries by requiring all program staff and participants to commit to and be sensitive to understanding of and respect for the diverse academic, socio-economic, ethnic, cultural, disability, religious background and sexual orientation of our community of interest.
   a) Seek ways to support the commitment to improve the diversity environment by creating learning opportunities.
   b) Developing feedback mechanisms to gauge our progress and guide our planning in providing a working and learning environment that supports all of our students and employees.

8. Program review data analysis and reporting
1. Measurement of an employee’s contribution to student success and achievement of our mission.
2. Develop evaluation tools and processes to assess what is working and not working for student learning and success

9. Create a balanced resource allocation policy that ties program decisions to mission and goals
   a) Shared budget planning
   b) Seek to communicate the balance required to meet competing demands on resources and how to best distribute those resources to preserve student success

10. Develop a plan for marketing and outreach to develop program credibility:
   a) NASA/Ames visibility enhancement plan: division meeting presentations, student presentation events, FHDA Board tour, Astrogram success stories and program event articles, Contractor Council, attend NASA presentations and events.
   b) Community of interest: reports to NASA HQ, FHDA Program Review Audit report, Learning Outcomes reports that provide information based on frameworks for capturing student learning and success
   c) Contact Internship Program alumna: develop a mentor network, solicit contributions, and collect success stories
   d) FHDA District: web site links to appropriate campus program web pages, presentations to targeted campus student organizations, and participants in the campus underrepresented student outreach strategy

21st Century Learning Outcomes

<table>
<thead>
<tr>
<th>21st CENTURY LEARNING OUTCOMES</th>
<th>Desired Attributes or Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communication</strong></td>
<td>Proficiency in English, reading, writing, speaking, listening, presentation, interpersonal communication</td>
</tr>
<tr>
<td><strong>Computation</strong></td>
<td>Proficiency, in math, complex problem-solving skills, computer proficiency, decision analysis, understanding/ability to apply mathematical concepts and reasons, analyzing and using numerical data.</td>
</tr>
<tr>
<td><strong>Creative, Critical and Analytical Thinking</strong></td>
<td>Judgment and decision-making, curiosity, analysis, synthesis, reasoning, evaluation, creativity, research, learning strategies, problem solving, information management, aesthetic awareness.</td>
</tr>
<tr>
<td><strong>Community/Global Consciousness and Responsibility</strong></td>
<td>Social perceptiveness including, respect, citizenship, cultural awareness, interpersonal skills, ethics, lifelong learning, community service, self-esteem, integrity, empathy, awareness of diversity of learning styles.</td>
</tr>
</tbody>
</table>

The self-study should establish:
1. What an ideal graduate of a program should know and be able to apply after community college.
2. The linkages between the Internship program learning goals and the requirements and activities (seminars, self-study elements and student development activities and seminars) that students complete during their internship.
3. How assessment of student performance and accomplishment is related to the goals of the program and the core competency learning goals identified in the Educational Master Plan.

4. What knowledge, skills and abilities or attributes (KSA) we expect students will possess upon successful completion of the program, and to identify outcome measures that provide evidence of learning. Ideally, learning outcomes will include more than the academic content of a specific discipline and will contribute to what the student must know and be able to do to succeed in life.
A. ASSESSMENT OF INTERNAL AND EXTERNAL FACTORS AND STUDENT SUCCESS

1. Internal Factors: The NASA/Ames Internship Program faces a challenging time of change, particularly those changes resulting from budget reductions within the FHDA District that impact the students. Students have been impacted by: a) reductions in the number of courses available and the resultant difficulty in registering for a minimum course load and/or adding courses late to meet Financial Aid minimum enrollment requirements, and b) difficulties in meeting with limited campus student services staff for counseling and employment paperwork processing. However, the community college is well positioned as a strategic partner to continue to provide interns to meet NASA/Ames and private industry staffing requirements.

