



April, 2009

Volume 2, Issue 1



PATHWAYS

A NEWSLETTER FOR STUDENTS OF
VETERINARY PATHOLOGY

Welcome to PATHways!

Hello and welcome to the first issue of the 2009 PATHways!

We once again have an issue jam-packed with information. Dr. Chris Palgrave and Chris

Koivisto have provided an in depth overview of the PathHeads club and pathology training program at the North Carolina State University College of Veterinary Medicine. This "Focus on our Future" will become a regular feature of PATHways. NCSU CVM started the first official student ACVP chapter so was chosen as our first featured school. We plan on inviting each veterinary school in order of ACVP



student chapter formation, so you can look forward to hearing about the University of Illinois at Urbana-Champaign in the next issue.

Dr. Krista LaPerle provides a great summary of veterinary pathology residencies including what you need to apply and contact information.

We continue our "Career Paths Taken are Not Always Straight" feature (taken from the lunchtime career development seminar given at the 2008 STP Symposium last June) with answers and advice on career changes from Drs. Jack

Harkema, Curtis Colleton and Donna Dambach.

Dr. Stephanie Corn contributed our case report "The Case of the Double negative Domestic Shorthair" which features some interesting and outstanding clinical pathology work.

Thanks to Dr. Mandy Fales-Williams for compiling the "Upcoming Events" .

Have a great summer, and we hope to see many of you at the Society of Toxicologic Pathology meeting in June!

Your editor, Sarah Tannehill-Gregg



**And now
we know
how it
started.....**

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Focus On Our Future.... Showcasing our Veterinary Schools and Pathology Programs

North Carolina State University College of Veterinary Medicine

Dr. Chris Palgrave, Anatomic Pathology Resident

Chris Koivisto, President NC State CVM PathHeads Club

North Carolina State University College of Veterinary Medicine is part of a regional, science-rich community that includes several colleges and universities (including NC State, University of North Carolina and Duke University), the State Veterinary Diagnostic Laboratory, the National Institute of Environmental Health Sciences, Environmental Protection Agency and the Research Triangle Park which is home to more than 170 research and development companies. This region has one of the highest densities of veterinary pathologists in the country and provides numerous internship and externship opportunities for veterinary students and residents.

The NC State CVM PathHeads Club was formed in 1997 and officially recognized as a student chapter of the ACVP in 2001 (it was the first ACVP student chapter to be recognized, narrowly beating The Ohio State by a week!). A major objective of the club is to introduce students to the diverse career opportunities available to pathologists. The club hosts a minimum of two lunch meetings each semester for the student body; often jointly with other student organizations to emphasize the collaborative nature of pathology. Past speakers have included veterinary pathologists employed in forensics, government, industry, diagnostics, clinical pathology and academia. Regular activities for students include attending resident-run gross and histopathology rounds held weekly and an opportunity to assist with necropsies two Saturdays each month. In addition, students are encouraged to attend the annual ACVP meeting. Funding is typically achieved through private donations and SCAVMA. This past year, four students presented posters at the annual ACVP meet-

ing in San Antonio on research conducted during their summer externships at various facilities within Research Triangle Park. For the last two years, an NCSU student has received an award from the ACVP for best poster in the experimental disease category.

There are currently seven anatomic pathology residents at NC State: Three veterinary teaching hospital funded residents, two residents on NCI (National Cancer Institute, NIH) combined residency/graduate studentship programs, one ACVP/STP coalition resident (funded by sanofi-aventis) and one part-time alternate-route resident. The anatomic pathology residency program primarily revolves around necropsy and surgical biopsy duties. The necropsy caseload is usually 4-6 cases per day (but can be up to 10) and the surgical biopsy caseload is usually around 8-15 cases per day. One resident is assigned to each service for one

