

Los Angeles Pierce College Pre-Veterinary Handbook



October 2018

**THE PIERCE COLLEGE
PRE-VETERINARY
HANDBOOK**

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(updated October 2018)

PREFACE

The purpose of this handbook is to help prepare both the high school student and beginning college student in meeting the entrance requirements for veterinary school. Because we are located in the State of California, our main emphasis has been to prepare the student for the articulated agreement between Pierce College and the University of California at Davis. Pierce has been very fortunate in obtaining this agreement as well as having our graduates and transfer students accepted at 27 different veterinary colleges. We currently have 278 of our former students either practicing veterinary medicine or are enrolled in veterinary school as this handbook is being published. In 2013, the Regents of the University of California changed the requirements for admission to all graduate schools requiring completion of a Bachelor's degree prior to matriculation. **None of the remaining 29 AVMA accredited colleges of Veterinary Medicine have this requirement.**

The information contained within this handbook is a summary of the requirements and suggestions on "how to make it." You (the student) need to be diligent in meeting with me at least twice a semester to make sure that your goals are being met by your course work, work experience and level of achievement. You should make it a point to participate in the pre-veterinary club each and every semester and maintain a working relationship with a veterinarian in practice during your entire tenure at Pierce. Your participation in the [pre-veterinary club](#) will demonstrate your dedication to helping others in your profession, seeking a life away from your books but still connected to your profession, will introduce you to others struggling to be accepted in your future vocation, will introduce you to former students who have made it, will allow you to have a fun time during your stay at Pierce College. Your obtaining your **associate's degree in pre-veterinary medicine** will demonstrate your ability to complete a set of tasks and reach one goal on your eventual acceptance into graduate school.

Students considering a career in veterinary medicine should select courses, extra-curricular activities and work experience that will provide a sound foundation in the biological, physical and animal sciences. For those still in high school, you should be taking as many math and science courses (Chemistry, Physics, Biology, and Animal Agriculture) as your schedule and counselor permit. Your educational program should lead to the development of intellectual maturity, efficient study habits, and effective powers of reasoning. Discipline in study is essential. Proficiency in accurate, rapid, interpretive reading should be mastered. Methods of observation and collection of data, evaluation, deduction, and interpretation of findings are equally important tools to become proficient in. Proficiency in typing increases the speed and accuracy of communication and, along with being able to use the computer (word processing, the Internet) will aid you in both veterinary school and in your professional work. Because of the highly competitive application process, not every qualified student will be admitted to veterinary school. Use this handbook to find methods of increasing your odds, for preparing for a very exciting career in animal medicine.

Obstacles don't have to stop you.

If you run into a wall, don't turn around and give up.

Figure out how to climb it, go through it, or work around it.

--- Michael Jordan

Dr. L. S. Shapiro
October 2018

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ACADEMIC REQUIREMENTS

Although you do NOT need to complete a bachelor's degree prior to applying to veterinary school, starting with the class of 2015 students applying for veterinary school at the University of California, Davis, will be required to complete all required courses prior to submitting their application. Pierce students who complete at least 75 semester units, as outlined below, maintain a B+ GPA, obtain their **A.S. degree in pre-veterinary medicine**, and earn a high score on the GRE exam, obtain hands-on experience with a variety of animals (food producing, companion, research) have an excellent opportunity in competing for admission into the school of veterinary medicine. Three separate GPA's are evaluated; your overall GPA, last 45 semester units and your overall required science GPA. In all cases, you want to aim for the 3.7 level and above to be seriously considered. Work less hours, obtain a tutor, and skip the partying until you are sure you can achieve this goal. Whatever you do, **DO NOT blame your failure** on a bad teacher, bad upbringing or bad hair day. **Take responsibility** for your weaknesses and then work on them. Please come and see me if you should need guidance in this direction, always maintain that positive, "I'm going to succeed" and "I'm going to work harder at it" attitude.

Please note that not all the universities require all the courses recommended in this handbook. However, you will want to qualify for several universities to make yourself more marketable when applying to graduate school. By completing the courses listed and maintaining excellent and not just good grades, you increase your chances in being considered a worthy candidate for graduate school.