Role of the community college in workforce development

Foothill-De Anza Community College District NASA/Ames and Private Industry Internship Program plays a key role in future workforce development for NASA and as a key educational partner in the NASA/Ames Research Center.

1. The FHDA District Internship program serves all community colleges in the area and has access to more than 100,000 students at local community colleges in the Bay Area.

2. Today’s community college student may hold advanced degrees and is a new type of re-entry student who is a career changer returning to the community college to upgrade their skills (enrolling in new courses and certificate programs that were previously not available) and brings years of work experience to an internship and is oftentimes qualified to move into higher levels of permanent employment at NASA.

3. The community college is a pipeline for local workforce development and serves as an educational bridge between high school science and math programs and future education and careers in STEM areas through articulated transfer to four-year educational institutions.

4. Community college student career patterns are community-centered, they tend to join the local workforce after degree attainment at the Associate of Arts level and return to their home locale after attaining advanced degrees, thus directly benefiting NASA/Ames workforce development planning.

5. If NASA/Ames becomes a center of excellence for First Responder technology development, transfer and training, the Foothill College Emergency Medical Technician and Paramedic degree programs can provide the instructional infrastructure for training and continuing education of first responder personnel.

2. External Factors: Due to the state of local and global economics, the NASA/Ames Internship Program faces a challenging change, particularly change resulting from budget reductions of NASA/Ames, contractor partners and our private industry partners. The budget reductions have a trickle-down effect of reducing the number of internship positions available. In addition, the program has internship position competition from other educational partner institutions to NASA/Ames that provide fully funded internship positions. The key strategy and plan is to
closely align the Internship Program with key partners to provide NASA/Ames with access to a pipeline of qualified student interns.

**Changing Profile of the Re-entry Career Changer**

On the positive side, a cadre of older, degreed community college students with previous work experience are an emergent group given this economic climate that redefines the profile of the “new re-entry career changer” applying to the internship program. Many of these new re-entry career changers are returning to the community college to advance their knowledge and improve their skill set with new educational courses and programs such as bioinformatics and information technology classes that were previously unavailable to them prior to their entry in their chosen careers. NASA/Ames and other industry partners welcome this new breed of community college re-entry student and are adapting the one-year program design to retain many interns into a second internship year. This extended hiring pattern allows us to keep the total intern numbers of the Internship Program at a steady state during this time of decreased funding available at NASA/Ames. In a declining employment economy, the compensation rate of interns makes them affordable in comparison to the alternative of hiring regular employees with attendant benefit costs. Given the state of the low employment environment, interns more often elect to continue their internship beyond the one-year commitment and are available to transition to permanent employment.

**Changes, Challenges and Strategic Partnering**

The NASA/Ames Internship Program is aligned to play a pivotal role in providing a future workforce for NASA/Ames to assist in meeting NASA Goal 6 – through filling the workforce development pipeline with community college students pursuing academic degrees and careers in STEM areas. The key to meeting this strategic workforce development need is linking targeted courses and academic programs to meet identified staffing needs at NASA/Ames. NASA’s Integrated Financial Management system cost-centered accounting tags funding for planned future human resource requirements that result from strategic plans for development of NASA/Ames for its Center of Excellence core competencies in: Supercomputing, Life Sciences Research, Center for Bioinformatics, and Gravitational Biology Research. Thus, an opportunity exists to align and integrate campus academic certificate programs and degree programs with internship cooperative education learning opportunities in key research areas at NASA/Ames. For example, the FHDA District is well positioned to align its new bioinformatics certificate program at Foothill College and the GPS certificate program to meet NASA’s research agenda and staffing needs. These new certificate programs can provide NASA with more mature, experienced, degreed interns who could transition to fill workforce needs based on the projected 25%-30% of civil servant retirements expected in the next three to five years. In addition, if NASA/Ames moves forward with an agenda to capture Homeland Security funding and becomes a Center of Excellence for First Responder technology development, transfer and training, the Foothill College Emergency Medical Technician and Paramedic degree programs can provide the instructional infrastructure for training, certification and continuing education for first responder personnel.

