DEPARTMENT OF CHEMISTRY– THE COLLEGE OF NEW JERSEY
STRATEGIC PLAN, 2013-2017

Strategic Objective 1 (A)
Clarify and Communicate Mission, Identity and Effectiveness

The Department has recently worked to create a list of strengths and weaknesses, and a list of peer and aspirant institutions. During this process, we realized that while weaknesses exist, we also do many things very well and have a strong department with creative faculty. We compare favorably to our peer and aspirant institutions, but we have not done a good job in defining the strengths of the department and sharing them – with our colleagues in the School of Science, the College, and beyond. We have a number of "key target audiences" who should know what we are doing, and who we are, from local industries to alumni.

Being able to communicate our identity requires that we have a shared vision and mission that the entire faculty supports. This requires a special climate and sense of community within the department, which should be further developed.

Goal 1: ***Better define a shared departmental mission and vision (A1)***

Action A: The Department needs to review, discuss and modify our Mission statement and refine the new strategic plan. As we hope that these will be living documents that guide us in all we do, they will need to be understood and supported by the department as a whole.

Action B: In order to support the idea that our Mission Statement is a living document, a schedule should be discussed for review of the Mission Statement on a regular basis, perhaps annually.

One way to maintain a living mission and vision is to kick off each Academic Year with a State of the Department Address. At the conclusion of the Address, we would have a departmental faculty meeting where we discuss new initiatives and determine charges for the departmental committees.

Goal 2: ***Define Educational Outcomes for courses and research and Define Key Outcomes for Chemistry Graduates (A2)***

As we move into the age of assessment and strive to find ways of numerically measuring the effectiveness of our teaching and our program, we should keep in mind that many necessary skills and qualities inherent in the truly successful chemistry professional are not measured by standardized testing. We should look beyond shallow content-driven performance and focus on those aspects of learning which will launch our students into lifelong learning and growth as responsible scientists in society. We may not have a numerical indicator for every outcome, but we must develop assessment tools to discover

what we are doing well, and what we need to be doing better. It often seems obvious to ask certain questions of our graduating seniors or alumni – how well did we prepare you for what comes/came next? etc. However we need to assess our questions, decide what will actually be done with the information, and whether the questions are a true assessment of what we are interested in analyzing.

Traditionally, course grades, established through quiz, test, lab report, and homework grades have provided our faculty with key information on the courses we teach and the extent to which students learn and master the material. ACS standardized tests are a very important tool that we have used effectively. They consistently indicate that we have some outstanding teachers in the department, faculty who understand what students need to know.

Action A: Review as a Department, the proposed Student Learning Proficiencies/Outcomes document (in light of ACS standards and strategic directions), and generate a final document that will help to then, in part, define how we should be teaching, and what assessments should be performed. For the latter, we should consider working with a campus-based or external assessment expert. Any curriculum changes should also be reviewed in the context of our discussions at our most recent curriculum retreat.

Goal 3: ***Identify Points of Excellence and Distinctiveness (A3)***

We need to consider ways to make our accomplishments understood by our campus colleagues. It is also important that our alumni understand that we continue to be a department of which they can be proud. There appear to be many more people "out there" who have heard of Trenton State Teacher's College than The College of New Jersey, so we need to find ways to disseminate information on what we have here, the incredible resources and the excellent opportunities that we provide our students. Accomplishments include what we have here that is and should be shared (good equipment, some novel courses, etc.) as well as publications and grants, student placement information, information on alumni, etc.

Action A: A subcommittee should be assigned with the job of developing a document that discusses the Department, similar to those distributed to prospective students, with more details about the accomplishments and creative endeavors of the faculty, activities of the faculty on and off campus, and the trajectory of the Department. The list of Department Strengths is a good outline for developing this informational packet. From this, selected components will be used to share with the College, the School of Science, our Alumni, and local area Industries. The first step has to be the creation of a document.

Action B: Like the mission statement, the departmental dossier should be a living document. The key to making the document effective in its purpose (to

make our accomplishments known to our campus colleagues and beyond) is keeping it current and free from errors and omissions. Therefore, a schedule should be discussed regarding the regular (monthly) updating of the document.