Pierce College Requirements for Pre-Veterinary Majors (AS Degree)

Animal Science Course Requirements

Anml Sci 120 – Applied Animal Ethics - 3
Anml Sci 181A – Veterinary Field Work - 1
Anml Sc 401 Orientation to Veterinary Sciences – 1
Anml Sc 501 Principles of Animal Sciences – 3
Anml Sc 505 Animal Nutrition – 3
Anml Sc 506 Urban Farm Animal Health Tech. - 2
Anml Sc 507 – Small Ruminant Mgt. -2
Anml Sc 511 Animal Anatomy and Physiology – 3
Anml Sc 512 Anatomy laboratory – 1
Anml Sc 596 Animal Enterprise Projects – 1

Required Science Courses

Biology 6 – 5
Biology 7 – 5
Physiology 1 – 4
Physics 6- 4
Physics 7 – 4
General Chemistry 101 – 5
General Chemistry 102 – 5
Organic Chemistry 211 – 5
Biochemistry 221 – 5
Math 227 – Statistics – 4
*Not required for Pierce's degree, however, some graduate schools require
Chemistry 212 – Organic Chemistry 2 – 5 units
Microbiology 1 – 5 units*

General Education Requirements

English 101 – 3
English 102 OR 103 – 3
Health - 1
History or Poli Sci – 3
Communications (such as Speech) - 3
Please check the current catalogue for any additional general education requirements

Most Veterinary Schools also require a genetics course (upper division) prior to applying

In addition to the above courses, UC Davis, and most other colleges require one additional course that must be taken at a four-year institution (CSUN or UCLA are the recommended universities for the remaining course work):

Genetics-Principles of Genetics (4 units)

Senate Bills 1914 and 361 allow Pierce College students to take one course per term at a California State University (space available basis) without formal admission and without assessment of additional course fees. In other words, you can take the genetics at CSUN while you are a full time student at Pierce. Please let me know if you need assistance in regards to this matter. During these tough economic times students may need to take an online course in Genetics (if there is no room in the concurrent enrollment program at the CSU). UC Davis accepts the following online genetics course from UC Berkeley (there are additional online courses at ISU and KSU that may also be accepted):

Genetics

X143 (3 semester units in Molecular and Cell Biology)

45 hours CE credit: BRN provider #00226

This course integrates the most important concepts in classical and molecular genetics into an overall picture of what a gene is, how it functions, how it may be altered, and how it is inherited.

You learn about the molecular basis of gene function and mutation, Mendelian genetics, transmission systems, regulation of cellular processes, developmental genetics, cytoplasmic inheritance, population genetics, and multifactorial inheritance. Also covered are recent advances in biotechnology that have genetic implications, including the Human Genome Project, and advances in genetic engineering technology.

Prerequisite: A year of college-level general biology for majors.

Click below for sections, start dates, locations, instructors, and to enroll.

<http://www.unex.berkeley.edu/cat/course358.html#>

Ross University, St. George University, St. Mathews and Western University will accept Pierce College's biology 110 course as meeting your genetics requirement.

Not every student will require the same course work or require the same sequence in courses. Depending on your previous experience, your GPA, your success in a particular class, I may direct you to go in a different direction than another student. Please confer with me each semester as to the particular sequence of classes you are enrolling in. The following Experiential Courses and Recommend Courses will vary depending on the aforementioned and the school you are applying to.

Pierce Pre-Veterinary **Experiential Training** (to provide hands-on experience under the direction of a veterinarian/RVT)

ANML SC 410/411 - Animal Nursing/Laboratory 3
ANML SC 420/421 - Clin Procedures in Ani Care I/Lab 3
ANML SC 430/431 - Vet. Clin Path/Lab 3
ANML SC 435/436 - Vet Radiography/Lab 3
ANML SC 441 – Large Animal Nursing 2
ANML SC 507- Small Ruminant Management 2
ANML SC 515/516 – Artificial Insemination lecture/lab 3
ANML SC 520/521 - Beef Production
ANML SC 530/531 – Poultry Production 4
ANML SC 535/537 - Sheep Production 4
ANML SC 603 - Equine Mgt. Techniques 2
ANML SC 650 - Equine Health and First Aid 2
ANML SC 470 – Laboratory Animal Care 3

Electives (optional)

The following electives may be required by some of the veterinary colleges in the United States. The more course work you complete within your field, the better the chances for admission (so long as you keep up your grades).