The Internship Program access to key people at NASA and through the Collaborative for Higher Education partnerships allows us a myriad of opportunities to meet mutual workforce development needs. For example, private sector internships may be expanded through collaboration with:
The challenges are numerous and involve obstacles of restructuring, changing, and refocusing the program mission to adapt to the exigencies that exist within our sphere of influence and the communities of interest of our partners. We have the opportunity to show ROI performance outcomes and develop a structure to capture the Learning Outcomes and contributions of intern work to NASA/Ames. Of great concern is the NASA funding, as the current grant and internship program may be threatened by need to integrate other projects from educational partners in the Collaborative for Higher Education as a result of the changing program mission in response to environmental challenges. The primary threat to program stability is the risk of funding denial that may result of re-writing the NASA grant to incorporate internships with different model.

SWOT ANALYSIS

The SWOT analysis of the Foothill-De Anza Community College District NASA/Ames and Private Sector Internship Program (hereinafter known as the NASA/Ames Internship Program) provides a summary analysis of the strengths, weaknesses, opportunities and threats that the Internship Program faces as a result of external change in the internal and external environment. Included in the SWOT analysis is a review the external factors affecting program goals and performance (e.g. changes in demographic, educational, social, economic, workforce, or global trends; evolving technology; demand (based on enrollment trends or other factors)); linkage with other related campus programs, services, or committees; local availability of similar programs; and the availability of auxiliary funding.

Strengths
1. Solid program foundation and longevity serving NASA for 32 years.
2. Experienced staff with long history of service to the program. Several Program Coordinators serving over 15 years provides continued program credibility and sustainability.
3. Program Coordinators and Program Director provide student supervision and support.
4. Program Coordinators provide recruiting and screening.
5. Worker’s comp coverage provided by FHDA District for student employees. Other educational programs providing interns to NASA/Ames do not provide worker’s compensation coverage or safety training, which is a concern for NASA.
6. The Internship Program integrates safety training and meets all OSHA requirements for risk management of medical emergencies.
7. Medical emergency response plans information is in place and provided to all interns and job supervisors.
8. Job supervisors provided a mentor binder with program information, forms and expectations for a successful internship sponsorship
9. Payroll services provided through District Central Services.
10. Campus student service support
11. Scholarships
12. One-year length of service internships
13. Current intern and NASA/Ames mutual interest in extending internships beyond one-year
14. Educational seminars for personal development, professional development, educational planning and career development, and exposure to life sciences, super computing, and space research.
15. Individualized student support planning for problem solving and promoting student achievement.
16. Wide range of internship positions and work experience that matches student skill and education level
17. Diversity: recruitment of underrepresented students for NASA to encourage an exchange of ideas.
18. High staff morale and commitment to serve and promote the program despite budget concerns at NASA/Ames and within the FHDA District
19. General seminars, tours and presentations for exposure to NASA/Ames research.

Weaknesses
1. Program inflexibility: hiring timeframe limited to 3 cycles/year, internship duration set, student compensation lower than other NASA educational providers for students with higher level skills and educational attainment, payroll issues.
2. Too few positions: Internship program currently not connected to NASA staff workforce needs pipeline and NASA currently lacks a unified strategic staffing and budgeting plan
3. Students viewed as cheap labor by some sponsoring organizations
4. No formal marketing strategy and materials
5. Applicants limited to self-selection, and there is a need to develop pipeline connection with key campus programs that educate students in areas of staffing needs for NASA
6. Program visibility limited to few key contacts, need program integration with NASA strategy
7. Inability to offer internships to non-U.S. citizens as a result of NASA Space Act Agreement funding restrictions.
8. No formal plan for recruitment outreach to target underrepresented STEM career students
9. No formal plan to collaborate with FHDA campus faculty to recruit students
10. No tracking information about future educational and career success of intern alumni
11. No organized contact with 3,300 former interns.
12. No formal plan to recruit more private industry partners who will sponsor our interns.

