PORTLAND COMMUNITY COLLEGE
VETERINARY TECHNOLOGY PROGRAM
PROGRAM REVIEW EVALUATION

Outcomes and Assessments: The PCC Program Review outcomes are printed in bold type; Outcome Assessments in Italics. These outcomes and assessments are listed at http://www.pcc.edu/edserv/dpreview/dpoutcomes.html under the heading of "Discipline/Program Review Outcomes".

1) To improve the quality of teaching and learning by asking faculty, staff, and administrators to reflect upon and examine teaching methodologies, learning outcomes, and curriculum.

A) Evaluate the curriculum using national and or professional discipline/program guidelines where available.

The Veterinary Technology Program has the status of "Full Accreditation " by its national accrediting body - the American Veterinary Medical Association's Committee on Veterinary Technician Education and Activities (AVMA-CVTEA). The program is reviewed every five years. A detailed self-study report is sent to the AVMA-CVTEA which is followed by a site visit. The last Report of Evaluation was in August 1998, and the next site visit is scheduled for February 2004. Full Accreditation, by definition means that the program has "met or exceed all minimum requirements." See Appendix A for the 1998 Report of Evaluation. The Program received initial probational accreditation in 1988, then full accreditation status in 1992 as well as in 1998.

B) Review and revise where necessary learning outcomes for the discipline/program and/or for any sequence of courses within the discipline/program.

The Core Outcomes of PCC are:

1. **Communication:** Graduates of Portland Community College should be able to communicate effectively by determining the purpose of communication; analyzing audience and context to use appropriate language and modality; and by responding to feedback to achieve clarity, coherence, and effectiveness.
2. **Community and Environmental Responsibility:** Graduates of Portland Community College should be able to apply scientific, cultural, and political perspectives in understanding the natural and social world and in addressing the consequences of human activity both globally and locally by demonstrating an understanding of social change and social action.
3. **Critical Thinking and Problem Solving:** Graduates of Portland Community College should be able to think critically and creatively solve problems by

understanding and using various methods of reasoning and evaluating information.

4. **Cultural Awareness:** Graduates of Portland Community College should be able to demonstrate an understanding of the varieties of human cultures, perspectives, and forms of expressions as well as their own culture's complexities.
5. **Professional Competence:** Graduates of Portland Community College should demonstrate mastery in a discipline or profession at a level appropriate to program and transfer requirements through the application of concepts, skills, processes, and technology in the performance of authentic tasks that enhance community involvement and employability.
6. **Self-Reflection:** Graduates of Portland Community College should be self-appraising in applying the knowledge and skills they have learned, examining and evaluating personal beliefs, and comparing them with the beliefs of others.

The learning outcomes of the Veterinary Technology Program, in addition to meeting the requirements for accreditation, should also reflect the core outcomes for the college. Listed below are the desired Learning Outcomes of the Veterinary Technology Program. Also listed in italics is which core outcome is fulfilled by the learning outcomes of the program.

1. Graduates should be able to pass the National Veterinary Technician Board Examination. *(Professional Competence, Critical Thinking & Problem Solving)*
2. Graduates should be able to function as competent veterinary technicians in their chosen area of veterinary medicine, whether it is veterinary practice, research, laboratory, or industry. They should be able to think, calculate, and make the decisions allowed them by the Veterinary Practice Act of the state in which they are employed. *(Communication, Critical Thinking & Problem Solving, Professional Competence)*
3. Graduates should be able to work as effective members of the animal health care team in their chosen area of veterinary medicine. This involves the ability to communicate effectively (written and orally), work together with other individuals, and be reliable and responsible. They should recognize that the individuals they interact with on a daily basis, whether it is a co-worker, employer, or pet owner, has uniquely individual needs and behaviors based on their backgrounds and perspectives on life. *(Communication, Critical Thinking & Problem Solving, Cultural Awareness, Self-Reflection)*
4. Graduates should have an awareness of their responsibility as part of the animal health care industry in the prevention of disease in both humans and animals, as advocates for animals and their health, and in the education of the public on animal health care issues. *(Community and Environmental Responsibility, Cultural Awareness, Self-Reflection)*
5. Graduates should understand that they are life-long learners, and continuing education is fundamental to their ability to keep up with the advances in

veterinary medicine and related technologies. *(Communication, Critical Thinking & Problem Solving, Professional Competence, Self-Reflection)*

C) Give evidence that the discipline/program learning outcomes are being met by students.

The best evidence and measure that students are meeting the program's outcomes in terms of professional competence is the scores on the Veterinary Technician National Examination (VTNE). We measure professional competence based on the program outcome listed above as #1: *Graduates should be able to pass the National Veterinary Technician Board Examination. (Professional Competence, Critical Thinking & Problem Solving).* Annually the Program's Department Chair receives a report from the Professional Examination Service in New York, NY, the administrators of the VTNE. Each state and province in Canada utilizes this examination as a measure of a graduate's knowledge to be a licensed, registered, or certified veterinary technician (depending on the state or province's veterinary technician licensing nomenclature). In 1992, the Oregon Board of Veterinary Medical Examiners started using the VTNE as their standard test to determine eligibility to become a certified veterinary technician in the state of Oregon. Prior to this, the Oregon Board made up its own exam. In 1998, the testing service's report started listing data comparing the average scores PCC graduates received with the average scores of graduates of other programs. This enabled us to perform comparative analyses with the data obtained.

From 1992 through 1997, the PCC Veterinary Technology Program's graduates maintained a 100% pass rate on the VTNE. In 1998, the data received also listed the number of graduates taking the exam and the number failing. Utilizing this information we were able to calculate the pass rate for other programs nationally and compare it to ours; this is represented in the table below & Appendix B.

Percentage of New Graduates Passing the Veterinary Technician National Exam

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
PCC	100	100	100	100	100	100	93**	100	100	100	96**	100
Criterion Schools*	NA^	NA	NA	NA	NA	NA	85.7	85.8	84.3	84.1	83.5	83.5

*Criterion Schools are other colleges and universities with Veterinary Technology Programs.
^NA – means the information was not available
**Each of these percentages reflects one individual that did not pass the board.