Goal 4: ***Implement Effective Communication Strategies for Key Target Audiences (A4)***

Once our departmental Mission Statement is in place and we have a shared vision for the image and future of our department, it will be important to have open channels of communication through which we can interact with the greater scientific community. At the moment, the department is somewhat insular – our reputation is strong here in NJ, but probably not as strong as it could be. Our reputation beyond our state needs to be cultivated. As a first-rate institution, our reputation should garner us the best students from well beyond our state's borders. Perhaps more importantly, a national reputation will help our students as they move to graduate school and beyond.

Action A: The website should be updated and maintained. A mechanism for keeping posted department information up-to-date is required. This is a high priority action item.

Action B: Assemble a departmental "rolodex" – i.e., a contact list based on the people that faculty know individually both in NJ and beyond. We should have solid contacts at *all* colleges and universities in NJ, and we should also focus on important graduate programs nationally.

Action C: Generate a department flyer/brochure with our basic information – perhaps a greatly condensed version of the dossier discussed under goal #3. This flyer can be implemented in snail mail OR email communications with other departments, high schools, professional scientists, etc. For example, Dr. O'Connor and Dr. Laviska are currently working on a liaison between our students and an on-going project at the Liberty Science Center (LSC). If we had flyers or informational documents of some kind, we could certainly make them available to the LSC community *and* their guests.

Action D: Faculty and professionals from around NJ should be invited to give seminars much more frequently. This is a great way to build connections and give scientists from outside TCNJ the chance to visit and see what we're all about.

Goal 5: ***Develop approaches to improve the climate in the department to create a cohesive and optimally productive community (A5)***

Perhaps the most important topic is this, the Climate of the department. Several departmental weaknesses that we identify can be directly attributed to this issue. One of the first points that came out of a subcommittee discussion on this was that the "overworked" nature of the faculty may be more perceived than real, and whether it is true

or not, faculty are responsible for pushing themselves to do more, and the department should be pushing everyone to be more productive.

Action A: We should have regular seminars given by faculty for faculty, to discuss our recent advances and complications. It can only lead to more productive work and more collaborations.

Action B: We should initiate regular discussions on how we can, as a department, effectively and creatively package and teach the "areas" of Chemistry. We should regularly discuss our strengths and weaknesses, perhaps carving out monthly time during faculty meetings for this activity.

Action C: We need to repurpose some organizational items that had served us well in the past, such as limiting time spent on a committee to two years, having regular rotations between all of the committees, and starting the academic year with a discussion of what the charges will be to each committee. We could also benefit from having by-laws. With a healthy influx of new faculty, procedures that have served us well in the past can be easily lost. We should have definitions of the committees, procedures for everything that we do, and follow them.

Strategic Objective 2 (B)
Strengthen Departmental Programs and Curriculum

Goal 1: ***Define Key Outcomes for Chemistry Graduates (B2)***

Two key outcomes that we have identified are the need for students to communicate effectively and the need for students to have the foundational skills and knowledge necessary for success beyond college. The department clearly indicated that the ability for our students to communicate effectively about chemistry, or science in general, is a priority. Students should be proficient in both oral and written communication. In order to create a unified curricular vision, it is important to establish learning goals for each of our courses and then to establish collective learning goals for the department.

Action A: Develop a plan for development of student writing and presentation skills. We need to modify the way that we currently provide the intermediate and advanced writing requirement to our students. Currently, the burden rests on a few courses. There is a desire to get closure on these requirements, and to determine how they can best be addressed across the entire curriculum. We have recently taken an inventory of how we address oral communication in our courses for the college. We need to survey the faculty on what we are doing for written assignments in our courses and in the research arena. Some of the faculty members are already requiring "laymen reports" to help the students learn how to communicate with non-chemists.

Action B: Define independent learning goals for every course. Although many courses already include learning outcomes/goals, we must strive to do this for all of our courses. These learning goals should be included on the syllabi of all courses. It would be appropriate for those of us who already have learning goals established to reevaluate those goals in light of recent changes to the curriculum. New technologies should be reflected in the goals. A defined timeline for establishing these updated course goals should be determined.