Opportunities
1. NASA Goal 6 – workforce development pipeline for STEM
2. NASA R&D – future staffing needs linked to new bioinformatics program at Foothill College
3. NASA Integrated Financial Management system cost-centered accounting tags funding for planned future human resource requirements
4. Expand private sector internships through collaboration with: internship program alumna, Dean of UCSC School of Engineering, FHDA faculty linkages to research projects in private industry
5. Collaborative projects and partnerships between NASA/Ames and Foothill-De Anza Community College District and the opportunity to promote STEM careers
6. Free NASA graphics, photo and printing available for development of marketing collateral material
7. Access to key people: FHDA Board, NASA/Ames and HQ, Collaborative partnerships, campus administrators and faculty involved in strategic program development.
8. Opportunity to show ROI performance outcomes and Learning Outcomes of intern work to NASA
9. Provide NASA with more mature, experienced, degreed interns who might transition to fill workforce needs based on projected staffing needs from the 25-30% of civil servant retirements expected in the next three to five years.

10. To better integrate campus academic certificate programs and degree programs with internship cooperative education learning opportunities.

11. To offer different models of internships to meet specific problem solving internships that fit NASA’s full cost accounting Integrated Financial Management Program for shorter three month internships.

12. To foster partnerships to collaborate with employment contractors to NASA/Ames to meet NASA/Ames staffing needs with interns.

13. Student interns continue to be an affordable opportunity to fill staffing requirements and allow sponsors to evaluate potential hires for future staffing needs.

14. To improve program functionality, develop more internship placements, provide intern mentors and generate funding support by outreach to 3,300 former intern alumni.


**Threats**

1. NASA funding: current grant and internship program may be threatened by need to integrate other projects from educational partners in the Collaborative for Higher Education

2. Re-write NASA grant to incorporate internships with different model, but risk funding denial

3. Fewer positions at NASA/Ames due to 1 year program design and related NASA funding issues stemming from new IFMP system that tracks funding and prohibits Fall quarter placement.

4. Loss of potential internship positions to other educational programs because of lack of program flexibility.

5. Other educational programs with funding for “free interns” and sponsorship flexibility for shorter-term internships

6. Economy – A no growth economy, fewer internship positions at NASA and in the private sector due to staffing cutbacks and budget limitations.

7. State of California funding level with consequent cut-backs to academic and student services which may disqualify students who are unable to enroll for the requisite 9 units to maintain enrollment status and qualify to continue an internship.

**NASA/Ames and OneNASA Strategic Goals and Plans**

Several NASA/Ames goals and strategies for the future bode well for the program. The transforming principles and process is the direct connection of mission and goals in key funding areas to funding required human resources. Three percent of the NASA budget will be allocated to education. The One-NASA strategic plan requires each NASA site to identify funding shortfalls and develop a strategic plan that identifies the research center’s core competencies and to identify its structural needs for vertical integration of its human resources and capabilities. Full-cost accounting of the new Integrated Financial Planning system brings a major change from program centered accounting to core competency-center of excellence budgeting and planning. NASA/Ames Research Center FTE planning will include the development of a future-needs skill mix plan and allocation of FTEs to address shortfalls in the required skill set/mix. Budgeting and hiring will be on a term and project base with a
two to four year cycle. NASA/Ames intends to focus resource allocation for new lines of business and for long-term strategic research that contributes to OneNASA strategic needs and use of technology developed by NASA/Ames by other government agencies (e.g. FAA strategic plan integration with NASA/Ames research, NASA/Ames support of MER missions). Center Director Scott Hubbard identified the following areas requiring future skill-mix planning: information technology, bioinformatics/nanotechnology, astrobiology, thermal protection, and ATM/ATC. Scott Hubbard said that Adena Loston’s presence at NASA HQ identifies the importance of budgeting funds to support key partnerships in the local community. The NASA/Ames Internship Program is a strategic partner providing access to the future workforce pipeline and as such will collaborate with NASA/Ames in the development of plans for filling future staffing needs.