Since 1992, we have had 260 graduates take the VTNE in June of the year in which they graduated, with 258 passing. Two have failed, and we were informed that both retook the

exam in January and passed. On the first attempt at passing the VTNE, PCC graduates have maintained a 99.2% passing rate, this compares nationally to an 84.3% pass rate (based on data since 1998). This represents a 14.1% higher pass rate than graduates of other programs. When one evaluates total number of graduates that have taken the test more than once, PCC has a 100% pass rate. (See Appendix B)

Our analysis did not stop with total pass rate. Since 1998, the testing service has been providing the average scores obtained in each of the seven major categories on the board exam plus the total or overall average score. The program's faculty thinks it is important to be able to evaluate the scores on the board with the courses we teach and the instructors that teach them. In addition to the average scores of all PCC graduates taking the exam, the testing service provided data for comparison in four groups: criterion candidates (recent graduates of veterinary technology programs), all candidates (recent graduates, past graduates, and trained on-the-job), U.S. candidates, and Canadian candidates. The criterion candidates were the best comparison group since we were comparing our recent graduates with recent graduates from other programs. In addition, the criterion candidates always scored higher than any of the other three categories, presumably because the other categories included on-the-job trained individuals that did not fare as well on the board exam. We compared the PCC graduates total scores from 1998 through 2003 with the criterion candidates, and did the same for each category on the board, i.e. compared the average scores PCC graduates obtained with those of the criterion candidates in Pharmacy & Pharmacology, Surgical Prep & Assisting, Laboratory Procedures, Animal Nursing, Radiology and Ultrasound, Anesthesia, and Office and Hospital Procedures. The first table in Appendix C, entitled "Veterinary Technician National Examination Scores: Comparison between PCC Graduates and Criterion Candidates," lists these scores for all years and the differences between the PCC scores and those of the criterion candidates. A positive number indicates the amount that the PCC graduate's average scores were in excess of the average of the criterion candidates. All numbers in the above table were a positive number, thus the scores PCC graduates obtained were always higher than the national average in both the total score and in each individual category, and in most cases by a considerable amount. Appendix C also contains bar graphs showing the values of the scores for PCC graduates vs. the value for criterion candidates in each year 1998 – 2003. A bar graph was done for the total score and for each individual category of the board exam. In addition, a line graph was done to illustrate the positive differences, or in other words, the amount in which PCC graduates scored higher than the criterion candidates for each year for the total and in each category. These graphs dramatically illustrate how much better PCC graduates scored when compared to their peers from other colleges and universities. Also, out of the 93 AVMA-accredited Veterinary Technology Programs in the U.S. & Canada, 14 universities offer 4-year Bachelor of Science degrees in Veterinary Technology, and 2 offer 3-year Diploma degrees. So our students are also competing against a significant number of graduates with a three or four year education, and yet PCC grads are excelling in comparison.

On the last page of Appendix C we compared the average differences in scores (by which PCC graduates scored in excess of the criterion candidates) on an annual basis in the

categories on the board that relate directly to the courses taught by our faculty, which included Dr. Phillip Cochran (Anesthesiology, Surgical Prep and Assisting, and Radiology & Ultra-Sound), Dr. Bruce Hopman (Pharmacy & Pharmacology and Laboratory Procedures), and Dr. Christine Fletcher (Animal Nursing and Office and Hospital Procedures). No one faculty member stood out as having scores greater or lesser than another; any variation was attributed to a variation in the difficulty of the exam in any one year and individual variation in the graduates. It showed that all faculty were equally competent in their instructional capability with regards to the courses they teach.

Graduates are also fulfilling the requirement of Program outcome #2, *Graduates should be able to function as competent veterinary technicians in their chosen area of veterinary medicine, whether it be veterinary practice, research, laboratory, or industry*. . Utilizing the list of licensed veterinary technicians supplied by the Oregon Board of Veterinary Medical Examiners, we sent a survey to each graduate and their respective employers. Unfortunately we did not get as many returned, as we would have liked, 31 graduates and 15 employers. Despite the low numbers, the raw data was consistent as were the comments (see Appendix D). This was especially evident in questions 7 and 8 of the employer survey and questions 8 and 9 of the graduate survey. Utilizing the same categories tested on the VTNE, i.e. pharmaceutical/calculations, surgical prep & assisting, lab procedures, animal nursing & restraint, radiography, anesthesia, office & hospital procedures, and an overall rating, we asked employers to rate the graduate's ability and the graduates to rate their own skills. We asked employers to evaluate our graduates in comparison to graduates of other programs and certified employees trained on-the-job. We asked graduates to compare themselves to other employees and rate themselves based on their education. We utilized a 4.0 grading method with A=excellent, B=good, C=average, D=unsatisfactory, and F=failing. The first table in Appendix D, entitled "Veterinary Technology Program Surveys on Vocational Education Training," compared the employer's assessments with the graduate's. The value of the overall category on the employer survey as 3.36 and was 3.37 on the graduate's survey. Based on this data, both the graduates and the employers feel that the graduate's competency in the areas surveyed and overall was above average. In addition, the assessment of both the graduates and the employers was virtually identical, i.e. 3.36 vs. 3.37.

These surveys also asked to rate certain skill sets we felt were important to assess. These skill sets were work attitude, work quality, communication skills, and critical thinking skills, and an overall assessment rating. The results of these surveys are presented in the second table in Appendix D entitled "Veterinary Technology Program Surveys on Skill Set Evaluation." The overall rating by the employer was 3.31 and 3.41 by the graduates. In each area both employers and graduates felt they were above average. We felt that this indicated that, in the opinion of the employers and graduates, Program Outcome #3 was being met, *Graduates should be able to work as effective members of the animal health care team in their chosen area of veterinary medicin*e.

Program Outcome #4, *Graduates should have an awareness of their responsibility as part of the animal health care industry in the prevention of disease in both humans and*

animals, as advocates for animals and their health, and education of the public on animal health care issues, is difficult to assess. PCC graduates are taught these things in their course work. A course is devoted to this issue, VT 207, Public Health & Sanitation. All graduates would have passed this course and therefore understand the needs of the community in preventing animal diseases, and especially those with that are zoonotic in nature.

Program Outcome #5 states that *graduates should understand that they are life-long learners, and continuing education is fundamental to their ability to keep up with the advances in veterinary medicine and related technologies*. Both the employer and graduate surveys showed that 73% on the employer's survey and 55% of employers on the graduate's survey pay for continuing education as a benefit. The Oregon Board of Veterinary Medical Examiners has plans to implement a requirement, within the next 2 years, that 8 hours of mandatory annual continuing education will be required to maintain certification for veterinary technicians.