Action C: Establish collective learning goals for the department. The department has indicated that this is an area that needs to be addressed. Concerns about gaps within the laboratory portion of our curriculum have been raised. Once the learning goals for individual courses are in place, the curriculum committee will identify gaps and propose a universal set of learning goals that should be fulfilled before graduation. One approach to doing this would be to create a table that displays desired learning outcomes for students, including knowledge, skills and dispositions that relate to each of the outcomes.

Measurement

The success of these actions will be measured by 1) the development of a department-wide rhetoric program that is embraced by both students and faculty and spans the introductory, intermediate and advanced level courses, 2) inclusion of learning goals in the syllabi of every course offered in the department, and 3) the development of a unified curricular vision as indicated by collective departmental learning goals.

Goal 2: ***Assess Effectiveness of Recent Curricular Changes (B1)***

With the recent college-wide transformation to the curriculum (*circa* 2004) across the campus, we have only begun to evaluate the effectiveness of these new directions on our curriculum. Transformation changed our teaching loads and the way that we conduct our work. The last five-year review we conducted led to the development of new tracks within the department (ACS-certified with and without research, non-ACS certified, and these options as applied to our forensics and teaching programs). With these changes, the department has noted that the intellectual community within the School of Science has been strengthened, a stronger departmental culture has developed, and the department has a more research active faculty than it did ten years ago. While we have done some assessment to the curricular changes, mainly for our seminar program and our student success on the standardized ACS exams for both general and organic chemistry, additional assessments are needed in the following areas.

Action A: Assess the impact of our recent curricular changes on the ability of our students to study abroad. In the past, studying abroad was difficult in our program, due to the rigidity and highly vertical nature of the coursework. We believe that the development of the new tracks has resulted in increased

flexibility in student scheduling. There has also been a stronger campus-wide push for study abroad, as well as increased opportunities for students to study abroad in the summer, Maymester, and J-term. The department needs to collect data to determine whether the added flexibility of creating these opportunities for our students has been achieved.

Action B: Determine whether interdisciplinary programming enhances our program. We have anecdotal evidence that students are taking advantage of the increased flexibility in the curriculum by taking more interdisciplinary courses and doing more minors and double majors. Some of our chemistry majors have also done research in the areas of physics, biology and mathematics. We have an established specialization in Forensics and we have recently developed a new specialization in Condensed Matter that includes 4 chemistry and 3 physics faculty members.

Action C: Evaluate the most recent changes made to the career development portion of our seminar series. The department has recently dropped the senior seminar course and condensed the material presented into three courses in the freshman, sophomore and junior years. Although the courses are still offered pass/fail, the students now receive 0.5 units of credit for taking both the sophomore and junior courses. Through this seminar series, the department has been able to prioritize career development for the students. Recent improvements have been made to the information literacy portion of the course, but additional work is still needed in ethical training and safety awareness. The overall idea for the seminar course, which has been developed over many years, should be disseminated to other undergraduate programs that might benefit from it.

Measurement

The success of these actions will be measured by 1) a careful analysis of the number of students engaging in study abroad activities over the last 5 years, 2) an evaluation of the elective courses and advanced option courses that our students are taking in order to determine if they are engaging in more interdisciplinary work, and 3) writing of a journal article that summarizes the ideas contained in the seminar series and analyzes the success of the overall program.

Goal 3: ***Identify and Implement Curricular Improvements (B3)***

We feel that we have a rigorous academic program, focused entirely on the undergraduate student experience, which includes choices of degrees and a unique set of upper level technical electives. We value the fact that there are no graduate students to compete for faculty attention and no TA's substituting for faculty in the teaching labs. Yet, we should continue to seek innovative and creative ways to educate and better engage our students across the curriculum. We need to encourage the development of new teaching methodologies in both the classroom and the research laboratories.

It has been noted that we have limited curricular options for entry into the major (limited general chemistry tracks, e.g.). We have talked about redesigning the general chemistry curriculum. Perhaps we could include our chemistry/secondary education students in the process of laboratory revisions, thus teaching them about our pedagogies. We could also introduce research experiences into the lower level classes.

Action A: Over the next 5 years, to develop or identify new departmental laboratory manuals for both general and organic chemistry. Every faculty member will contribute at least one new experiment for either general or organic chemistry. We would like to include our CHMT's in the process as they could benefit from learning what goes into choosing, preparing for, carrying out and assessing an introductory chemistry experiment. We could also engage some of our upperclassmen, especially those that may have some form of teaching in their future (graduate students, e.g.).