The Foothill-De Anza Community College District and NASA have signed an agreement to facilitate the development of an academic center in the NASA Research Park for first-generation college students interested in pursuing careers in science, technology, engineering and mathematics. The long-term plan of the college district includes offering academic programs at NASA to prepare students for information technology, astrobiology and the life sciences, engineering, mathematics and physical sciences.

“This agreement brings onsite to NASA, the community and college students interested in high-tech career paths in a variety of programs, and support the goal of the new NASA Education Enterprise to inspire more students to pursue the study of science and engineering, with the ultimate goal of having them choose careers in aeronautics and space at NASA,” said Dr. Adena Loston, associate administrator for education at NASA Headquarters, herself a one-time community college president. “This next generation of explorers will learn through unique teaching and lab experiences—provided as only NASA can—what it takes to develop the technologies of tomorrow.” NASA is committed to working with teachers and academic institutions to enhance educational opportunities and programs, to provide access to unique NASA products, learning materials, facilities and researchers, and to inspire the next generation. The new center will serve as an excellent opportunity to work collaboratively to accomplish these important goals.

Located on 213 acres at Moffett Field, NASA Research Park is envisioned as a world-class, shared-use research and development campus in association with academia, industry, and nonprofit organizations. NASA/Ames partners with organizations to conduct research in astrobiology, nanotechnology, information technology and other aerospace-related research areas.
B. STUDENT SUCCESS EVALUATION

This report does not contain FHDA District Institutional Research information that would document metrics for outcomes listed. In addition, at this time, we do not have in place mechanisms for tracking former interns to determine academic success, retention, and transfer or career success. Future plans include the development of metrics, and analysis to determine programmatic success of alumni. We have 10 years of Internship Program database information on the interns from 1992-1993 to 2003-2004 and total numbers of students served by the program since 1971.

3,300 Total number of students served by the FHDA NASA/Ames Internship Program since 1971.

410 Total number of students who were offered employment at NASA/Ames as civil servants or with contractors to NASA/Ames. A 12% hire rate in 32 year history of the Internship Program.

32 Number of years the program has been in existence and in continuous operation at NASA/Ames.

1,244 Total number of interns placed in Science and Technology internships at NASA/Ames in the last 10 years (1993-2003).

596 Total number of female interns placed in Science and Technology internships at NASA/Ames in the last 10 years (1993-2003). 48% of interns placed in Science and Technology internships

648 Total number of male interns placed in Science and Technology internships at NASA/Ames in the last 10 years (1993-2003). 52% of interns placed in Science and Technology internships

144 Total number of interns currently in the program.

117 Total number of interns currently working at NASA/Ames (of the 144 current interns in program as of June 30, 2003)

12 Number of interns currently working for contractors to NASA/Ames (of 144 current interns in program as of June 30, 2003)

33 New interns hired July 1, 2003. (Of these 30 work for NASA/Ames civil servants or contractors)

41 Interns are extending their internship commitment and continuing beyond their first year of service (this number has been increasing from 10 electing to extend their internship a year ago to the current number as of July 1, 2003).
C. STUDENT EQUITY/DIVERSITY ANALYSIS:

Ethnicity of 144 Current interns*

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Percentage Total</th>
<th>Percentage Females</th>
<th>Percentage Males</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>38.9%</td>
<td>26.3%</td>
<td>12.5%</td>
</tr>
<tr>
<td>African American</td>
<td>3.5%</td>
<td>1.4%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>37.5%</td>
<td>22.9%</td>
<td>14.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>8.3%</td>
<td>4.9%</td>
<td>3.5%</td>
</tr>
<tr>
<td>Other</td>
<td>11.8%</td>
<td>6.4%</td>
<td>5.6%</td>
</tr>
</tbody>
</table>