week at a time. The pathology service sees a diverse caseload including food, companion, laboratory, aquatic, equine, avian and exotic/zoo animals. In addition to specimens from the CVM teaching hospitals and local referring veterinarians, the pathology service receives specimens from a wide range of institutions including the NC Aquariums, NC Zoo, NC Museum of Natural History and Turtle Rescue Teams. Much emphasis is placed on the integration of pathologic findings with patient history, clinical findings, clinical pathology data, microbiology, immunology, toxicology and other ancillary studies. Whenever possible,

clinicians and students rotating through clinical services are strongly encouraged to visit the necropsy laboratory to discuss their cases with the resident on duty. Residents present the week's most interesting gross cases at necropsy rounds in addition to participating at the weekly histopathology conference. These sessions are well attended by students, clinicians and pathologists from the local area and provide a valuable forum for discussion and gaining experience in presenting cases to a professional audience. Residents also present cases at the annual South-Eastern Veterinary Pathology Conference (SEVPAC), held in Tifton, GA and many attend the annual ACVP and/or STP meetings in addition to various gross and histopathology



Focus On Our Future.... Showcasing our Veterinary Schools and Pathology Programs, Cont.

gross and histopathology courses held nationwide. Residents are also involved in training senior veterinary students during their pathology rotation and assisting with the sophomore general pathology course.

There are numerous opportunities for exposure to specialist disciplines. There are regular system-specific histopathology rounds (including dermatopathology, neuropathology, liver pathology, renal pathology and ocular pathology), in addition to rounds held by the various clinical services within the teaching hospitals. There are also multiple opportunities to spend time at the many academic, industrial, government and research institutions within the local area. Residents also hold a biweekly journal club to review the recent pathology literature and a weekly general and gross pathology review session in preparation for the ACVP board examinations. Furthermore, in the spring semester, there is a pathology seminar series which showcases a range of speakers from a wide variety of pathology disciplines. This semester, external speakers have included Dr. Paul Stromberg (The Ohio State University), Dr. Tom van Winkle (University of Pennsylvania), Dr. Susan Elmore (National Toxicology Program, NIEHS) and Dr. Jeff Everitt (GlaxoSmithKline). In the past eight years, NC State has achieved a 100% pass rate for Residents taking the ACVP board examinations at the first sitting.

The Residency Program Director, Dr. Keith Linder, forms the cornerstone of the program, ensuring the success of the program on day-to-day basis and providing

support and tuition to the residents. He is joined by a team of senior anatomic pathologists including Dr. Mac Law, Dr. Yongbaek Kim, Dr. Stuart Hunter, the immediate past President of the ACVP, Dr. John Cullen, and the current ACVP President, Dr. Don Meuten. We are also very fortunate to have the support of excellent clinical pathologists, adjunct faculty and a team of highly skilled necropsy and histopathology technicians.



North Carolina State University College of Veterinary Medicine



View of the NCSU CVM across the pond



Barns at the NCSU CVM

Veterinary Pathology Residencies 101: On Your Mark, Get Set... Apply!

Many of you are eagerly awaiting the completion of final exams and the start of summer break. Perhaps you have lined up a summer externship doing research or working at a diagnostic lab. Or maybe you have finally moved into the clinics and you are on the homestretch to officially becoming a veterinarian! Regardless, the summer will be over before you know it! So, there is no time like the present to start thinking about the application process for residencies in veterinary and comparative pathology!

An extensive directory of veterinary and comparative pathology training programs can be found on the American College of Veterinary Pathologists' (ACVP) website (<http://www.acvp.org/training/registry/menu.php>). Residency and graduate study opportunities in veterinary and comparative pathology are posted online by the ACVP http://www.acvp.org/career/training_center.php as well as the American Society of Veterinary Clinical Pathology (<http://www.asvcp.org/pages/positionsavailable.html>). Postings usually begin around June 1st. If you don't see a posted position for an institution to which you are particularly interested in applying, don't hesitate to call or email the contact person listed in the directory noted above. Application due dates vary between institutions but typically range from October 1st to December 1st.