ANML SC 450 Intro to Anim Facilitated Therapy 1
ANML SC 460 First Aid for Companion Animals 2
ANML SC 466 - Avian Care and Husbandry 1
ANML SC 601 - Horse Production 3
ANML SC 602 - Horse Husbandry 3
Math 261 - Calculus I 5

For those students who are ONLY interested in **Western University School of Veterinary Medicine** please follow these listed articulations from Western U.

College: Los Angeles Pierce College - CA Department: VetMed	
Course Name	Prerequisite
Biochemistry	CHEM 221
Biological and Life Sciences	NOT ACCEPTED - Lower Division: BIOL 3, 6, 7, 10, 11, 12, 18; PHYSIOL 8, 9;
Biological and Life Sciences	Upper Division: ANSC 430/431 (must take lab to use), 501, 505, 510, 511/512, 515/516 (must take lab to use); PHYSIOL 1
English	ENG 101, 102, 103, 127; PHILOS 5
Genetics	BIOL 110 (formerly BIOL 46)
Humanities/Social Science	Any Non-Science Courses are Acceptable (Examples include: Anthropology, Psychology, Sociology, Art, Foreign Language, History, Philosophy, Religion, Drama, Music, etc.)
Microbiology	MICRO 1, 20
Organic Chemistry	CHEM 211, 212 (labs are incl)
Physics	PHYS 6 & 7(Labs are incl); 66 & 67 (PREFERRED - Labs are incl)
Physiology	ANSC 511; PHYSIOL 1
Statistics	MATH 227; STATISTICS 1,7
<i>Listed prerequisites are subject to change without prior notice</i>	

Pierce College Veterinary program, however, recommends that you prepare for entry into more than one school and meet more than the minimum qualifications to be more competitive when applying.

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GRADES AND GRADES

GRADES and GRADES - You will hear from some veterinarians that grades are not all that important. Others will tell you that you need straight A's. The real answer is somewhere in between. You do need good grades, as previously outlined. If you receive one "C" - it is not the end of the world. You can still make it. If your average GPA is in the "C" range, you need to buckle down and change that - immediately or perhaps look at an alternative career in animal medicine. I will be happy to guide you in that direction, as well. Pierce has an excellent Registered Veterinary Technician program which does not require as stringent GPA and course work.

Before taking the GRE exam, students should complete as many of the science courses as possible. There are three major sections to this exam:

General Test - this section measures one's verbal, quantitative, and analytical ability. It is approximately 3 1/2 hours long.

CSUN offers preparatory courses for taking the GRE. Please check with me at least six months in advance for the time of the course and the exam. You may also want to contact the Stanley Kaplan GRE Review Course at 204 "F" Street, Davis, CA (530) 753-4800 for preparation manuals. The ETS Practicing to Take the GRE and Harcourt Brace Javonovich Manuals are also excellent review sources. Examples of old GRE test questions are available through the Educational Testing Service (ETS) for a minimal charge. Write or call ETS for more information. (P.O. Box 23470, Oakland, 946230470; [415]653-5400). Exams are offered twice a year. For an extra fee you can take the GRE by Special Administration Service test centers on dates other than those provided on National Administration test dates. An applicant with a marginal GPA can really strengthen his/her application with an excellent GRE score. If you do not do well the first time you take the GRE take it again. The admissions committee only looks at your most recent scores. Allow enough time to take it a second time, if need be.

Veterinary and Animal Related Experience

All pre-veterinary students should acquire a diverse (food animal, small animal, poultry, exotics, equine, research) experience in the veterinary medical field prior to applying to veterinary school. The purpose of this is four-fold:

- 1) It demonstrates a sincere desire by the student to a career in veterinary medicine
- 2) It allows the student to develop a realistic understanding of the veterinary profession.
- 3) This understanding will greatly assist the student in the narrative portion of the application.
- 4) It helps the student define his/her goals and objectives within the profession.

The type and degree of experience required varies from college to college and varies due to the background of the applicant. Applicants born and raised on commercial animal farms probably received a tremendous hands-on experience at home with large animals and could therefore concentrate more on small and research animal experience. In any case, experience in a variety of animal type practices (including research) is generally recommended. Even though your work experience is important, you will NOT be considered a worthy candidate without proper grades. **Do NOT let your grades suffer** because you are working too many hours. Save your long work experience hours for summer and other school breaks. You can always make up missed hours of experience. You cannot make up four years of poor performance (grades). **STUDY!**

What are Your Chances of Being Accepted?