D) Describe how the courses in this discipline/program address the College Core Outcomes.

See Appendix E. This chart, entitled "Methods by which the College's Core Outcomes are met by the Veterinary Technology Program," lists where in each Course Content and Outcome Guide the College Core Outcomes are met. It is important to understand that this chart sites exactly where in the CCOG of each course there is a high degree of compliance in meeting the College's Core Outcomes. For instance, virtually everything written in the CCOG applies to professional competence since this is a Professional/Technical program. With regards to Critical Thinking and Problem Solving there are many areas that could apply to this, however, only the most obvious were listed, such as calculating drug dosages. Communications occurs in every lab, on every lab sheet students turn in, and every time they fill out an animal record. Therefore, these criteria could have been fulfilled by every laboratory competency for courses with labs, however; only those parts of the CCOG that dealt with writing assignments or specifically referred to charting were listed. Community & Environmental Responsibility, Cultural Awareness, and Self-Reflection were cited from those areas of the CCOG's that specifically addressed these issues.

Note also that the chart in Appendix E lists only the core courses of the Veterinary Technology Program, i.e. those with a VT prefix. Other courses are also required to graduate from the program, these include: Fundamentals for Chemistry, CH 100, Biology, BI 101 & BI 102, and Introduction to Psychology, PSY 101. The above science courses definitely contribute to meeting the requirements for Critical Thinking & Problems Solving and Professional Competence. The psychology course also contributes to meeting the college's Core Outcomes in the areas of Communication, Community & Environmental Responsibility, Cultural Awareness, and Self-Reflection.

2) To maintain instructional quality consistent with standards of excellence within the discipline/program.

A) Assess the success of the discipline/program in contributing to the College mission.

> The following is the Mission Statement of the college: Portland Community College **provides quality education** in an atmosphere that encourages the full realization of each individual's potential. The College offers students of **all ages, races, cultures, economic levels, and previous educational experience** opportunities for **personal growth and attainment of their goals**. To achieve its mission Portland Community College offers accessible and affordable education to the residents of its 1500 square mile district and to the residents of its service districts. As a public, comprehensive, post-secondary institution, this multi-campus college offers lower division college transfer programs, occupational and technical programs, basic skills education, and community education programs. **Partnerships with business, industry**, labor, educational institutions and public sector agencies provide training opportunities for the local workforce and promote economic development. Through **effective teaching** and **supportive student services**, Portland Community College **prepares students for success** as individuals, members of a democratic society, and citizens of a rapidly changing world.

The main points are in bold print and listed below.

1. Provides quality education: The graduation rate and scores on the VTNE are positive proof that the Veterinary Technology Program provides quality education. The response of employers to our survey confirms this proof within the veterinary community.

2. Provides for all ages, races, cultures, economic levels, and previous educational experience: Appendix G shows tables illustrating the variation in age, gender, and race/ethnicity. The program does not discriminate and strives to promote diversity, and at the same time resolves to maintain strict admission requirements that apply to all regardless of age, culture, gender, or race. Previous education experience gains points toward admission because it is known than those applicants with proven college success have a greater ability to succeed in the program.

3. Personal growth & attainment of their goals: The goals of the program are based on the goals of the students. A student want to learn to become a competent veterinary technician, pass the national board, and get a job. Employer surveys and scores on the national board illustrates that these goals are being met. As for being able to find employment, our statistics show that there are 3-4 job openings per graduate. Institutional research showed that from 97-00, 100% of the graduates were employed. Also in the same survey, 100% of the respondents felt that they had accomplished their goals. See Appendix F.

4. Partnerships with business and industry: The program has always enjoyed a close working relationship with the veterinarians, pharmaceutical companies,

associations, and the College of Veterinary Medicine at Oregon State University. Since we are the only accredited program in the state and thus the sole source of credentialed veterinary technicians, the state's veterinarians recognize their role in our continued success. We have a strong and active advisory committee. The program's Veterinary Technician is now on the Board of Veterinary Medical Examiners for the State of Oregon. Our Cooperative Education program is extensive and encompasses hospitals from all over the state. We have close ties with the Portland Veterinary Medical Association and the Oregon Veterinary Medical Association. The Director of the Teaching Hospital at the College of Veterinary Medicine at OSU is on our advisory committee and we send students there in Spring term annually as part of our Cooperative Education program.

B) Report any changes the SACC has made to instructor qualifications and the reasons for the changes.

There have been no changes made in instructor qualifications. Traditionally a Doctor of Veterinary Medicine has taught Basic Animal Science. This year, Fall, 2003, it is being taught by an instructor with a B.S in Animal Science, and a M.Ed. in Agriculture Education. This meets the requirement of the Program. The college requirements however, made qualifying to teach this course more difficult. This was because the instructor had not had 4 years experience in a non-instructional field. The Program felt this individual was well qualified. A person with an Associates Degree and 3 years experience was qualified to teach but someone with a B.S. and M.Ed. was not seemed illogical. We finally qualified the instructor based on competencies.

C) Describe how the students in this discipline/program are using the library or other outside the classroom information resources.

Input by Dr. Cochran: The most specific use the library materials are to view audio-visual tapes and slide shows. We require student to view tapes on surgical preparation of the animal patient, preparation of the surgical team, anesthesia of the small animal patient, and dental techniques. We use tapes and slide shows often in many courses, such as, Basic Animal Science, VT 121, Introduction to Veterinary Technology, VT 100, Applied Radiography, VT 204, Anesthesiology, VT 201, Surgical Assisting and Lab Animal Procedures, VT 202, and Veterinary Procedures Seminar, VT 203. Students may review these tapes if they miss a lab or if they want to review the information covered in the presentation. In Veterinary Procedures Seminar, VT 203, a term paper and oral presentation is required in which students must use library materials. If a student misses a lab or field trip in Large Animal Diseases, a paper must be written that discusses the topics covered in lab; the source of this information is available in the library.

Inp*ut by Dolores Galindo:* VT 100, Introduction to Veterinary Technology: Students have reading assignments, research projects, and have access to a power point display of all animal breeds.