In general, most applications will require a letter of intent, your updated curriculum vitae (CV), a statement of career goals, your transcripts with cumulative grade point average and class rank, GRE scores, and letters of reference. However, be sure to read postings carefully so as not to miss special application procedures. Start updating your CV now, and make sure that your references are aware of your intent to apply for pathology residencies. If you haven't had a prior externship at your top institution(s), you might consider coordinating a visit at some point this summer or early

fall. Visits benefit both the institution and potential applicant. Faculty will be able to match personalities with names and achievements on paper. In addition, potential applicants will be able to see the area, speak with current faculty and residents, and if the timing is right, maybe even attend gross rounds or a histopath seminar. Once you have sent off your applications, don't hesitate to contact the application coordinators to ensure that ALL of your materials have been received in advance of the due date.

It is true that submitting your applications early will result in a longer period of anxiety and nail biting until institutions make their decisions! But just remember, the early bird gets the worm while the procrastinator just gets stressed out!

Happy applying!



Ocelot, Annie Griffiths Belt
<http://photography.nationalgeographic.com/>

Career Paths Taken Are Not Always Straight:

A distillation from the Career Development Lunchtime Series during the 2008 STP Annual Symposium in San Francisco, CA

The Career Outreach Committee of the STP sponsored an informational lunch-time session to learn about the various career paths taken, decisions made, and experiences gained as told by four STP Members who have taken different career paths. These panelists also answered a series of career profile questions; we included the final 3 profiles here.

Jack R. Harkema, DVM, PhD

(Career path: Government/Private Foundation to Academia)

What is your current position? University Distinguished Professor (Michigan State University)

What was the impetus behind your career changes?

Recruited by university (alma mater; college of veterinary medicine) to develop research and training program in toxicologic pathology; the right challenge for me; Good time in life to make the change (e.g., family factors); A good opportunity to teach and do independent research in a collaborative and collegial atmosphere; Could see myself contributing to the program; A good place to grow professionally and personally, while being of service to others.

What did you take away from each position that was positive or negative?

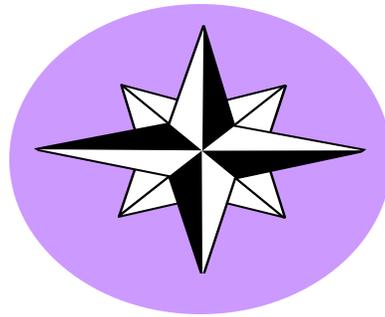
Research and administrative skills/experiences that were invaluable for becoming an independent academic researcher in my field of interest; Many opportunities were provided to me to grow in my area of expertise; No real negatives in previous position (it was hard to leave this job).

What advice do you have in making career path decisions?

Don't go for the money; make decision on where you best fit and where you will be most happy in your day to day activities; Be honest with yourself and your colleagues; Develop a niche (expertise) early in your career; Always remember that our profession involves life-long learning; Go to a place that will give

you good support, encouragement, respect, and space to grow and serve (e.g., good mentors, critical mass of co-workers; laboratory space; a defined mission/vision in which you can work); Look for opportunities to serve, rather than to be served.

What were your biggest misconceptions or ah-ha moments during career changes? I will be less busy in academia compared to my current nonacademic position; I will have less research opportunities (sustainable collaborations and funding).



"The microbe that felled one child in a distant continent yesterday can reach yours today and seed a global pandemic tomorrow"
- Josh Lederburg (American molecular biologist and Nobel laureate)

We're on the Web!
www.toxpath.org
www.acvp.org

Career Paths Taken Are Not Always Straight: continued

Curtis Colleton, DVM, DACVP, PMP

(Career path: Military to Private Practice to Business Owner to CRO to Pharma)

What is your current position? Principal Pathologist, Drug Safety Evaluation

What was your career path? Military (Animal Disease Prevention and Control, Food Quality Assurance, Veterinary Pathology Board Certification, Medical Research Fellow, Research Pathologist/Primary Investigator)→Private Practices (Diagnostic and Forensic Veterinary Pathology); (Veterinary Medicine and Surgery) (Equine Medicine-Large Animal Hospital), (Mixed Animal Medicine and Surgery Clinic)→Small Business Entrepreneur (Restauranteur) → CRO (Pharmaceutical and Environmental Toxicity Risk Assessment) →Project Management (Project Management Certification) →Pharmaceutical Research and Drug Safety Evaluation

What was the impetus behind your career changes?