From 1997 - 2014, one hundred and fifty-seven Pierce College students applied to veterinary school; one hundred and forty-one were accepted. In 2015, 20 Pierce students applied. Of these 18 were accepted and two were placed on waiting or alternate lists. And in 2016, nine out of ten Pierce applicants were admitted into one or more graduate schools. These were exceptionally good years for our program. We hope to continue this success and hope you will understand when we demand excellence in performance and many hours of work. We hope to prepare you for the marathon (veterinary school). You cannot expect to be prepared for a marathon by running hundred-yard dashes (taking one class at a time). On the same thought, if you over extend yourself by taking too many classes (try and limit your class load to 16-18 units/term) you will be worn out by the time you apply or unable to maintain that high GPA that will make you shine on your application.

At UC Davis evaluation of applicants are based on: Overall GPA = 11%, science GPA = 5%, last 45 units (taken in two years or less time) GPA = 12% or a total of 28%. GRE scores (general aptitude test) = another 28%. 20% = the interview. 6% = references. 18% = an essay written about why the student wants to be a veterinarian, veterinary experience, understanding of the veterinary profession, extracurricular activities (such as the pre-veterinary club). Note: These percentages may vary slightly year to year.

Pierce students who have been accepted into veterinary school have generally **exceeded the following scores:**

GPA last two years should average 3.7 or greater.

GPA overall should average 3.5 or greater

GPA for science overall should average 3.5 or greater.

GRE scores should average >80% for verbal, quantitative and analytical

Please complete the following information sheets throughout your stay at Pierce College. They are meant to guide you along the way and to demonstrate what will be required of you when you ask for a letter of recommendation to a school of veterinary medicine. Good luck and never give up! If your heart, your motivation and your preparations are sincere, **YOU WILL MAKE IT!**

**Preparing for your Interview:
MMI Format at UC Davis started in 2012**

As you prepare for the interview we would like to provide you with some information.

Interviews will be conducted using the Multiple Mini Interview (MMI) technique. The MMI does not test knowledge of veterinary medicine but rather personal attributes, qualities or skills considered important to the practice of veterinary medicine. These include communication, ability to work as part of a team, ethical and critical decision-making abilities, and behaviors such as empathy, honesty and reliability.

It is very important for candidates to understand that there are no right or wrong answers to the questions posed of the scenarios.

The MMI is a series of short, structured interviews used to assess personal traits/qualities. Each mini interview provides a candidate with three minutes to read a scenario and mentally prepare before entering the interview room. Upon entering, the candidate has seven minutes of dialogue with one interviewer/rater (or, in some cases, a third party as the interviewer/rater observes). Each scenario may have 3-4 questions and the candidate will be told how many questions there are at the beginning. There are eight stations and the interview will take a total of one hour and 20 minutes.

Please arrive at least 1 hour prior to your interview start time to allow for registration, photograph and a light snack. Please bring a photo ID with you to registration.

After the MMI, we will provide lunch, presentations on our school (overview, curriculum, financial aid, and use of computers), and tours of the facilities.

Other Universities still have traditional interviews based on your veterinary experiences.

Make sure you practice answering commonly asked questions. You must demonstrate that you have at least thought about what you are being asked. Do not lie or make up answers to please your interview committee. Look on line at previously asked questions to get an idea of what is expected of you during the interview.

Remember the old farmer's parable:

This parable is told of a farmer who owned an old mule. The mule fell into the farmer's well. The farmer heard the mule praying -or-whatever mules do when they fall into wells. After carefully assessing the situation, the farmer sympathized with the mule, but decided that neither the mule nor the well was worth the trouble of saving.

Instead, he called his neighbors together and told them what had happened . . . and enlisted them to help haul dirt to bury the old mule in the well and put him out of his misery. Initially, the old mule was hysterical! But as the farmer and his neighbors continued shoveling and the dirt hit his back a thought struck him. It suddenly dawned on him that every time a shovel load of dirt landed on his back he should shake it off and step up!