Action B: Introduce new technology in the classroom including clickers, the use of electronic notebooks and new instructional modes (flip classroom, e.g). We have had limited exposure to clicker technology, but could greatly benefit from this in our larger foundation courses. We have already begun exploring the use of electronic notebooks, and have recently ordered iPads for the department so that we can try this with our laboratory sections.

Action C: Enhance the development of pedagogy by encouraging faculty to attend workshops or inviting guest speakers. In addition to attending workshops on pedagogy and teaching methodologies, perhaps we could get support from our Dean for inviting a prominent outside person who could come to present to the department and members of the School of Science as a whole.

Action D: Enhance teaching and internship opportunities for our students. The former is supportive of Action C and will allow students to obtain management and leadership experience, a new upcoming requirement for ACS certified degrees. For the latter, students would engage in an off-campus research experience with supervision of external mentor and oversight by a departmental personnel. These activities would be for course credit.

Measurement

The success of these actions will be measured by 1) revision of the laboratory components of both the general and organic chemistry courses, 2) realizing an increase in the use of new technologies over the next three years, 3) development of new course opportunities for students, and 4) increased participation in pedagogical development and the application of these new methods into our courses.

Goal 4: ***Prioritize Program Improvements and Establish New Directions (B4)***

It was felt that we should look closely at the way that we are teaching chemistry, and determine whether improvements can be made. Are we happy teaching chemistry the way that everyone else does it? Should we be teaching separate lecture and lab courses? In terms of strengths, we believe that the development of new specializations (Condensed Matter, e. g.) strongly indicates the departmental desire and willingness to collaborate with other departments, and to develop interdisciplinary programs. With regard to weaknesses, we have limited staffing options for our courses (no instructors or TA's).

Action A: Further develop safety awareness into our curriculum. This will be accomplished by ensuring implementation of our current safety plan, the assignment of safety committee members or safety coordinator, and the hiring of an external safety consultant.

Action B: Create an advisory board composed of industry, graduate school representatives, and alumni that can provide feedback on the latest trends and needs of industry and graduate programs.

Action C: Survey our seniors and consult with our advisory board to adjust the curriculum to meet the needs of our graduates.

Action D: Compile data to evaluate the financial impact of additional course sections and new courses on departmental resources over the past 5 years. As we move forward with new ideas, we must remember that we have limited space, budgets and faculty and staff to carry out our work. We may need to discontinue certain practices or courses in order to initiate new directions. In addition, as a department, our enrollments are beyond our capacity. Therefore, we must be careful that new program ideas do not add to our current student population.

Action E: Explore the possibility of hiring someone with an interest in outreach programs for chemistry. This represents an area of expertise that we currently do not have within the department and may require that we review and revise our current requirements for tenure and promotion. We feel that there could be many opportunities for service learning that could be incorporated into the curriculum (that could possibly tie into the goals of the Bonner Center, for example). The department should have this discussion in light of the potential future hires.

Measurement

The success of these actions will be measured by 1) the implementation of a safety plan, including procedures and its administration, 2) the formation of an advisory board that meets regularly, 3) the gathering and evaluation of data from the various groups indicated, 4) the development of charts that illustrate how resources are being expended for the courses supported by the department, 5) the hiring of a new faculty member with interests in outreach

Goal 5: ***Enhance Academic Support Systems for Student Success (B5)***

We benefit from an excellent and highly engaged student body, with respect to both our academic programs and departmental community. Although most of our students are successful in their progress in the major, we recognize that we can improve the retention, success and engagement of our transfer students (both internal and external) and students from underrepresented groups. We have made some strides in this area. We have built strong connections with the tutoring center where many of our students who were tutored early in their studies become tutors as upperclassmen. The Student Chemists Association has created a strong mentoring program for transfer students and freshmen. Those of us working with the PERSIST program are aware of the benefits of having super-tutors and faculty mentors for this group of at-risk students.

Action A: Evaluate best practices for supporting student success based on our current programs, that is, tutoring center, SCA peer mentoring, and PERSIST.