Input *by Dr. Hopman:* VT 108 Pharm. Math I and VT 212 Pharm. Math II: The students are required to ask a veterinarian out in the field to make up a practical pharm. math problem. The students as well as the other classmates are required to answer them as part of a project. VT 111 Hematology and Urinalysis and VT 112 Clinical Procedures: Samples from outside resources are used to enhance the learning experience and provide real life examples of clinically pertinent cases. Guest speakers bring machines to demonstrate a variety of laboratory procedures. A tour of a working clinical laboratory is part of the clinical procedures class. VT 205 Pharmacology: Students are often required to use outside sources to determine common drug dosages used in real clinical cases. VT 207 Public Health: Time is spent discussing current events as they apply to public health. For example: The class followed with interest the progression of West Nile virus as it spread across the country in 2003. VT 210 Animal Nutrition: Guest speakers bring outside resource materials to class concerning the practical application of feeding a variety of diets to animals. Current topics in nutrition (often from television and print) are discussed throughout the course.

Input by Dr. Fletcher: VT 102, Animal Nursing and Restraint: My students utilize the library in order to view required videos on animal handling and restraint.
VT 103, Animal Health Record Systems: My students use the library and outside classroom resources to research and write answers to animal-care and veterinary-related inquiries submitted by PCC staff. In addition, they utilize the library to view a video on client communication.

3) To respond to the changing needs of students and the community.

A) List the professional development activities of the faculty over the last three years and describe any instructional or curricular changes made as a result of those activities.

Professional Development of the faculty is detailed below:

Phillip E. Cochran, DVM, Dept. Chair & full-time instructor:

American Veterinary Medical Assn. Annual Conference, July 2003, Denver, Colorado.

Western Veterinary Conference, February 2002, Las Vegas, Nevada

Oregon Veterinary Medical Association Conference, September 2001, Ashland, Oregon

Wrote textbook, *Laboratory Manual for Comparative Veterinary Anatomy & Physiology*. Publication date August 2003. Publishers: Delmar-Thomson Learning.

During the summer months, Dr. Cochran works as a relief veterinarian for veterinarians on vacation. His personal business is entitled Cochran Veterinary Services.

Dolores Galindo, A.A.S., CVT. Full-time Instructional Support Technician IV.

She works every Saturday at a mixed animal practice, went to various seminars at the zoo, including Lyme Disease and FIV. She attended two Hills Pet Products seminars, one on the geriatric and cardiac patient, and the other on obesity in animals. She attended the Burns Dental Seminar . She also attended a workshop at Clackamas Community College on dealing with clients.

Bruce Hopman, DVM, adjunct faculty

Dr. Hopman attends the required number of conferences to maintain his license with the Board of Veterinary Medical Examiners, which is 30 hours every 2 years.

Christine Fletcher, DVM, adjunct faculty

Dr. Fletcher attends the required number of conferences to maintain her license with the Board of Veterinary Medical Examiners, which is 30 hours every 2 years. In the past 3 years Dr. Fletcher has attended numerous continuing education seminars in veterinary medicine, in the following areas:

- Small Animal Internal Medicine
- Small Animal Dermatology
- Veterinary Pharmacology
- Small Animal Bandaging Techniques
- African Game Capture Techniques
- Euthanasia and Client Grief

She is currently developing a series of educational videos for VT 102, Animal Nursing and Restraint.

Randall Haveman, DVM, adjunct faculty

Dr. Haveman attends the required number of conferences to maintain his license with the Board of Veterinary Medical Examiners, which is 30 hours every 2 years.

No curriculum or instructional changes have been made as a result of this activity.

B) Describe any significant shift in student demographics within your discipline and how that has impacted instruction.

There have been no shift in student demographics in the program and therefore it has not impacted instruction. In Appendix G, the data shows that there was no change in race/ethnicity, age, or gender of significance in the three year period reported 1998-2001. There have been no indications that anything has change since that study. We still have the same population of students that we always have. The one exception in the study showed a decrease in the number of students 18-20 years old. From 14.1%, in 98-99, to 8.1% and 6.0% in 199-200 and 2000-2001. In the last two years we have had approximately 8% of the students in this age range. Since entering the program has become more competitive, requiring college coursework to be competitive, more of the program's applicants have one or two years of college prior to applying, this usually takes these applicants out of the 18-20 year old age group and into the 21-25 year old group.

C) Give examples of how feedback from students, business and industry, community groups, or institutions our students transfer to, was used to make curriculum or instructional changes.

Every 6 years we are required by our accrediting body, the American Veterinary Medical Association (AVMA), to have a complete self-study review and site visit evaluation. The report submitted is quite extensive and is in response to a booklet sent to us entitled *Accreditation Policies and Procedures of the AVMA Committee on Veterinary Technician Education and Activities (AVMA-CVTEA).* In the 2003 booklet, pages 35-61 (see Appendix H), there is a list of questions and charts to be filled out as part of the Accreditation Evaluation Report. Part of this report is to submit a current copy of a detailed Course Outline, which we at PCC call the Course Content and Outcome Guide. Prior to submission, the instructor of the course reviews the course content with regard to the requirements by the AVMA-CVTEA. Then it goes to individuals of the Advisory Committee for their review and recommendations. Since the Program will have to write this report and submit it by August 2004, all CCOG's have been reviewed by instructors and Advisory Committee members. Changes recommended are discussed with Department Chair and instructors and changes necessary are put in the CCOG. The corrected CCOG is sent in to the college officials. The instructor initiates any changes made in course content he/she is teaching.

In addition, the AVMA-CVTEA in its Report of Evaluation lists Critical, Major, and Minor Recommendations for the program to change. Critical recommendations must be performed within one year or a program's accreditation status will be forfeited. Major recommendations, if not followed, may result in a diminishment of accreditation status, whereas, minor recommendations are optional with regards to change. The 1998 Report of Evaluation by the CVTEA and its recommendations are listed in Appendix A.

Student evaluations of instructors and courses are done according to college policy. Decisions made on changes are based on student input as well as instructor input and concerns.

D) What strategies are used within the discipline/program to increase enrollment, improve student retention and student success.

There is no need for any strategy to increase enrollment, we receive about 70-80 qualified applicants annually and can accept only 25. The success rate of Veterinary Technology Students is extraordinarily high. In Appendix I, the study showed that the completion rate for the Veterinary Technology Program was 99%, 97.3%, and 97.2% for the three years of the study from 1998-99 through 2000-01. This is compared to other PCC professional/technical programs in the same period have a 93.3%, 93.3%, and 93.2% completion rate. These rates are also very high and the college should be very proud as we are. Statistics indicate that the combined average graduation rate for other veterinary technology programs in the U.S. & Canada is only about 50%.