Ethnicity:
55% of the students participating in the program were from backgrounds other than Caucasian.
48 female students were sponsored by NASA during this reporting period and of these 73% of these female students were placed in scientific or technical positions.
36% of the Foothill College students are minority students
49% of the De Anza College students are minority students

Intern Profile reflects a changing a new re-entry student profile
17% of interns hold BA/BS degrees
4% hold a master’s or Ph.D. degree
22% are re-entry or career change students
D. ACTION PLANS AND PROPOSED PROGRAMMATIC CHANGES

1. Program goals related to Educational Master Plan and Partnership for Excellence
   - Improve success rate for challenged underrepresented students
   - Direct recruitment of intern applicants to campus faculty who will target qualified students
   - Maintain program enrollment levels with focus on improving value add of intern contribution to NASA/Ames through ROI performance contribution data and developing metrics for tracking intern success
   - Maintain current level of successful program completion through mission-based outreach and recruitment and use of successful student intern development and retention strategies
   - Contribute to FHDA Goals for Workforce Development
   - Focus on the student as the unit of measurement
   - Review student performance through student, internship accomplishment and program portfolios

2. Other Program Improvement Plans
   - Increase involvement of NASA/Ames administration in program development (perhaps a NASA and private sector advisory board)
   - Continue to focus on program improvement that targets learning outcomes that are linked to program activities for personal development, job accomplishment, educational attainment, and career development goals for interns.
   - Continue to engage interns in development activities to foster retention and success
   - Explore distance learning approaches for educational seminars
   - Increase program visibility at NASA/Ames and in the public sphere
   - Engage in mission-based governance and budgeting
   - Implement the concept of “deep learning”, how to engage in the topic, and develop student portfolios with evidence and artifacts of learning outcomes

E. ENROLLMENT AND PRODUCTIVITY GOALS

1. Maintain program enrollment level at current level
2. Increase enrollment of targeted underrepresented students
3. Continue to contribute student enrollment to meet Financial Aid requirements and contribute to FHDA District productivity goals

GOAL 2. Plan activities to increase enrollment, enrollment of underrepresented groups with interest in STEM careers, and increase private sector sponsorship of interns.

Objectives:
   a) Recruitment, placement and hiring of approximately 150 interns per year in the program.
   b) Increase enrollment of underrepresented groups with interest in STEM careers in the program by 3% over the 2002-2003 enrollment.
   c) Outreach to other community colleges in the area and develop articulation agreements to allow outreach to recruit interns on their campuses.
   d) Increase the number of internship work experience agreements with private companies contracting with the District by at least three more than during the 2002-2003 school year.
   e) Increase the enrollment of students from diverse populations by conducting at least 4 marketing events targeting diverse populations and networking with K-12 transfer programs.
F. SUMMARY OF RESOURCES REQUIRED:

1. FULL-TIME EQUIVALENT FACULTY OR STAFF NEEDS: Although we would like to have a more diverse staff, we are not making any requests of the FHDA District at this time. If the NSF proposal is funded and NASA approves a new program proposal; then we may acquire more staffing from a partner of the Collaborative for Higher Education.

2. FACILITIES NEEDS: We are making no requests at this time.

3. MATERIALS AND SUPPLIES BUDGET AUGMENTATION: We may need to upgrade and replace three computer work stations from G3 to G4 to accommodate the OS-X Macintosh system to comply with NASA/Ames IT Security audit and system requirements.
PART B: PROGRAM PORTFOLIO WORKSHEET

PROGRAM NAME: Foothill-De Anza Community College District NASA/Ames and Private Sector Internship Program

PROGRAM MISSION

The mission of the NASA/Ames Internship Program is to provide experiential education to a diverse student population. To support this mission the program offers one-year internships that complement each student’s course work, challenge their initiative and creativity, and increase their self-confidence. These internship experiences also prepare students for the world of work or for further college or university study.