Action B: Identify at-risk students from among our internal and external transfer students and assign them to PERSIST faculty for advisement. Connect these students with existing academic and social support programs.

Action C: Explore the possibility of creating a common space in the new STEM building for a drop-in center where faculty hold their office hours. This practice has been successful for other institutions. We would have full-time faculty members and adjuncts working together to help students in need. We currently do not have the space to do this in our building.

Action D: Investigate the use of peer-led study groups to help student performance. This has been done successfully at other schools too, and if facilities could be created at TCNJ, would ultimately lead to a greater sense of community. The faculty could provide the student leaders with appropriate materials to conduct review sessions. The student leaders would also benefit from this experience.

Measurement

The success of these actions will be measured by 1) generating a list of best practices, 2) higher retention rates for transfer students, 3) decision to include (or not) a common space for a drop-in center for faculty office hours in the new STEM building, 4) a plan to pilot (or not) peer-led study groups in select Chemistry courses.

Strategic Objective 3
Strengthen Departmental Research Activities and Accomplishments

Goal 1: ***Enhance faculty scholarship (C1)***

To enhance faculty scholarship, the following actions are recommended.

Action A: Quarterly faculty research retreats.
Regular retreats twice a semester to share our research accomplishments and paper/grant writing stages to encourage each other to keep writing and finish projects. This involves creating a culture in the department to help us plan our research and writing. The supportive environment can create a sense of accountability to continue to work towards the departmental goals of increasing publications and grant applications. In the execution of a research project, one may face different problems, including technical and non-technical. A support mechanism has to be established to help faculty.

Action B: Create time for faculty to finish writing publications and to write grants. This involves the "creative use" of release time by coordinating SOSA (school-appointed release time, Support Of Scholarly Activities) with overloads salary. Most of the faculty has been in overload with respect to teaching. Everyone has taken the salary but the faculty can strategically carry over a maximum of 3 FWH time to the next academic year. If this overload is combined with SOSA and 3 research students, a faculty member can have an almost teaching free semester to write. This release time needs to be implemented carefully so that release time does not negatively impact the departmental teaching needs. When a faculty member enters a heavy writing stage, they should be protected from service activities and highly intensive teaching loads, such as department chair, new course development, intensively teaching laboratories.

Action C: Increase sabbatical leaves. Previously, taking sabbaticals has not been the culture in the Chemistry department. Over the next 5 years, we should expect 2-3 faculty to apply and take Sabbaticals, particularly those who are ready to engage in intensive writing phases of their research program. The department should encourage Associates who are attempting to be promoted to Full to be the highest priority candidates for Sabbaticals. We seek guidance whether an external sabbatical at another institution is more productive than a sabbatical taken at TCNJ.

Action D: Create a culture that promotes faculty scholarship. Provide support mechanisms for scholarship, such as the development of peer writing groups.

Action E: Increase library journal funding. The funding from the library has been mostly in the form of books. If we could transition the funding towards

journals subscriptions, we could benefit. In addition, faculty should look at the Princeton Science Library, which has free access, to obtain their scholarly articles.

Action F: Encourage and support faculty conference attendance. Professional conferences are venues for researchers to disseminate to and to learn from other researchers. Faculty should also be encouraged to take more leadership roles in conferences (such as organizing symposia or workshops).

Action G: Increase funding for instrument maintenance and supplies. Our current infrastructure must be maintained. The department should try to work out better deals for instrument maintenance and service contracts. For example, we have several Bruker instruments. Will Bruker offer us a package deal for service that will allow us 1-2 service visits per year on any 1 instrument? We would be taking a measured risk that an instrument will only fail every few years. Our supply funding is adequate for basic needs but sometimes more expensive chemicals or analyses must be done. We should have a separate, transparent fund for those needs that the department can support. In addition to funding, the department could benefit from having common instrument spaces that are easily accessible by both faculty and students.

Measurement
The outcome of these actions will be measured by increased grants submission and faculty publication.

Goal 2: ***Define and expand mode of involvement and define assessment of students in research (C2)***

To enhance student research, the following actions are recommended.