This he did, blow after blow. "Shake it off and step up . . . shake it off and step up . . . shake it off and step up!" He repeated to encourage himself. No matter how painful the blows, or how distressing the situation seemed the old mule fought "panic" and just kept right on shaking it off and stepping up!!!

It wasn't long before the old mule, battered and exhausted, stepped triumphantly over the wall of that well! What seemed like it would bury him, actually helped him all because of the manner in which he handled his adversity.

That's life! If we face our problems and respond to them positively, and refuse to give in to panic, bitterness, or self-pity . . . The adversities that come along to bury us usually have within them the very real potential to benefit us! **Never be afraid to try something new.** Remember, amateurs built the ark. Professionals built the Titanic! Never be afraid to learn, to work hard, and to try something you are not good at!

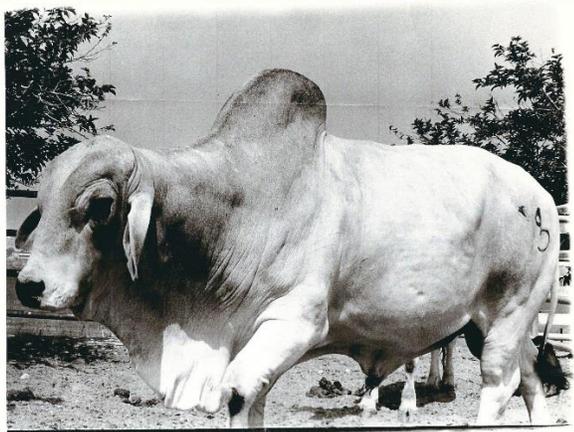
Tribute to and History of Dr. Leland S. Shapiro at L.A. Pierce College

Dr. Shapiro is the grandson of a farm laborer immigrant who milked cows on 92nd street in Watts. His mother grew up in Watts and his father in East Los Angeles. He lived overseas for two years including a year in Eastern Nigeria during the Biafra Civil War.

In 11th grade Dr. Shapiro moved to the San Fernando Valley. He had run cross country at Pierce College in 1968 when the farm had more acres and thousands of additional animals.

In 1971, Dr. Shapiro started working for Pierce College. His first job was as a farm tour guide working with Community Services' "Day on the Farm" program. There he toured 20,000 inner city children on the Pierce's farm, and provided them free lunches (sponsored by McDonalds and Carnation Co). At that time, Pierce had 114 head of dairy cattle, 350 beef cattle, 250 sheep, 250 pigs, 6,000 chickens, a 15-acre orchard and 200 acres of pasture and field crops.

Dr. Shapiro soon acquired additional hours working for the college's farm manager. He worked in the poultry unit, fixed fences, moved irrigation pipes, prepared feed in the college's working feedmill and eventually landed a job at the college dairy. One of his "charges" was to care for Pierce's mascot, Clarence the Brahma Bull (see photo):



Pierce College provided this "inner city kid" an opportunity to learn, with hands-on experience, the workings of a real farm. Dr. Shapiro was in the first animal health technology program at Pierce College under the leadership of Dr. Frank Baugh. Dr. Shapiro eventually transferred to Cal Poly State University in San Luis Obispo. He earned BS degrees in Dairy Science and biology (as a minor) and an MS degree in Agricultural education with mammary physiology as his

research emphasis. He became student herdsman at Cal Poly's foundation dairy unit. He continued with his education earning a PhD in Reproductive Physiology with a declared minor in Agriculture Education from Oregon State University and completed two post-doctoral studies in bioethics (one from the Kennedy Institute of Ethics at Georgetown University and the second from Iowa State)

In 1976, the dairy herdsman at Pierce College broke his leg and the dairy instructor gave a two-week notice. The dean at Pierce College, Frank Baugh asked Dr. Shapiro to take both positions for one semester. He did, fell in love with teaching and working on the farm and stayed for almost 40 additional years. At the beginning, he developed a processing plant through a grant and started producing and marketing Pierce milk in the campus farm store, cafeteria and, in addition, sold Pierce milk in cartons bearing the name "Peter J. Pitchess Honor Rancho."