I was often impressed with the knowledge one received in a pursuit of board certification and had an innate belief that as a pathologist one should aspire to go where complacency was replaced with the ability to take calculated risks. As such, I always looked for opportunities to explore arenas either untouched or less taken. With this attitude/paradigm, I found myself looking at opportunities that other may consider risky or on the verge tipping the scale, so to speak. Albeit, all risk provides one with opportunities either for success or reevaluation of a less favorable course.

What did you take away from each position that was positive or negative?

This question dove tails nicely with the previous as to risk opportunities and the ability to build on success and all the more failures. Each position afforded me the opportunity to maximize my personal and career goals, that of being a loyal family head and provider and achieving the level of proficiency to compete in the biopharma arena. This end, I used each position as building blocks and or stepping stones to this objective/goal. Building on successes and making positive readjustments in the face of miscalculations allow my family and me to appreciate all of the lessons learned and to implement corrective actions that prompted new job opportunities in this progressively complex, dynamic profession.

What advice do you have in making career path decisions?

Keep your eyes on the prize. What ever that prize is for you is an individual goal. I have come to know that if there is no prize, there is no desire and most likely, success in this field may not meet your anticipated expectations. Expectations postponed may be momentarily grievousness but, persistence toward your prize and the zeal to obtain it shall promote the due diligence needed to negotiate the hurdles you will experience in your race for either financial, professional, and or personal victories. The career path of choice should be one that allows for the sum accomplishment of all of these victories.

What were the your biggest misconceptions or ah-ha moments during career changes?

I had to embrace and come to appreciate the reality of “Change” which in itself is not bad. Coupled with this fact was the “eureka” of understanding that in the face change there was a wonderful opportunity to siege success. Always looking, always searching, always thirsting for “new”, unknowns and trying to better my ability for victories, I came to understand that life is a “sip” and in order to enjoy it you will need something to drink out of. Therefore, I came to know that one needed to always have a cup that was full of opportunities (positive relationships, directed professional preparation, first-in class desire) to assure success in each career change.



1918 Flu Pandemic

Career Paths Taken Are Not Always Straight: continued

Donna Dambach, VMD, PhD, DACVP

(Career path: Academia to Pharma to Biotech)

What is your current position? Principal Associate Director, Investigative Safety Assessment, Genentech, Inc

What was your career path? After completing my residency, I took a 3 year position as a Lecturer & Diagnostic Pathologist (Pathobiology Department, School of Veterinary Medicine, and University of Pennsylvania). I then moved to the Pharmaceutical Industry (Bristol-Myers Squibb Company) as a pathologist and also completed my PhD while working and stayed at Bristol for almost 10 years before moving to my current position at a large Biotechnology Company (Genentech, Inc.) at the end of 2006.

What was the impetus behind your career changes?

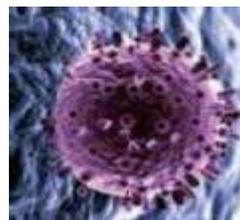
I loved academia and would have made my career in that field, but during the late 1990's two things were making it difficult for me to stay [a] I had chosen not to complete a PhD, and [b] there were few positions for clinician educators. I had no desire to have a primary career as an NIH-funded researcher and although I had extensive teaching, clinical research, and diagnostic experience, my lack of PhD did not make me competitive for other academic positions. Through networking, I was given the opportunity to take a Post-Doctoral Position in the Department of Experimental Pathology, Bristol-Myers Squibb while earning my PhD (funded entirely through BMS). I remained at BMS for nearly 10 years because the position (toxicologist and pathologist in Discovery Toxicology and Regulatory Toxicology) was intellectually stimulating and challenging and it was continually expanding and transforming, thus giving me great career development. I was quite happy with my career progression at BMS but decided to move on to large biotechnology for my career development as a leader (my task was to establish and build a new group) and for personal reasons (to explore the west coast).