We have an exit interview for students that drop out of the program. Occasionally a person will drop out because they realize that this is not the field for them. If a student succeeds and completes the first year, they almost invariably graduate.

E) Report any changes made in the last three years to increase student access and diversity.

There have been no changes made nor needed in the past three years to increase student access and diversity. We have 70-80 applicants each year, most of which are female. Veterinary colleges in the U.S. are experiencing the same situation. The entering student (Class of 2007) into the College of Veterinary Medicine at Oregon State University has 40 females and 8 males. The trend in the profession has changed from a predominantly male profession to a predominantly female profession. The profession of Veterinary Technology is the same.

F) Identify any operational issues faced by the SACC that impact student learning in your area, (e.g., facilities, availability of part time faculty and other needed resources).

Although the facilities have been adequate, there have been problems in the past, such as: the surgery room was too small, the room was too cold, the air conditioner and its ducts made too much noise. These were corrected by the college. Most of the problems the program has encountered in the past were taken into consideration in the floor plan design drafted by Dr. Cochran and submitted to the architectural firm in designing the new facilities. The plans submitted by Dr. Cochran, with the exception of the placement of the office for the veterinary technician, were adopted (see Appendix J for the floor plans of the new Veterinary Technology area). The current operational problems of concern center mostly around the housing facilities for the animals. The dog kennels and cat dormitory have been in existence for about 25 years and are in a state of disrepair. They are barely meeting the standards required by the USDA. The dog kennels are in worse shape than the cat dormitory. This is important because our ability to house animals on campus is a requirement for continued accreditation by the AVMA.

The availability of qualified part-time faculty is a definite concern. Dr. Cochran, the Department Chair, was not able to find a veterinarian to teach Basic Animal Science, VT 121, this past Fall term. Finding a veterinarian with small animal experience that is willing to teach is not as difficult as is finding one with large animal experience. All of the large animal veterinarians in this area do not have time to teach. In Fall, 2002, Dr. Cochran hired a veterinarian to teach the above class, but this instructor was not able to perform up to the standards needed in this course. Although he was a good veterinarian, that did not make him a good instructor. Based on past experience, the program has noted that it takes at least one year of teaching a course before an instructor becomes truly proficient. In Fall 2001, we had an equine veterinarian teach the course, and because of his time commitment to his practice and lack of knowledge in other species, he did not do a good job either. The instructor in Basic Animal Science this year, with a B.S. in Animal Science and a M.Ed. in Agriculture, because of prior teaching experience at the high school level and experience in the field, is doing a good job. Thus, the instructor in which we had the most trouble qualifying to teach the course is doing the best job teaching in the past three years. Dr. Cochran has told the administration and advisory committee members numerous times that one of the main reasons this program has had continued success is due to the stable group of adjunct faculty. Without the continued participation of Dr. Bruce Hopman, Dr. Christine Fletcher, and Dr. Randall Haveman, this program would not be able to produce the kind of numbers that indicate success similar to what we have produced in the past. The average scores above the AVTE national average of the courses taught by Dr.'s Cochran, Fletcher, and Hopman from 1998 through 2003 are presented in a graph on page 18 of Appendix C. This illustrates the quality of instruction by these instructors. Replacing these individuals with an equally proficient instructor would be extremely difficult.

The most needed resource by the program is more staff help. This will be discussed below.

4) To develop recommendations for improvement in the program/discipline.

A) Assess the strengths and areas in need of improvement in the program/discipline.

Input by Dr. Cochran:

The following is a list of the strengths of the Program:

1. Dedicated, competent, and stable faculty.
2. Dedicated, competent, and stable staff veterinary technician/instructional support technician.
3. Good equipment – similar to the type found in veterinary practices in the Portland area.
4. Adequate facilities – becoming exceptionally good facilities when the program moves to Building 7 in Fall, 2004.
5. Full accreditation status by the AVMA-CVTEA.

The following is a list of areas in need of improvement:

1. New animal holding facilities – research is currently in progress for a grant for the construction of these facilities.
2. Lack of adequate staff: We have only one full-time veterinary technician/instructional support technician. She only works Tuesday through Friday. Therefore, the program is without a technician on Mondays. Dr. Cochran oversees any animal care problems students note, while at the same time teaching 4 contact hours and having 1.5 hours of office hours that day. During Winter and Spring terms, at this time, there is no instructional support technician to help Dr. Cochran in his labs in Comparative Veterinary Anatomy & Physiology I & II on Mondays. We have hired a veterinary technician to help the instructional support technician, but we are not paying this individual a wage consistent with what veterinary technicians are earning in the field. Due to her other job, this individual is only able to work on Tuesdays and Thursdays, the two days of the week the program has the most labs in both first and second year classes, and where we need the most help. This individual has also helped the instructional support technician tremendously. What is needed is a permanently funded instructional support technician position for an absolute minimum of 24 hours per week (3 day per week, Monday, Tuesday, and Thursday). The 1998 Report of Evaluation by the AVMA-CVTEA, stated as a Major Recommendation the following (See Appendix A, page 27): "5. A high priority be placed on acquiring additional staff to assure that the Program's veterinary technician is effectively utilized, in accordance with her job description." We addressed this issue in the past by the addition of the Farm Manager, Terry Lookabill, as part of the Veterinary Technology Program staff. The budget reflects this assignment. In addition, we have used part-time student help, and finally this year, we added a part-time graduate veterinary technician. Mr. Lookabill has helped reduce some of the workload at the farm and does participate in approximately half of the labs in VT 121, Basic Animal Science, VT 102, Animal Nursing and Restraint, and VT 203, Large Animal Diseases & Procedures. We have just begun to address this recommendation in the spirit in which it was written. Only this year, with the addition of the graduate veterinary technician, Marilee Muzatko, have we really started to provide the kind of help in needed in the labs and to support the amount of work required to run the program. Still, we have one day, Mondays, left uncovered, and as mentioned previously, the hourly wage paid to the graduate technician is inadequate. We are counseling our graduates (based on current data) that they are worth an absolute minimum of $12.00 per hours plus benefits, yet the college is paying our part-time graduate technician only $8.00/hr. The AVMA will most likely take a close look at this issue in our February, 2005 site visitation since it was expressed as a Major Recommendation in the last accreditation evaluation.
3. More equipment. Although our equipment is good and up-to-date, there are some areas in which more equipment would make us better. We would like to have 2 more pulse oximeters (of different types than we now have to represent the

variety of types currently used in practices), an Idexx blood cell counter (they are $18,000 retail, we might be able to cut the cost in half by getting a demo machine at a discount through the company – the company representative is on our advisory committee), a dental x-ray machine, and a blood pressure monitor. These are the big priced items we need.

