**Division of Business Computer Science, and Applied Technologies**

**Division Summary**

1. **Reflecting back on your equity success rates, what specific initiatives have had the most positive impact on your success rates? How is your department sharing these effective practices among full-time and part-time faculty members?**

The Division is represented on the College Equity Action Committee by Prof. Sandra Spencer. The Division Equity Core team consists of: Randy Bryant, Manny Cappello, Emily Garbe, and Sandra Spencer.

I strongly believe that faculty and staff are the most important and valuable resource we have in our attempts to increase success rates and close the equity gap. Reaching out to students is very important. In the 2013-2014 open day meeting, one of the students on the discussion panel said: ***“We do better when we know you care.”*** From my own experience, I know this to be absolutely true. Several of our faculty members make it a point to reach out to struggling students early in the term, and my ultimate goal is to make this the norm rather than the exception within the entire division.

Faculty members continue to experiment with ways to increase success rates and close the equity gap. For example, the CIS Department makes extensive use of volunteer tutors. Since the high price of textbooks often disproportionately impacts students in our targeted populations, the CIS Department is also discussing the development of “in-house” textbooks that would help mitigate the **outrageous** cost of textbooks from major publishers. Furthermore, an Accounting faculty member was successful in negotiating a price reduction from $325 to $85 for the textbook he uses in one of his courses.

Faculty are also referring students to the Student Success Center, encouraging students to use SmartThinking, reducing the number of individual assignments and replacing them with more interactive assignments such as simulations and group project, etc.

Discussions around student success, equity, and retention are always part of our Division meetings. The latest Division meeting was well attended and focused on sharing best practices. Faculty shared various techniques and ideas with each other.

Departments meet as often as weekly. Part-time faculty members are always invited and the chairs do an excellent job sharing effectiv**e** practices with them by sending up-to-date meeting minutes.

1. **What do your SLO/PLO and Equity assessment results reveal about resources needed to achieve higher student success and retention rates?**

It differs from one program to another. Common observation is that students lack basic skills and allocating additional resources to basic skills could benefit all programs. The CIS Department determined that students are in need of more programming (code writing) practice. As a result, the CIS faculty recommended utilizing technology by purchasing a site license for CodeLab, which is a code practice web-based environment. An order has already been placed and the tool will be available to all students starting in the Summer quarter of 2014.

The issue of allocating a dedicated counselor or academic advisor to each Division has been in discussion for some time. I believe the time has come to make this happen. Our students could significantly benefit from having dedicated counselors or academic advisors that are housed at the Division offices. This is not a request for additional resources, but a suggestion to use available resources in ways that will have more positive impact on our students.

Additional detailed responses to this question from departments and programs are presented in the program responses.

1. **As you look at the enrollment numbers on your departmental program review data sheets, please tell us what you have done to increase enrollment or, if your department has decreased, please tell us what your plan is for increasing enrollment this coming year?**

Our Division enrollment has been increasing. Every quarter, we:

* Closely work with my leadership team to strategically build the schedule.
* Closely monitor enrollment and share information with the faculty.
* Promptly respond to the demands of the students by adding sections.
* Strategically schedule courses at times where historical data shows demand.
* Email faculty the status of their courses and encourage those with low enrollment sections to promote their courses. Some faculty promote their course(s) by emailing students short blogs about their course(s).
* For the project management certificate, two infomercial evening sessions were held in 2013-2014. Those sessions resulted in high enrollment in those courses.
* Email students to alert them of added sections.
* Email students on waiting lists and direct them to sections with available seats.
* Alert students of add, drop, and other important deadlines such as drop for non-payment.
* Continually update our curriculum by adding cutting edge courses in all areas.

The average enrollment for BC2 has been over 40 students/.111 load. 25 students/.111 load for AT

Enrollment in the MCNC program may suffer a decline this Summer and Fall quarters. One of the two full-time faculty members that run the program has decided to move to Santa Rosa Community College. We are having difficulty finding qualified part-time faculty to teach his CNC courses. CNC is a very specialized area and successful search could take several months.