Action A: Teach students how to do research and increase safety culture. We could design a seminar course, which will include common research methods, laboratory skills, instruments operations, and safety training. We would like to implement either a safety workshop or a generalized 2 hour seminar as part of CHE393. Then, for specific safety concerns, each faculty member can cover safety for their own research group. Perhaps, each faculty member might be required to come up with a 5-10 question "safety quiz" that all students must "pass" in order to perform research in their group. Students should also be taught how to manage risk in terms of chemical safety so they can adapt to new and changing situations in the laboratory.

Action B: Understand and develop student roles in research. Although research with undergraduates is one of the most important and rewarding components of

our careers, we need to engage the department in discussions on the roles of students in our research programs. We need to develop an understanding that students are wonderful at certain stages of our research but can cause some parts of our research to slow down and prevent the completion of our research publications. By understanding the student role, we can become more productive scholars by reducing our research student loads during the academic year or by training students to be more independent during the academic year. First, the department should clearly and formally delineate learning outcomes, student expectations, and assessment for students enrolled in CHE393 and CHE494. The department should engage in discussions on how to have students enrolled in research courses during the summer sessions so that students can be trained intensively before starting the academic year research. This would run in parallel with MUSE, but serious discussions should occur about fairness and equity in terms of faculty salary ($1,000 for MUSE, unknown salary for independent study course) and student tuition (students pay for experience but get academic credit, MUSE students get paid but no credit).

Action C: Provide research experiences for the majority of students. Related to Strategic Objective 1, in the short term, we can increase research space through effective space utilization to accommodate more research students. We must also examine our goals for our department. Research can also include literature research, so if we are incorporating literature work into our classes, then we are already providing research experience for all students.

Action D: Allocated proper space for research. The request for more research space should be included in the TCNJ master plan. We should use our new space in creative and different ways. For example, when the new STEM building is built and Mathematics space becomes available, the newly acquired space could be converted into teaching space and current teaching space could be converted to communal laboratory space.

Action E: Create a chemical-free research interaction space. This should be included in the college's master plan to create a chemical-free space for research students to interact.

Action F: Improve students' oral and writing skills through a departmental honors program. To have all research students present an oral presentation would be difficult on faculty time. We suggest that oral presentations (aside from poster presentations) would be best utilized in a departmental honors program. We can design a departmental research honors program and require students in this program to orally present and defend their research. The departmental honors can be bestowed upon certain students at graduation who meet a GPA requirement, have completed research, and who write a thesis and present their research orally. We would need to

form committees of, possibly, no more than 3 people (including the student's research advisor) to review the thesis and question the students at their oral defense. This would be a possible way to obtain departmental honors. There should be the alternative, as well, where students who are not partaking in research can obtain departmental honors by completing the five ACS exams in Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry and Physical Chemistry.

Measurement

The outcome of these actions can be measured by the numbers of our graduates admitted to graduate schools and industries.

Goal 3: ***Enhance research writing, grantsmanship and funding (C3)***

The following actions are recommended.

Action A: Enhance grant writing culture and increase external grant application quality. The faculty retreat above can help create the culture. All faculty should be encouraged to attempt external funding. Additional support to write grants should be provided to increase grant applications. The Dean has been proactive on providing support for instrumentation and programmatic grants. Writing individual research grants can be difficult, as we do not have experts in our fields on campus. Perhaps offering an honorarium for external grant review would drastically increase odds to get funding. The faculty should also investigate multi-investigator grants and funding opportunities. The process could take advantage of the experienced grant writers in the department to develop larger programmatic grants to fund several faculty members within a single funding cycle.

Action B: Increase internal funding quality. With the increased competition for internal funding the department should institute an internal support and review process for SOSA and MUSE. Faculty have always informally helped each other, but perhaps a formalized process would encourage more faculty to help each other. The better applications for SOSA and MUSE also increases the profile of the department at TCNJ. The development of a writing group (goal 1, action D) will support this activity.

Action C: Increase alumni and local industrial relationships to enhance funding. As MUSE becomes more competitive, the department can become more independent of internal funding by tapping our Alumni and local industry for donations. The current MUSE Director, Chan, has already been working with TCNJ Alumni Relations and Development to develop the relationships that will yield donations.

Measurement

The outcome will be measured by increased grant applications and increased interactions with alumni and local industry.