What will we be doing?
- Establishing and developing linkage between program review, program planning and budgeting, ensuring the success of all students, recruiting underrepresented students, and meeting our partner sponsor needs for interns.
- Develop our planning linkage to ensure a relation between mission, goals, program operations, and educational attainment of our interns.
- Improving student success opportunities and develop translation of student achievement to learning outcome portfolio of accomplishments.
- Promoting and publicizing student intern success

What can we do better?
- Increase the number of interns from underrepresented target populations selecting STEM careers
- Develop metrics and means to measure program success and track alumni career success
- Increase focus on learning outcomes
- Improve employment retention performance for special populations in workforce development

Where are we going?
- Refocus our goals to include strategic planning and partnerships
- Focus on strategic growth and redefinition of the Internship Program
- Increase opportunities and metrics to measure student intern success

EXPECTED STUDENT OUTCOMES

- **Intended or Direct Outcomes**: Personal development, professional job skills and knowledge, educational accomplishment, and career development.
- **What does the program require?**: The program requires students to participate in cooperative work experience to develop skills and knowledge, define personal learning goals and objectives, define career development plan and strategies, define educational goal and plan.
- **Outcome Measurement**: What is the evidence of learning?
  1. **Critical analysis of work experience and seminars**: Personal analysis and report, Job Supervisor feedback and evaluation, Personal seminar reports and assignments, Program Coordinator review, feedback and grading evaluation.
2. **Documenting achievement**: seminar reports, attendance tracking, learning goal accomplishment, measurable objectives and metrics as evidence of achievement.

<table>
<thead>
<tr>
<th>Program Content Proficiencies/Competencies</th>
<th>Desired Attributes: What should a student be able to do upon graduation?</th>
<th>Required Program Activities related to this outcome: Where do students acquire experience?</th>
<th>Outcome Measures: Evidence or Sample Demonstrating Deep Learning: How do we know what a student has achieved?</th>
</tr>
</thead>
</table>
| **Personal Development**                 | ▪ Explore options.  
▪ Understand who I am and what I want.  
▪ Ask “why” questions.  
▪ Commitment to learning and personal growth.  
▪ Understand barriers to performance  
▪ Professional growth issues, concerns and plans. | ▪ Supervisor mentoring  
▪ Coordinator counseling  
▪ Program seminars  
▪ On the job training  
▪ Interface with professionals | ▪ Assess personal development needs  
▪ Set personal development learning goals and objectives  
▪ Develop plan to overcome personal barriers to achievement  
▪ Set benchmarks, measurements and milestones for personal change and development  
▪ Review personal development progress against planned metrics  
▪ Assess personal growth and accomplishments against planned development goals  
▪ Supervisor evaluation  
▪ Personal assessment of Deep Learning |

| **Job Responsibilities**                  | ▪ Understand Job requirements  
▪ Risk management and safety training  
▪ Ask for feedback  
▪ Be responsible and dependable  
▪ Determine job skill requirements  
▪ Plan strategies for personal development | ▪ Supervisor mentoring  
▪ Coordinator counseling  
▪ Program seminars  
▪ OHSA and organizational training requirements  
▪ On the job training  
▪ Interface with professionals | ▪ Knowledge of job duties  
▪ Supervisor evaluation and feedback  
▪ Set measurable learning goals and objectives  
▪ Personal learning and training goals  
▪ Job training requirements  
▪ Attendance and punctuality  
▪ Cooperative team worker  
▪ Effectiveness and efficiency  
▪ Flexibility  
▪ Safe work habits  
▪ Adaptability  
▪ Follow through and ability to prioritize |