1. **What is your budget planning process? How do you prioritize resource allocation within the division?**

Individual programs typically include their requests in their Comprehensive Program Review reports. I also work with the Department Chairs and the faculty to identify their needs. (Requests and projects are prioritized based on funding source. Measure C projects are submitted to the Vice President for Finance & College Operations.) Other requests may be funded through Perkins, Lottery or VTEA funds. Some requests are funded through the B-Budget.

Looking at historical data, the ATC equipment maintenance, and supplies have always used significant portions of the Division budget. For a good part of the past 18 months, the building was being remodeled, and therefore there was a significant reduction in spending. The most recent budget sheet is always available at the Division office for review by any member of the Division.

1. **What is the division-wide plan to encourage and fund professional development, including training for online teaching?**

As the Division Dean, I **support** and **expect** every faculty member to be up to date in his/her field. I am fully aware that my Division is comprised of fast changing disciplines, and that it is essential that the faculty possess cutting edge knowledge and expertise. In order to encourage professional development, I have asked all full-time faculty members to provide me with their 2014-2015 professional plan activities and I plan to work with them to accommodate their needs.

Several faculty members are currently on PDL, which allows them to have the time to be involved in professional development activities. The Division will continue, when possible, to fund and supplement professional development activities that are deemed beneficial to enhancing classroom instruction. Our faculty is very resourceful in finding funding sources through other programs such as staff development, VTEA, Perkins, etc.

The Division supports training which contributes to improving online teaching. I suggested that the Accounting Department consider teaching the advanced courses online and they have positively responded. Currently two of the accounting faculty members are pursuing certificates related to online teaching.

**Response to Questions Directed to Departments/Programs**

1. **Reflecting back on your equity success rates, what specific initiatives have had the most positive impact on your success rates? How is your department sharing these effective practices among full-time and part-time faculty members?**

**Accounting:**

While we have used the Tutorial Center to a greater degree than in the past, we believe it is still somewhat early to determine as to its effect on our program. Our department discussions have determined that a number of our students lack preparation in some basic skills - specifically mathematics, and in many cases underestimate the time it takes to grasp accounting concepts.

The department chair discusses resources and best practices with the part-time faculty when scheduling on a quarterly basis. Full-time faculty discuss resources and best practices at all department meetings and discuss those items when evaluating part-time faculty.

**Auto Tech:**

We have a department meeting every week. We talk about students that are struggling and we discuss intervention strategies. We have a computer lab that is always open for students to study if they choose to. Students form their own study groups.

**Business:**

1. Opening Day presentation regarding Best Practices for Non-Traditional Students. We saw an improvement in equity performance that year.
2. Referring students to the Student Success Center for test taking and time management workshops.
3. Assigning students to groups in the beginning of class and having weekly group work to encourage discussions of the chapter and enhance students' sense of belonging.
4. Reducing the number of individual assignments, and replacing them with more interactive assignments such as simulations and group projects.

Many of these learnings came from the annual program review completed this year. These learnings will be communicated to the entire department, including part-time faculty, at opening day in the fall quarter. We have also prepared presentations regarding the Student Success Center which were sent to faculty members to share with their students.

**Computer Science:**

Volunteer tutor program was in place when CIS department success rate peaked in 2011-12.

A Lab Coordinator developed and sustained the tutorial program. Both that position and person were no longer there as of Summer 2014. Thus, the tutoring program has morphed into the Teaching Assistants Volunteer program. Each faculty member, full-time and part-time, has contributed to this program. At Department meetings and in communications from the department chair and lab coordinators, faculty are requested to submit names of potential lab assistants, assigned TAs for their classes, and submit feedback. The training of TAs is now the responsibility of individual faculty; Bachlan and Mai organize schedules, fingerprinting, etc.; and, CIS department chair just wishes she had more time to oversee all. I do make a point of frequent albeit often brief visits to engage in conversation with a teaching assistant and the person they are helping as a "quality control" measure.