Dr. Shapiro was also one of three professors who created the Pierce College Farm Walk (1976). This annual event brought in needed funds for the farm and helped educate more than 10,000 visitors to the farm each and every year. In the earlier days, Dr. Shapiro taught "cow milking" on Huell Howser's Saturday morning Agriculture shows. When the Pierce dairy closed in June of 1990 and the Pierce Dairy Science program ended, Dr. Shapiro was challenged by the dean to create a unique Pre-veterinary program to meet the needs of many of Pierce's animal science students. Working with Dean Osborn of UC Davis' School of Veterinary Medicine, Dr. Shapiro created the Pierce Pre-veterinary degree/program with articulation and/or agreements, eventually, sending 278 Pierce students to 23 graduate schools of veterinary medicine. Success rates have averaged greater than 87% of students applying being admitted into at least one graduate school. During Dr. Shapiro's tenure as Department Chair of Agriculture, he solicited and received more than \$350,000 in grants and donations to the department. Grants included a \$150,000 Annenberg Foundation Grant for student labor on the farm, two USDA grants (one to increase Hispanic student numbers in the veterinary and animal science field and one to bring a foreign student from Africa to learn on the Pierce College farm.)

Dr. Shapiro has been a long-time member of the American Dairy Science Association, Dairy Shrine Club, Gamma Sigma Delta Honor Society of Agriculture, and Association of Veterinary Technician Educators, Inc. He is on the Board of Directors for the Society for Veterinary Medical Ethics and the Americans for Medical Progress. Dr. Shapiro was a dairy farmer for almost two decades, holds a California State pasteurizer's license and for 14 years was a certification

instructor for artificial insemination. Dr. Shapiro is a University of California Davis "Mentor of Veterinary Medicine," and the recipient of several local college teaching awards as well as the prestigious National Institute for Staff and Organizational Development Community College Leadership Program (NISOD) Excellence in Teaching Award, in Austin, Texas and professor of the year award at Los Angeles Pierce College. In 2018, Dr. Shapiro was inducted into the Dairy Science Hall of Fame at Cal Poly State University in San Luis Obispo.

Dr. Shapiro has served as a consultant for the college of veterinary medicine at Ross University and has authored 17 books of which six are sold internationally. His last book was written to fund student scholarships at Pierce College. 100% of the proceeds from *Fun Corny Farm and Veterinary Jokes* is donated to the Boggess Memorial Scholarship fund at the Foundation for Pierce College.

On September 8, 2015, Dr. Shapiro retired from Pierce College. He was very proud in being able to leave his program in the capable hands of one of his former students, Dr. Lu Dao (see photo):



PRE-VETERINARY LETTER OF RECOMMENDATION QUESTIONNAIRE

Date _____

Major _____

Full Name: (last name, first)

Local Address: _____ City _____

Zip _____

Local Phone: _____ E-Mail: _____

Entered college in _____ 20 _____ Expect _____ degree in ____ 20 ____

College activities (athletics, publications, **pre-veterinary club**, etc., with average number of hours per week, offices in club held and when):

Freshman year _____

Sophomore year

Junior year

Senior year

Outside work during school year (state nature of work, with average number of hours per week): Freshman year

Sophomore year _____

Junior year

Senior year

Animal care related experience (give nature of position, the organization and location, hours per week, and length of time for each one listed):

Research experience:

Work, travel or other experiences (during the past two summers):

Make sure you have applied for you're A.S. Degree in Pre-Veterinary Medicine prior to asking for this letter of recommendation.

Undergraduate grade point average:

Overall GPA _____

Overall Science GPA _____

Last two years GPA _____

GRE Scores: Verbal _____ **Quantitative** _____ Analytical _____

I expect to apply for admission in September, 20____, to _____
veterinary school or _____ graduate school
(list major if choosing grad. school) _____

Last year attended Pierce, list classes, when taken and grades given by Dr. Shapiro and/or
Dr. Dao _____

Grades earned in Biochemistry and Physiology 1? _____

List Offices held while in the pre-veterinary club _____

Other comments (you may use additional sheets):

For the schools you are applying to please provide me with individual stamped envelopes with each schools name and address typed across the front (or simply apply through VMCAS to complete all the letters on line). Check off the **“waived”** portion of your application. Give me ample time to create a proper letter of recommendation to go along with your application.

Return to:

Dr. Lu Dao, Co-Director
Pre-Veterinary Science Program
daolt@piercecollege.edu

or

Dr. Leland S. Shapiro, Co-Director
Pre-Veterinary Science Program
shapirls@piercecollege.edu