Strategic Objective 4 (D)
Strengthen Community and Engagement within the Department, School, and Chemical Community

Goal 1: ***Strengthen relationships with external partners in academia, industry, government, and community (D1)***

To strengthen our presence we must first develop a vision and identity, and we must have data to identify and promote our accomplishments. This requires, but is not limited to, the implementation of action items identified in strategic objective 4.

Action A: Create a mechanism for increased communication and networking with alumni. Our best advocates are our alumni, so our first approach should be to utilize this group as a resource for "spreading the word" about our department. To do this, we need to develop a comprehensive list of our alumni and we need to regularly communicate with them. Suggested mechanisms that might enhance communication with alumni include constructing an annual electronic newsletter, inviting alumni representing a number of careers to participate in departmental colloquia, using social media to encourage alumni networking, showcasing alumni news and highlights on the departmental website, and establishing an alumni mentoring program for our majors (p.13 of review). We should continue to host receptions for alumni attending national meetings. To be most effective, we must strengthen partnership with the office of alumni relations and the advancement office.

Action B: Continue to improve a strong colloquium/seminar series. A strong colloquium series is a benefit to the department in many ways. It provides faculty, staff and students a more global perspective on science. It provides the department an opportunity to display its resources and accomplishments to others. Finally, it develops name recognition for our program. While this is a major investment of time and resources, it will have a major positive impact on our program.

Action C: Reach out to companies. This is a long term action plan because we cannot possibly expect companies to "give" without knowing who we are and what assets we possess. For this reason, our first action should be to develop a comprehensive list of chemical and related companies in the area making sure we are not just focusing on large corporations. We should then send out an introductory letter that explains a little about our program, our students, our facilities and our research, inviting them to our seminar and student research presentations. Initial contact should be made through

people that we know in industry (including alumni). We should immediately meet with Development on campus and develop a collaborative strategy for enhancing our relationship with local companies.

There are several immediate activities we can perform to begin enhancing our seminar series. First, we should change the name of this program to be "catchier," Next, we should advertise it and invite local companies and schools to participate. Third, we should develop a more formal schedule for our seminar speakers– one that is more "typical" of other schools, that has full faculty participation, and that includes more student participation. Related to action item A, we should immediately develop an alumni seminar series, where we invite successful graduates back to the department and formally recognize them for their professional success. We should see whether alumni affairs would be willing to sponsor such a yearly event.

Measurement

The success of these actions will be measured by 1) increase in the number of "high-profile" seminar speakers 2) increase attendance and faculty/student participation in seminars and other departmental events, 3) increase in requests from local industry to recruit students for internships and employment, 4) increase in invitations to visit/present at local companies, 5) increase in activity on our web site, and 6) increase in alumni participation in campus and departmental events and activities.

Goal 2: ***Develop a mechanism to regularly review the department, its priorities, and its personnel, to enhance departmental excellence and the productivity of faculty and staff (D2)***

The department is often driven by external factors, which result in a reactive approach to planning. To enhance proactive decision making, the department should regularly review its goals and accomplishments, and stay focused on specific identified priorities. To be more effective with our time, every member of the department should clearly understand their responsibilities and should remain "on task." Because the department is composed of a heterogeneous group of faculty and staff, we must develop a more effective means to maximize the unique talents of its members.

Action A: Perform an annual review of the department. The annual review would be a formal document that highlights the accomplishments of the department in the context of the departmental and school strategic plans. The annual review should also provide a list of its priorities for the upcoming year. To implement such an annual review, each faculty and staff member would be required to complete an annual review form and would also meet every year with the chair or dean. It should be noted that all aspirant schools prepare and disseminate annual reviews.

Action B: Update and clarify the roles and responsibilities of departmental members. All of the department's current documents related to staff, faculty, chair, and committee responsibilities should be reviewed and updated as necessary. Recommended actions include: 1) shorter, staggered terms for committee members, 2) overlapping appointments of some individuals to some committees, 3) dedicated time for brief reports from committees, 4) distribution of committee meeting minutes and end-of-year report to the entire department.