4. A second full-time veterinarian – this would decrease the reliance on part-time adjunct faculty as the sole source of replacing sick or absent faculty and permit, once a new kennel is built, to increase the number of students.
5. As the only Veterinary Technology Program in the state, we are the main source of graduate veterinary technicians and the only college that can educate the state's citizen-taxpayers in the career of veterinary technology. Since there are 3-4 jobs per graduate in this state, we are not fulfilling our obligation to provide a sufficient workforce for the profession. Likewise, by accepting only 25 applicants with 60-80 qualified applicants per year, we are not fulfilling our obligation to educate those taxpaying individuals that want a career in veterinary technology. In essence, we are failing to respond to the community needs. A Minor Recommendation in the 1998 AVMA Report of Evaluation stated "1. The potential benefits of Program expansion be assessed."

The following is the Vision Statement from the 1992 Program Review to the question posed: "Project the program, plans, staff needs, and resources of the unit for the next five years."

1. Hire another full-time faculty veterinarian. A criticism of the program during accreditation was the instability in the adjunct faculty staffing; hiring another instructional veterinarian would eliminate this problem. *Has not been done.*
2. Increase the use of computers in the educational part of the laboratories. *Has been partially done, we use the "Cornerstone Veterinary Office" program to teach office procedures in VT 103, Animal Health Record Systems. A computer is planned to be placed in the lab room in the new Veterinary Technology area to input animal records.*
   a. Create a computer lab and resource room in the Veterinary Technology building area. *Although requested and desired, there was not sufficient space to permit this addition in the new facility. In prioritizing space, this was not high.*
3. Job (course) share instructional duties with the 2 full-time veterinarians. *Without 2 full-time veterinarians this cannot be done.*
4. Continue to acquire state-of-the-art equipment for the program. *This has been done.*
5. Continue to purchase books, audio-visual materials and aids, and computer programs for use in class demonstrations and for use by the students. *We have acquired many new books and the Cornerstone Veterinary Office software. We have not acquired many new audio-visual programs though, this is because for our purpose they don't exist, which is why Dr. Fletcher is making her own.*

6. To put all medical records of the program's animals the computer for students to input. *A stated in #2 above, this is planned.*
7. To correct the problems in the physical facilities listed previously or have another facility built for the program. *Many of the problems were corrected, but some could not be due to structure and location, therefore a new facility was designed and approved for construction.*

Input by Dolores Galindo:

We have an outstanding curriculum. We generally have outstanding students. We have excellent involvement in the community and take pride in the care we give our animals. Money is always an issue, but I think we need better animal facilities, another full-time staff member and improved teaching styles.

Input by Dr. Bruce Hopman:

Strengths: A heavy emphasis on science so that no matter what the student will face, they have the critical skills to reason solutions to problems. They also have the skills to achieve true lifetime learning.

Improvement: We did to strengthen our resolve to not let substandard students pass class work and we need to find solutions to attendance issues. We need to work on our student's professionalism a bit. We also must address transfer of credits earned so our graduates can empower themselves to attain advanced degrees if they wish.

Input by Dr. Fletcher:

The Program is very strong in preparing students for all aspects of small animal private practice. A few areas in which the Program could use improvement:

- Greater exposure to large animal husbandry and handling skills (although our program, with its own horse and access to the PCC Farm, offers more in hands-on large animal skills than many other veterinary technician programs).
- Greater exposure to veterinary technician careers beyond the "traditional" small animal private practice.
- More personal accountability on the part of the student to demonstrate hands-on mastery of technical skills.

B) Given the above analysis and other findings of the SACC in this review process, prepare a set of recommendations that cover areas such as curriculum and professional development, recruitment and retention of students, obtaining needed resources, and being responsive to community needs.

The recommendations are (in chronological order to be accomplished):

1. Hire a part or full-time veterinary technician/instructional support technician.
2. Obtain a grant to build a new kennel facility.
3. Build a new kennel facility for both dogs and cats. The program is working on a grant for this purpose, so we are doing our part. The question is how the college will integrate its needs, in terms of putting in a sewer line and replacing the house currently occupied by the farm manager, with the needs of the program (a location for the new kennel facility).
4. Obtain a grant to increase the equipment need to accommodate an increased number of students and purchase other pieces of equipment the program desires.
5. Increase the program's acceptance to 40 students. We would want 36 students in the second year class in an expanded program. To effectively run anesthesiology, surgical assisting, and radiography labs we need 12 students per lab. Therefore, if we ran 3 lab sections per week, this would be 12 students per lab, totaling 36 students. With 25-28 students we are experiencing a loss of 2-3 students in the first year, with 40 students, a loss of 4 students in the first year would be optimistic, especially considering that we would be going deeper into the list of qualified applicants. As it is now we are taking the very best, so with taking 40 students, a drop rate of four in the first year would be realistic.
6. Hire a second full-time veterinarian.
   The current thought is that the program would have to double in size before we could justify the hiring of a second full-time veterinarian. The logic is that the FTE that the program currently has does not support such a hire. The program submits that going to 40 students (rather than 48 to 50) would:
   a. Produce sufficient FTE to support a second full-time faculty
   b. Continue to keep the success the program has enjoyed in terms of per cent graduating, high scores on the VTNE, high employer satisfaction, and to fulfill the expectations and goals of the graduates
   c. Not dilute the pool of applicants so as to retain a consistently high number of qualified applicants per year
   d. Provide an increased number of graduates to meet the continued need of the veterinary community for certified veterinary technicians
   e. Not require a separate room for lectures. The 40 students would fit in the veterinary technology main classroom in the new facility. Also, the number in lecture would be more manageable for faculty. A study was done a number of years ago that stated that the first year veterinary technology textbook was the most difficult (based on the level of difficulty of the words used in the text) in the college when compared to all other professional/technical programs. This textbook, *Clinical Textbook for Veterinary Technicians*, is in its 5th edition and has gotten more inclusive and more difficult. This illustrates the level of difficulty of the material being taught. Veterinary Technology encompasses the professions of nursing, radiography and ultrasound, clinical laboratory, anesthesiology, dental assistance, surgical assistance, and office procedure/receptionist, all of which are separate professions in human medicine. Veterinary Technology does not fall short of the level of education from their human counter parts, instead we go directly into the heart of the subject matter

and expect students to learn all there is to know from lectures, reading assignments, and video tapes. As an example, there is little difference in the education to teach human radiography vs. veterinary radiography; each must know the safety aspects, the physics of radiography, patient positioning, and principles of ultrasound. In addition, veterinary radiographers must know positioning for all species and for dental radiographs as well, which is not taught in a human radiography program.