What did you take away from each position that was positive or negative?

Many, many things, but I will keep it succinct. Feel free to call, email or chat with me at a meeting for details! While in academia I learned that I loved to teach and help students to get excited about thinking and problem solving as it related to veterinary medicine. I still feel that an academic position is one of the highest honors someone can have because they are empowering generations of new veterinarians and veterinary pathologists. The "negative" that I experienced occurred when I decided to go to

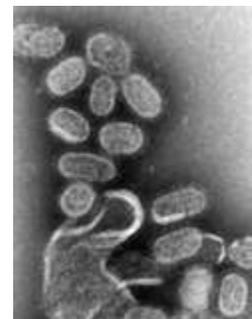
industry and the faculty summarily disrespected that decision. This notion that industry is the "dark side" is a fallacy and even more so when your mentors and colleagues in academia have no experience or understanding of the scope of activities and opportunities in industry. I think this is an extreme disservice to our students and residents.

From my > 10 years of experience in industry I have learned that good science can be accomplished in industry, especially in the research or discovery toxicology setting and now more than ever in the regulatory setting. I also learned many life skills including: how to interact in a collaborative and collegial manner on large teams and to influence others, how to manage and resolve conflict. Finally I have learned how by combining good science with good business a practice leads to valuable outcomes that can be measured. On the negative side, although I have been very successful, there is still discrimination between men and women in big pharma. It is often very subtle (e.g. opportunities given and pay differences) and often very overt (e.g. at top level meetings <20% of attendees are women or a woman's comments are ignored yet a male colleague who follows with the same comment is acknowledged), but for women to be successful they need to learn how to function most appropriately in this environment to get the most out of their career progression. Three things I highly recommend to this end: [a] take leadership courses in general but also those that specifically cater to women—we have their own "issues" because of the way they move in the world, [b] join a professional women's mentoring network and use it!!, and [c] read literature regarding how to move in the business world, such as "Her Place at the Table", or "Nice Girls Don't Get the Corner Office".



H1N1 Influenza
(Cause of current outbreak of "Swine Flu")

Influenza virus from the 1918 Pandemic



Career Paths Taken Are Not Always Straight: continued

Donna Dambach, Cont.

What advice do you have in making career path decisions?

Be open-minded and intentional and constantly expose yourself to new ideas. Few people have an arrow-straight career path. You will actually experience more and learn more because you are confronted with many choices, none of which are wrong. Also, be aware that you have time and that if a choice is presented to you that you feel you are not “ready to take”, do not totally dismiss that potential opportunity as a future opportunity and stay in touch with the person who offered it to you...they may serve you well in the future in many ways but mostly as a mentor or networker. Talk to people and listen to their stories and network. I have never met someone who did not want to tell me their story/experience or to help me if I asked for help—people will bend over backward to help you. Do not be afraid to ask questions of any kind—especially for clarification, and to ask for help. Finally, every position will have good and bad points. Pay attention to both and be honest in asking yourself why something was bad or good and learn from it.



would not have been aware of if I had not explored different opportunities. The result was that I began to have a clearer picture of what I wanted from my career and it helped me to map out and implement my career path. So, I think it is a great idea to keep exploring other opportunities just so that you can help clarify what you want in your career...but understand that as you take on new roles or responsibilities those experiences will also help to continue to form what you want to do. Just be open to what is working for you and what is not and go from there.

What were the your biggest misconceptions or ah-ha moments during career changes?

My biggest misconception was how wonderful change is as a career development tool. I openly embrace and now look forward to change. Imagine if nothing changed! How stagnant would your career be...bottom line is to figure out how you can benefit from change.