**MCNC:**

The department actively provides tutors / mentors to students.

The instructors discuss specific needs of our students at weekly meetings and they are teamed up with tutors and mentors in their specific classes.

**Real Estate:**

During the past two academic years the rate for the targeted groups has increased to 53% from 48%. Our non-success/withdrew for targeted populations rate ran at 52% in 2010-11 and in the past two years that rate has dropped to a combined 47% - so both are going in the right direction, though we would like to see the gap decrease more quickly. The early skills testing instituted this year seems to be moving us in the right direction, though we will not be able to determine the outcome until the next academic year. We also are working on getting a real estate specific tutor in the Tutorial Center during the upcoming academic year.

The Department Chair discusses best practices and new approaches with part-time faculty when scheduling on a quarterly basis, and full-time faculty discuss the newest approaches when evaluating part-time faculty.

**2.   What do your SLO/PLO and Equity assessment results reveal about resources needed to achieve higher student success and retention rates?**

**Accounting:**

No specific additional resources have been identified at this juncture. Over the past three years our overall success rate has run at 73-75% and we have attracted the attention of one of the “Big Four” Accounting Firms as a potential institution for recruitment. This is typically only done at four-year universities with strong accounting programs. So to date, it appears that our outcomes are healthy. We do believe that continuing to integrate the latest technology into our courses and looking to marry MIS and Accounting will be important. We plan on assessing needs for equipment and software over the next academic year and determining additional resources needed to stay current and viable.

**Auto Tech:**

Our results show that we are going in the right direction. Our success and retention rates are among the highest in the college. We need new equipment to enhance our SLO work.

**Business:**

1. Full funding for ESL classes/sections.  It is our understanding that the ESL program has to turn students away because they don't have the authority to offer enough sections to meet student demand.  We recommend fully funding ESL classes and sections.  Add a few sections provided every section still has 20 or more students.  We think this would materially improve student success rates in our courses.
2. It would be helpful if the college would re-institute and staff the student assessment or testing center we used to have until about 2006.  We do not have enough time or space to offer all the students who do poorly on an exam but would do better if they could re-try that exam an opportunity to do so.  We accommodate as many as we can in the hallways outside our offices, but it is very limited capacity so we must turn many students away who request an opportunity to re-try an exam.

**Computer Science:**

CIS Beginning Programming Course:

*SLO: Create algorithms, code, document, debug, and test introductory level C programs.* Reflection & Analysis: Give students more opportunities to practice writing algorithms and programs online AND in the lab classroom, in particular, in small groups so more discussion would enhance learning. **Enhancement: CodeLab online tutorial, online exercises, in class “checkpoint” exercises are currently being used.**

Resource needed: CodeLab tutorial fees need to be supported by the tuition fees for the course and/or Division resources.

Resource needed: With the loss of the lab coordinator, there were three tutors available to tutor students for the beginning of Fall 2013. With the concerted effort by Lab Coordinator Bachlan Nguyen and all CIS faculty, full-time and adjunct alike, we have created the Volunteer Teaching Assistants program. For Spring 2014 there are 21 Teaching Assistants helping in the classroom and tutoring on ATC 203 computer lab floor. We need financial resources to say “thank you” to these students in the form of small gifts and celebratory gatherings. This is an equity issue since our beginning programming students enroll in their first programming course with an ever-widening preparedness. Those from affluent backgrounds and/or students with parents who have IT careers tend to have already had exposure to programming and a higher level of critical thinking.

Resources are needed to provide all students printing capability without charging fee in addition to registration fees. The lack of reasonably priced printing is a significant equity issue. Middle class students have a printer at home. Poor students must pay an excessive price to print on campus.

Financial support for adding computer programming courses to SmartThinking online tutoring program. Many of our students do not have the luxury due to family commitments and/or job to spend time on campus to have questions answered. This would provide an added resource in addition to the instructor’s online time to seek help in our 24/7 world.