f. Allow for three sections of lab rather than four. Having three labs, each with 12 students, in the second year class is a manageable number, thus we would have three groups of four students each in the radiography course, and four groups with 3 students each in the anesthesiology lab. In the first year courses, there would be 2 labs with 20 students each, rather than the current one lab with 25 students; again a more manageable number.
g. Not overuse the animals. If we double our number of dogs and cats, 20 dogs and 20 cats, that would be one per student. Currently, we have 25 students and 20 dogs and cats. In the proposed situation, the ratio of animals to students would be improved.

The above proposal enables the program to increase the number of students without having to alter the courses in terms of lectures, labs, or lecture/labs per week. Thus, the curriculum as listed in the catalog would not change. The change would be in the scheduling and instructor assignments to stay within the faculty contract agreement for faculty FTE. The proposal also addresses the concern regarding recruitment and retention of students, how to obtain needed resources, and being responsive to community needs.

With regard to meeting community needs, the following is the input by the adjunct faculty:

Dolores Galindo: We are very involved in the community. The veterinary technology club does almost all of this work. The vet. tech. Club is made up of students.

Dr. Hopman: The most important issue we are facing is the short working life span of our graduates. The vet. tech. community is hemorrhaging. Perhaps one way to address this is to help form a state Vet – Tech organization that fosters community and encourages staying in the field. Finding ways for vet. techs. to advance in the field (and increase income) is also essential to this goal.

Dr. Fletcher: Through the Veterinary Technician Club, students are quite responsive to community needs. In the past several years, students have organized wellness and vaccination clinics for the pets of homeless persons, micro-chipping drives, fund-raisers for K-9 police bullet-proof vests, hosting public education booths at animal-related events in Portland (such as Doggie Dash), and many other events. Program

faculty provides support, guidance, and expertise where necessary to help the students attain their goals.

The E-mail Question project held annually in VT 103 also responds to community need for answers to animal health care questions. Every year, the students in this class field between 60 and 80 questions submitted by the PCC community.

We are not responsive to community need in that the Program itself (as separate from the Veterinary Technician Club) does not engage in outreach activities to the public. Possible remedies to this might include having students and/or faculty speak at elementary, middle and high schools about animal health care and the veterinary technology profession; expanding the VT 103 class project (which takes place only one term out of the year) to a year-round service run by all Program students; and perhaps holding special educational events in animal health, animal behavior, or other related topics that are open to the PCC community and/or the public at large.

Regarding curriculum and professional development changes, recruitment and retention of students, and obtaining needed resources; the following is the input by adjunct faculty:

Dolores Galindo: We should require a certain amount of professional development activities per year for all staff members. I don't think we have to spend much time with recruitment and retention of students because it is not a problem, at least not at this point in time. Obtaining needed resources can be achieved as long as there is someone will to do the work including the follow-up. We have done a lot of this successfully.

Dr. Hopman:

1. I think that certain prerequisite courses should have an assigned value and scored as a separate category for admission. The goal being to show a student can indeed do the required work. It would also allow students who don't get in to take specific courses to improve their admission score. For example: Chemistry (real chemistry) , Math 95 and above, Any core science like Physics or Biology 211 or higher, Specific animal related courses (from OSU), Microbiology etc.
2. Summer term 1st year- Micro should be taken as a perquisite and any equivalent micro. course should be allowed to transfer. Lets face it, with more time in a non-accelerated course, a more thorough and comprehensive knowledge of what's important in micro can be obtained. The animal specific info. is already taught in other courses. The summer term would also be less stressful for the students allowing them to concentrate on their other two important courses. This should also free up a few credits in case we need to add a course in the future such as alternative medicine etc.
3. It is getting harder and harder to get donations, perhaps we should try to get Vet. Hospitals to donate a little cash each year toward professional development of

students (i.e. equipment etc.) This will provide a benefit back to the clinics in short order. This money should only be used for direct teaching of students.

4. The college needs to realize our plate is full. We cannot add further duties without another classified employee. We should make this clear to the college. This program has the potential to implode if this is not addressed.

Dr. Fletcher: I am currently exploring the development and utilization of educational videos to enhance learning in one of my courses (VT 102, Animal Nursing and Restraint). By having videos available for students to view prior to their laboratory sessions, the goal is to free up laboratory time from instructor demonstration. That time will then be available for students to gain additional hands-on practice in the skills they are learning. It will also free up the instructor(s) for additional supervision and practical testing, thereby increasing student accountability in the mastery of the required skills. If results are favorable, then I will explore introducing videos in the other laboratory classes I teach. Exploration of currently available technology to enhance learning is something that will give our curriculum greater impact and flexibility. From videos viewed in the library, we can expand to making Web-based clips available for download at home. Much greater utilization of the Internet is certainly possible and desirable to increase the educational resources available to our students.

My other recommendation for curriculum development is simply that course curriculum be kept frequently updated to reflect societal and veterinary profession changes. For example, as computer skills among students have increased over the past several years (due to increasing PC ownership/use), the ten computer laboratories in VT 103 became unnecessary. We have cut the computer laboratories to five, concentrating on computer applications in veterinary medicine. The other five laboratory sessions are now devoted to development of communication skills. Changes of this type are essential in keeping our curriculum relevant.

Increasing the public profile of the Veterinary Technology Program would enhance recruitment of students. This could be accomplished with the community outreach ideas outlined above, or similar. The Program already has an excellent student retention rate. Development of the three-year curriculum by Dr. Cochran has been greatly beneficial in retaining students who have difficulties with the academic rigors of the Program. When students do drop out, it seems that most do so because they become overwhelmed not only academically but also personally. Increasing counseling opportunities within the PCC system may be helpful.