Action C: Develop an internal method for calculating faculty effort. The current methods used to calculate FWH do not take into consideration the differential effort given to certain teaching, research, and service activities. We should develop a detailed internal calculation that determines effort given to all teaching and service activities, and adjust faculty assignments to better reflect their efforts in these areas. By doing this type of internal calculation, we may be better able to juggle responsibilities in a more equitable fashion, and in a way that best utilizes the specific talents of our faculty.

Action D: Develop a leadership council for the department. To better understand the context of our goals and planning, and to better communicate our identity to others, we will develop a council that will meet approximately once per semester with departmental members. The council should be made up of members of the TCNJ campus that have ties to our programs (e.g., Education, Engineering, Nursing), scientists/businessmen from local industry, local politicians, and members of larger academic institutions. The council would function as a "sounding board" for various initiatives that we will pursue as part of our strategic planning. Council members may also be able to offer assistance in certain matters, such as curriculum revisions, training outcomes, and community relations, where applicable.

Measurement

The success of these actions will be measured by 1) increased departmental productivity (e.g., publications, funding, course development, student success), 2) yearly departmental annual reports which can be disseminated in full or abbreviated form, 3) enhance departmental recognition on and off campus (difficult to quantify, but will be measured by the decrease in effort needed to explain who we are).

Goal 3: ***Improve our facilities so that common high-quality space is available for our faculty and students (D3)***

Having a common space will promote faculty and student interactions and will enhance a sense of community. In addition, it will provide a space to enhance communication and collaboration.

Action A: Create a lounge area in the chemistry building. Possible locations include the first and second floor study areas. Ideally, an architect should be involved in the renovation of this space, but minimally, new furniture should be purchased for the identified area. A great enhancement to the space would be to have a satellite coffee/snack bar similar to the *Kineticart* (or at least vending machines). Although plans are currently underway to improve space for chemistry, some immediate renovations can be performed, such as converting the octagon room into a student/faculty lounge.

Action B: Create better study areas for our students. The computer laboratory is currently used as a student lounge/study area. The area should be renovated to reflect its multi function and it should serve as both computer and work/reading areas. The addition of a copier/scanner would greatly enhance a sense of student community, as they will no longer need to travel away from the building to perform these activities elsewhere on campus.

Action C: Create collaborative areas for our faculty and staff. This could be achieved by the creation of a common reading room/lounge. Laboratories could be reconfigured and/or renovated so that they are shared by more than one faculty member.

Measurement
The success of these actions will be measured by 1) increased student and faculty presence and 2) increased colligative activities.

Goal 4: ***Enhance professional development of faculty and staff (D4)***

Professional development is essential for the growth of our department. There are many resources available on campus that we should utilize more effectively. We should develop a more formal strategy for mentoring junior faculty, mid-career faculty, non-tenure track faculty (including adjunct faculty), and our staff.

Action A: Continue to promote faculty sabbatical rotations and other institutional-sponsored professional development activities. Faculty have not applied for sabbatical leave for several years. This is a tremendous waste of school resources as there is a mechanism in place to allow faculty periodic release time for this activity. We need to encourage faculty to participate in sabbatical leave and to do so we must develop an appropriate rotation for its implementation. Sabbatical leave is not restricted to performing research at another institution and so we need to think more "out of the box" for how faculty can best utilize this resource for their professional development and the development of the department. Such reflection and planning requires regular faculty review and supports the notion that regular annual review of departmental faculty and staff would be of value (further discussed in Goal 3). Other professional development activities

exist and some (e.g., SOSA) but not all are well utilized. The department should encourage the pursuit of such internal opportunities and external activities (e.g. international collaborations), which enhance professional development.

Action B: Develop a comprehensive list of procedures to ensure consistent and regular mentoring of faculty and staff. To do this, all staff, non-tenure track faculty, and junior faculty should be assigned a mentor/advisor that can help with professional development, including the assembly of necessary institutional documents required for tenure, promotion, or review. This is currently being done for junior faculty, although in an inconsistent manner. Items such as classroom peer review should be scheduled in advance by either the personnel committee or the chair. Mentor/advisors should meet with their mentee at least once a semester.

Measurement

The success of these actions will be measured by 1) increase in number of applications for sabbatical leave and other professional development opportunities and 2) increase in faculty and staff productivity (as measured by accomplishments and recognition).