**MCNC:**

Our assessments show higher success and retention rates are linked to increased hours in our lab. Students who have the ability to work in the existing open lab (similar to tutorial centers) are 20% more successful than students who cannot, due to conflicts such as transportation, work, and financial issues.

More resources would be needed to keep the lab open more hours. A qualified instructor would need to be added to safely operate the lab and have the knowledge to work with students in all areas, such as conventional, CNC, and CAD/CAM machining.

**Real Estate:**

No specific resources have been identified at this time - although we believe that we will rely more heavily on the Tutorial Center going forward.

**3.    As you look at the enrollment numbers on your departmental program review data sheets, please tell us what you have done to increase enrollment or, if your department has decreased, please tell us what your plan is for increasing enrollment this coming year?**

**Accounting:**

There has been a 9.5% drop in enrollment during the most recent year measured. We attribute this to the enforcement of pre-requisites for our advanced courses and to the economy getting stronger. As a result, fewer students are in need of updated accounting training/education for employment. We are moving toward putting more of our advanced courses online in the starting the Fall of 2014 and are looking toward creating Accounting/MIS courses which we think should stimulate demand in the Santa Clara Valley.

**Auto Tech:**

We have added high enrollment classes and added students to all classes.

**Business:**

We see increasing demand each quarter for online courses.  Our department has addressed this by continuing to increase the number of online sections to approximately 50% of our total offering.  However, we are starting to run into an issue because full-time faculty members are required to teach on campus classes 4 days per week in our division. This means that a greater proportion of online courses are being staffed by part-time faculty members. Part-time faculty are generally less trained and prepared to teach online. This concern has been raised with the Dean.

**Computer Science:**

1. Changed our core course offerings from the procedural language of C to the Object Oriented Language of C++. Although the need to establish an Associate Degree for Transfer in Computer Science triggered this change, it was a change needed to be more attractive to transfer students who must show experience in an object-oriented language.
2. Added courses such as Android development and Ethical Hacking that are on the cutting edge of the IT world.
3. Changed our courses to hybrid has provided many advantages. Certainly one of these means a shorter time commitment in class for the student and facilitates the scheduling of CIS classes to mesh better with the campus as a whole.

**MCNC:**

The off campus Job Corps program was cancelled which added up to a 9% loss of enrollment. During that time the on campus program expanded and will show growth of 10% in 2013-14.

At this time it is extremely difficult to predict future enrollment due the loss of 50% of the full time instructors by the end of the Spring 2014 quarter. The department would need to cover 13 sections and add 4 part time instructors, which is extremely difficult to find qualified instructors with industry experience. If this position is not added back immediately it could potentially cause a 15%-20% decrease in enrollment next year and the potential loss of thousands of dollars in partnership donations.

Due to the late notice of the instructor leaving, I will already have to cancel a Summer course due to not having a replacement.

**Real Estate:**

Our enrollment is up 5.4% in the most recently measured year. As stated in other documents, the department tends to mirror the strength in the real estate market. The Santa Clara Valley market has strengthened in the past eighteen months, so demand has increased.

It should be noted that the period preceding the 2009 financial crash was unique in creating extraordinary demand for the program. This seems to happen for a two to three year period every ten to twelve years. Our ability to be flexible has allowed the program to survive - when several other community college programs have eliminated their Real Estate Programs.

We also notify other schools that no longer have real estate programs that ours continues and we offer both traditional and online courses regularly.

**Additional Questions to Departments/Programs**

**Accounting:**

1. **How are you measuring the impacts of specific interventions, such as on-campus and online tutoring, teaching methods, or student success?**

We do know that tutoring can help the underprepared student. However, our data is anecdotal at this point. We have just begun to implement the online tutoring and it is too early to tell whether its impact will be significant.

1. **If you know specific interventions are effective, how are you increasing the use of this practice across the division/department?**

We are letting part-time instructors know at the beginning of each term. We have representatives come to our classes at the beginning of each term to make announcements to our classes. And we utilize Sandy Blackborow, the Tutorial Coordinator, a great deal in working with her in supplying tutors and recommending students to her Center. We have found her to be an invaluable resource for our program.