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NASA Internship Program
<table>
<thead>
<tr>
<th>Career Development</th>
<th>Interpersonal communication skills</th>
<th>Work quality</th>
<th>ROI productivity metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan strategies to achieve defined life goals</td>
<td>Supervisor mentoring</td>
<td>Resume</td>
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</tr>
<tr>
<td>Pace yourself and work through challenges</td>
<td>Coordinator counseling</td>
<td>Personal Statement</td>
<td></td>
</tr>
<tr>
<td>Find inner motivation to stimulate personal initiative.</td>
<td>Program seminars</td>
<td>Career and education plan</td>
<td></td>
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<tr>
<td>Be open to guidance and shared expertise</td>
<td>Interface with professionals</td>
<td>Job search plan</td>
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<tr>
<td>Develop a professional network and personal empowerment to improve internship effectiveness</td>
<td></td>
<td>White paper research</td>
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<tr>
<td>Target career development and change strategies</td>
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<td>Personal career network</td>
<td></td>
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<tr>
<td>Develop professional contacts.</td>
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<td>Informational interview report</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Educational Responsibilities</th>
<th>Educational Goals and Objectives Learning outcomes report</th>
<th>ROI performance and achievement report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create a learning outcomes portfolio record of skills, knowledge development and ROI productivity</td>
<td>Supervisor mentoring</td>
<td>Educational Goals and Objectives Learning outcomes report</td>
</tr>
<tr>
<td>Be a competent student and continuous learner</td>
<td>Coordinator counseling</td>
<td>Individual assessment of Deep Learning</td>
</tr>
<tr>
<td></td>
<td>Program seminars</td>
<td>Learning Outcomes Portfolio containing artifacts of learning</td>
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<td></td>
<td>Interface with professionals</td>
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<td></td>
<td>Faculty counseling</td>
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</tbody>
</table>

NASA Internship Program
<table>
<thead>
<tr>
<th>Core Competencies</th>
<th>CORE COMPETENCIES: Outcomes and Attributes Distinct to This Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Desired Attributes:</strong></td>
<td><strong>Required Program Courses</strong> related to this outcome: Where do students acquire experience?</td>
</tr>
</tbody>
</table>
| **Communication** | - Able to define learning goals.  
- Able to engage in successful business communication | - On the job  
- In program seminars  
- Communication with peers, mentors and professionals | - Business communication, interpersonal and written  
- Job supervisor and program coordinator evaluation and feedback  
- Evidence of proficiency in English, reading, writing, speaking, and listening, presentation, and interpersonal communication. |
| **Computational** | - Able to meet computational requirements of the job. | - On the job. | - Business analysis, use of computational formulas and skills to solve work problems.  
- Ability to solve computational problems at work and discuss implications of the data.  
- ROI productivity metrics  
- Evidence of proficiency in math, complex problem-solving skills, computer proficiency, decision-analysis, understand and ability to apply mathematical concepts and reasoning, analyzing and using numerical data. |
| **Creative, Critical & Analytical Thinking** | - Write critical text-based analyses  
- Analyze arguments and write a clear cogent argument.  
- Apply analysis to business problems and issues. | - On the job with mentor  
- In program seminars  
- Communication with peers, mentors and professionals | - Business analysis, use of critical analysis skills to solve work problems.  
- Able to discuss the implications of data and information learned within their personal sphere of reference  
- Seminar assignments  
- Supervisor Feedback  
- ROI performance analysis and |
| Community/Global Consciousness & Responsibility | Evaluation and synthesize multiple sources | On the job | Evidence of social consciousness and reference to global importance of impact of work responsibilities.  
| | | In program seminars | Personal impact report on community and global consciousness and responsibility  
| | | Communication with peers, mentors and professionals | Evidence of social perceptiveness: respect, citizenship, cultural awareness, interpersonal skills, lifelong learning, community service, self-esteem, integrity, empathy, awareness of diversity of learning styles.  

Evaluation of academic year 2002-2003  
Date of Evaluation: July 7, 2003  
List of names of participants assisting in this program review:  
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