My ah-ha moment occurred when I went on a job interview on a whim because the person who requested it was my friend. In that situation, I was totally relaxed because I had nothing at stake and I was able to candidly ask questions about things that I felt would be important for my career. I also realized how much I learned about what other people do and differences in job opportunities that I

Prothonotary warbler with cherry blossoms.
Washington, D.C.

Raymond K. Gehman

<http://photography.nationalgeographic.com/>

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Case Report

THE CASE OF THE DOUBLE NEGATIVE DOMESTIC SHORTHAIR**Signalment:**

11 year old, male neutered, Domestic Shorthair cat

History:

2 month history of weight loss despite normal appetite and attitude. Indoor/outdoor cat.

Physical Exam:

Possible mildly enlarged submandibular lymph nodes, but has scar tissue in this area from previous cat fight wounds.

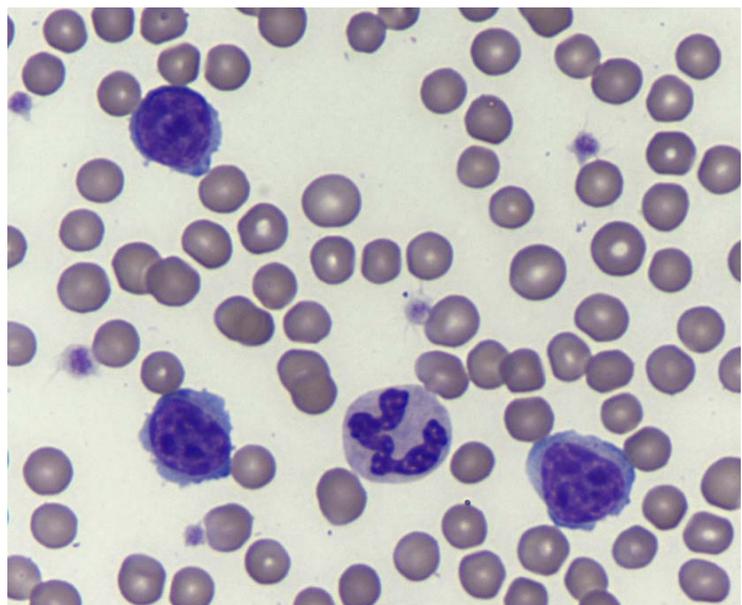
CBC/Selected Chemistry Results:

Analyte	Patient	Reference Interval	Analyte	Patient	Reference Interval
HCT	30	25-46%	BUN	25	13 – 30 mg/dL
Hemoglobin	10.7	8.0-14.9 g/dL	Creatinine	2.2	0.9 – 2.1 mg/dL
RBC	6.8	5.3 – 10.2 x 10 ¹² /L	ALT	405	20 -95 IU/L
Platelets	232	150 – 600 x 10 ⁹ /L	AST	91	10 – 35 IU/L
WBC	47.3	4.0 – 14.5 x 10 ⁹ /L	ALP	118	15 – 65 IU/L
Seg. Neutrophils	9.5	3.0 – 9.2 x 10 ⁹ /L	Bilirubin	0.31	0.1 – 0.4 mg/dL
Band Neu-	0.5	0 – 0.1 x 10 ⁹ /L	Glucose	91	70 – 260 mg/dL
Lymphocytes	36.9	0.9 – 3.9 x 10 ⁹ /L			
Eosinophils	0.5	0 – 1.2 x 10 ⁹ /L	T4	2.1	0.4 – 5.2 ug/dL

FeLV/FIV tests: negative/negative



Blood Smear:



Case Report

THE CASE OF THE DOUBLE NEGATIVE DOMESTIC SHORTHAIR

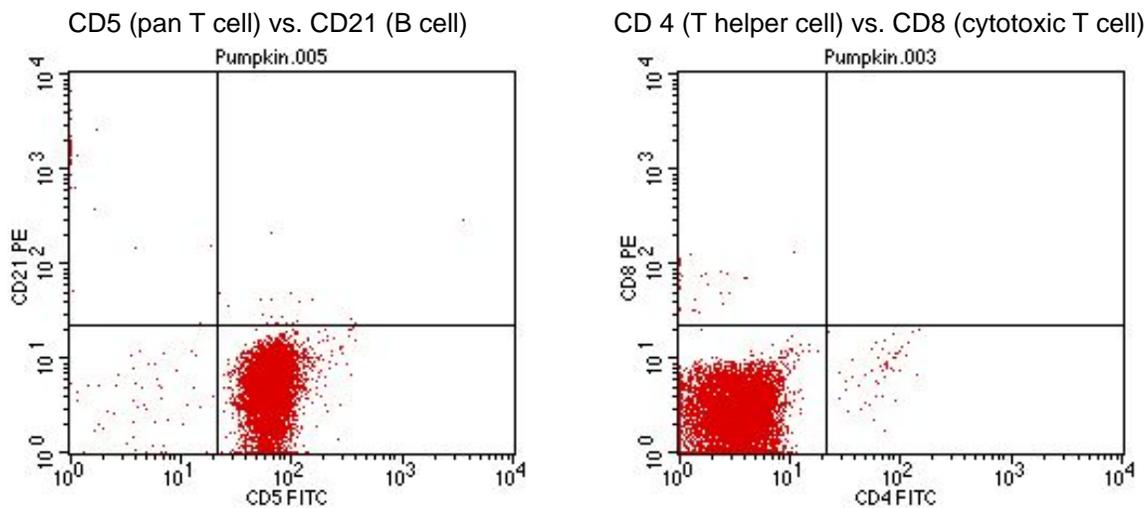
The answer.....

Microscopic Description: There is a marked increase in leukocyte density with marked lymphocytosis. The lymphocytes are small to intermediate in size with oval nuclei with clumped chromatin and scant to moderate amount of basophilic cytoplasm. No lymphoblasts were detected. The red blood cell morphology appears normal. Platelets are clumped, but platelet numbers appear adequate.

Interpretation: The marked lymphocytosis with a predominance of small cells with mature chromatin is consistent with chronic lymphocytic leukemia.

Comments: The marked mature lymphocytosis is most compatible with chronic lymphocytic leukemia (CLL). Immunophenotyping by flow cytometry may be helpful to confirm that there is a homogeneous lymphoid population consistent with CLL.

Immunophenotyping



Description: More than 99% of the cells are CD18+ (pan-leukocyte marker) and CD5+ (pan T cell marker). The cells are negative for CD4 (helper T cell marker), CD8 (cytotoxic T cell marker), CD21 (B cell marker), and CD14 (monocyte marker).

Interpretation: The large number of lymphocytes and homogenous population of double negative (CD4-,CD8-) T cells (CD5+) of small size is consistent with CLL.



Case Report

THE CASE OF THE DOUBLE NEGATIVE DOMESTIC SHORTHAIR

Comments and Discussion:

Leukemic cells may ultimately infiltrate all organs in the body, but the spleen and liver are usually among the first affected. This patient had elevations in liver enzymes that were suggestive for hepatic involvement. The liver had a normal ultrasonographic appearance, and was not aspirated or biopsied. Mildly to moderately enlarged abdominal lymph nodes were noted, and an enlarged node was aspirated and revealed a monomorphic population of lymphocytes similar to those seen in the peripheral blood. The patient responded well to chemotherapy (chlorambucil and prednisone) with stable disease and mildly increased lymphocyte counts (approximately $10.0 \times 10^9/L$) for 15 months, when he died from unknown causes.

Immunophenotyping by flow cytometry differentiates between cell populations based on the size and granularity of the cells and by the binding of fluorescent antibodies specific for cluster of differentiation antigens (CD) of lymphocytes and other leukocytes. The degree of fluorescence is compared to an isotype control for the fluorochrome to determine the expression of antigens. In this case, the lymphocytes express CD5 (see shift to the right in the above quartile plot), but do not express other markers of lymphoid differentiation.