**Auto Tech:**

1. **Your department has a very low success equity gap (5%).  Do you have plans to share ideas/strategies with other departments on campus?**

We are working on strategies to share our story across campus.

1. **What progress have you made to increase female enrollment and success rates?**

Our program has more female enrollments than all other bay area automotive training programs combined. In 2012-2013, our female success rate was 80% and our male success rate was 83%, all students. We are always looking for new recruitment strategies. We highlight female students in marketing materials to help with female enrollment. We are working to increase the success rate for all of our students.

**Business:**

1. **The increased equity gap (18%) is partially explained by additional online course offerings. If, in fact, this increase is the result of higher non-success rates, how are curriculum changes recognized and addressed?**
2. Requesting and receiving historical student success and equity data on a course-by-course and section-by-section basis allowed us to definitively identify the disparity in both student success and equity between distance learning courses and on campus courses. In addition, individual faculty members were able to see success and equity data for their specific courses/sections for the first time. This was an eye opener for some faculty members who have since shown a renewed urgency in addressing the issue. Simply being able to identify the problem is a big step in ultimately solving the problem. We plan to request this same level of data from Institutional Research on an ongoing basis.
3. The data were reviewed at several department meetings. Best practices for distance education were shared among the faculty, and a consensus was reached that we need to do everything possible in our distance learning sections to increase the level of interaction and sense of community in distance learning classes. Individual faculty members committed to making the following changes in their distance learning courses:

* Reducing the number of individual assignments, and replacing them with more interactive assignments such as simulations and group projects.
* Assigning students to groups in the beginning of class and having weekly group work to encourage discussions of the chapter and enhance students' sense of belonging.
* Encouraging students to take advantage of on campus resources to help improve the likelihood of success (e.g., the Student Success Center for test taking and time management workshops).

1. Finally, because not all part-time faculty could attend the department meetings held this in Winter and Spring quarters, we will share our findings and recommendations with all faculty during opening day in the Fall.

**Computer Science:**

1. **The CIS program continues to demonstrate innovative techniques to increase student success (2010/11 = 67%, 2011/12 = 73%, 2012/13 = 70%) Briefly explain approaches that contribute to these improvements. Are there plans to share these approaches across the division/department?**
2. Providing more one-on-one help to students in class through assigning our volunteer teaching assistants to answer student question during class. Students then are not “stuck” and discouraged. Students get instant feedback.
3. In many classes students are benefitting from a modified “flipping the classroom” learning environment where students receive immediate feedback to ascertain if they truly understand new concepts. The instructor and/or teaching assistant can immediately re-explain the concept as appropriate
4. Changing our courses to hybrid has afforded many opportunities. With faculty using Catalyst there is a uniform platform for students to communicate with faculty and their peers 24/7. The learning experience is richer since students can post questions and receive answers from their classmates or the instructor. Online quizzes afford immediate feedback.
5. Using Code Lab in the beginning programming courses: CIS 22A Beginning Programming methodologies in C++
6. Our volunteer Teaching Assistants are available in the lab Mondays through Fridays during peak times. Please refer to schedule posted at <http://deanza.edu/cis/tutoring.html>
7. Assigning more group projects prompting students to answer each other’s questions/doubts.
8. We intend to provide opportunities for the women computer science students to network.
9. Ad hoc faculty committees are formed to solve issues in specific course(s). The current main focus now is the “B” Group Committee composed of faculty, full-time and adjunct, who have taught the new CIS core courses: CIS 22A and CIS 22B. The goals of this committee include tweaking the course outline and developing a best pedagogical practices document for these courses.
10. We intend to create online resources, such as self-assessment tests, examples and exercises, solutions, etc. to assist students in their transition from CIS22A to CIS22B, and from CIS 22B to CIS 22C and to update CodeLab to better match our CIS22B.