Perhaps a greater problem than student retention is retention of graduates in the field. While some of the reasons that veterinary technicians choose to leave the profession is beyond our direct control (i.e., long working hours, low wages), we can over the long term improve working conditions by: educating employing veterinarians to fully utilize the skills and expertise of graduate CVT's; promoting the kind of high-quality veterinary care that translates into higher wages for our graduates; and promoting in

our students the self-esteem and self-care necessary to avoid professional burnout.

In obtaining necessary resources, we should raise awareness among our alumni regarding the needs of the Program. A strong Alumni Association would not only be a potential avenue of resources and mentoring, but would also speak to others about the value that our own graduates place upon the Program. Other potential resources (such as state and local veterinary associations, the state legislature, and others) may be more likely to support our Program if they see strong, organized support from Program alumni.

And additionally for professional technical programs:

5) To ensure that curriculum keeps pace with changing industry demands and continues to successfully prepare students to enter into a career field.

A) Evaluate the impact the advisory committee has on curriculum and instructional methods.

In our advisory committee meetings, the program discusses the concerns we have regarding curriculum and instructional methods. One year prior to each AVMA-CVTEA program evaluation and site visit, the advisory committee evaluates each CCOG and gives recommendations on changes necessary.

B) Review job placement statistics of students in your program over the last three years, including salary information where available.

The results of *Veterinary Technician Employer Survey* and *Veterinary Technician Graduate Survey* are on pages 3-12 of Appendix D. The mean wage of respondents on the employer survey was $12.58, and $12.63 for the graduate's survey. In addition, the surveys also listed additional benefits. On the employer survey 84% gave medical benefits and 65% of the graduates stated they received medical benefits. Other benefits received were eye care, dental care, retirement, professional dues, continuing education, and profit sharing. In Appendix F, a survey of graduates by a PCC study showed that 100% of the graduates were employed. This is consistent with program's data, which over the years has found that most students that desire work can find it. Rarely, we have had a graduate that has had trouble retaining a job. It was usually a problem with personality conflicts or lack of work ethic as reported rather than lack of skill as reported to us.

C) Analyze the program learning outcomes, competencies, and skills as compared to the business and industry needs today and in the immediate future.

As stated previously the program learning outcomes are:

The desired Outcomes of the Veterinary Technology Program:

1. Graduates should be able to pass the National Veterinary Technician Board Examination.
2. Graduates should be able to function as competent veterinary technicians in their chosen area of veterinary medicine, whether it be veterinary practice, research, laboratory, or industry. They should be able to think, calculate, and make the decisions allowed them by the Veterinary Practice Act of the State in which they are employed.
3. Graduates should be able to work as effective members of the animal health care team in their chosen area of veterinary medicine. This involves the ability to communicate effectively (written and orally), work together with other individuals, and be reliable and responsible. They should recognize that the individuals they interact with on a daily basis, whether it be a co-worker, employer, or pet owner, has uniquely individual needs and behaviors based on their backgrounds and perspectives on life.
4. Graduates should have an awareness of their responsibility as part of the animal health care industry in the prevention of disease in both humans and animals, as advocates for animals and their health, and education of the public on animal health care issues.
5. Graduates should understand that they are life-long learners, and continuing education is fundamental to their ability to keep up with the advances in veterinary medicine and related technologies.

In order to fulfill the above outcomes, the Veterinary Technology Program has developed the below listed set of goals and standards:

1. To meet the requirements by the AVMA-CVTEA accreditation standards, and continue to maintain full accreditation status. This goal alone enables the program to meet the competencies and skills as compared to the business and industry needs today and in the immediate future. To have the status of full accreditation by the AVMA-CVTEA means that we have met these competencies and skill, for the requirement for accreditation are based on the standard required by the profession (the industry).
2. To provide a high quality education for students.
    a. To examine the course content and outcomes guides every three years to insure that the material being taught is both relevant and up-to-date.
    b. To perform regular evaluations on all instructors to assess that the content and evaluation techniques meet the standards expressed in the course content and outcome guide and the delivery of information is effective and informative.
    c. To obtain and utilize equipment that is standard to the industry of veterinary medicine and used in clinical practice.
    d. To develop and maintain a cooperative education program with veterinary practices and institutions that are representative of the current level of veterinary practice in this area, and provide a quality educational experience for the student.

3. To employ instructors that are qualified, demonstrate ability to teach effectively, and have the desire and interest to teach at the veterinary technology level.
   a. To require an annual professional development plan from each instructor and insure its implementation.
4. To accept into the program qualified students that have expressed the proper desire to be employed or work as a veterinary technician in their chosen area of veterinary medicine.
5. To accept, maintain, and graduate the maximum number of students the program can effectively manage and educate.
6. To have an advisory committee that is committed to active participation in order to maintain or improve the program as needed.
7. To maintain a quality relationship with the industry, specifically veterinary practices and institutions.

D) Forecast future employment opportunities for students in your program.

There is no foreseeable change in employment opportunities for students. The need for veterinary technicians is greater than it has ever been. Veterinarians are adamant with regards to our need to increase the numbers of graduates. This is relayed to Dr. Cochran in almost every meeting he attends.

E) Analyze any barriers to degree or certificate completion that your students face and describe the main reasons students leave your program before program completion.

The following, based on exit interviews, are the reasons students leave the program:

1. They decided to change professions and/or seek a bachelor's degree.
2. Their husbands are relocating
3. The program is harder than they imagined
4. The pay is too low
5. Illness
6. Academic difficulties

The main barrier to completing a degree in addition to those stated above is that students do not have sufficient background in the sciences to do well in the veterinary technology core courses. Therefore, the students find the program too difficult and/or cannot do well and end up flunking out. Having students take chemistry, biology, and mathematics prior to entering the program would be the ideal situation. We have not made this a requirement yet. This is because of the pay that veterinary technicians receive. It is sufficient to compensate for a two-year degree but not for a Three-year degree. However, it has become clear that to gain sufficient points to enter the program some college course work is required. So, in effect, the program has inadvertently required almost a year of college to gain admission. Dr. Hopman suggested in 4B, regarding his comments on curriculum and professional development

changes, that we should have an assigned value for certain prerequisite courses and they should be scored as a separate category for admission. The goal being to show a student can indeed do the required work. It would also allow students who don't get in to take specific courses to improve their admission score. Dr. Hopman suggests added points for courses such as: chemistry , MTH 95 and above, any core sciences like physics or BI 211 or higher, or specific animal related courses (from OSU), microbiology, etc. The program should give serious consideration to this suggestion. It is a topic to be discussed in our next advisory committee meeting.

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