In normal cats, approximately 75% of circulating lymphocytes are CD5+ T cells. Of these, approximately 45% are CD4+, and 25% are CD8+.¹ Double negative lymphocytes are found during early stages of T cell development in the thymus but are rare in peripheral blood in normal animals. A significant expansion of an immunophenotype not typically found in peripheral blood is strongly suggestive for a neoplastic proliferation of lymphocytes.

There is very little published data on CLL in cats. In one study of 20 cats², CLL was typically seen in older cats (mean age 12.2 years), and clinical signs were vague. Reported clinical signs included lethargy, weight loss, and less frequently, splenomegaly, hepatomegaly, and pale mucous membranes. The lymphocyte counts were variable and ranged from $25.0 - 575.0 \times 10^9/L$. Approximately 60% of cats were anemic and 38% were thrombocytopenic, but this was often mild. Neutrophilia occurred more frequently than neutropenia, and was found in 50% of cats with neutropenia in only 16%. In this study, all of the affected cats were feline leukemia virus negative.

Seventy five percent of the cats had a T helper cell (CD3+/4+/5+/8-) immunophenotype, while 10% of the remaining cases were cytotoxic T cell lineage (CD3+/4-/5+/8+), 10% were double negative (CD3+/4-/5 variable/8-), and 5% were double positive T cell (CD3+/4+/5+/8+). B cell CLL was not reported in these cases.



FOR FUN: In the “Probably Not the Greatest Idea” Category of Movie Concepts.....



“A group of med students hatch a scheme to see who can commit the perfect crime”

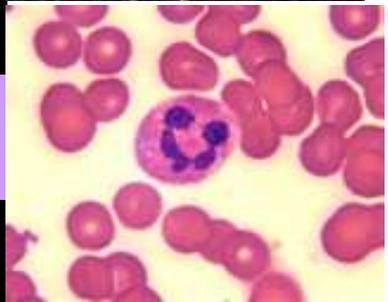
Starring Milo Ventimiglia (I would hope this was “pre-Heroes”) and Alyssa Milano

Box Office gross: \$108,662 (you mean you didn’t even know it was released? Neither did I!)

References for Case Report

¹Workman, HC, Vernau, W. Chronic lymphocytic leukemia in dogs and cats: the veterinary perspective. *Vet Clin Small Anim.* 22 (2003) 1379-1399.

²Workman, HC, Vernau, W, Schmidt, Schmidt PS, Roccabianco, P, Moore PF, Shelly, S., and Ruehl W. (2004) Chronic Lymphocytic Leukemia in Cats is Primarily a T Helper Cell Disease *Vet Clin Path.* 33(3):184.



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Feel free to contact committee members with questions or for advice

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Upcoming Events.....

June 4-5	48th North Central Conference of Veterinary Laboratory Diagnosticians Stoney Creek Inn, Columbia, MO http://www.aavld.org/mc/community/vieweventcalendar.do?selCalendar-Month=5&selCalendarYear=2009	College of Veterinary Medicine University of Illinois Hilton Garden Inn, Champaign, IL Wanda Haschek-Hock, Matt Wallig www.vetmed.illinois.edu/ope/itp
June 9-11	The Canadian Animal Health Laboratorians Network (CAHLN) Annual Meeting Charlottetown, PEI, Canada Dr. Anne Muckle cmuckle@upe.ca	July 22-24 Target Organ Toxicologic Pathology Part 1 (hepatic and cardiovascular systems) College of Veterinary Medicine University of Illinois Hilton Garden Inn, Champaign, IL Wanda Haschek-Hock, Matt Wallig www.vetmed.illinois.edu/ope/itp
June 17-20	International Symposium of the World Association of Veterinary Laboratory Diagnosticians Madrid, Spain http://www.aavld.org/mc/community/vieweventcalendar.do?selCalendar-Month=5&selCalendarYear=2009	July 22-24 3rd International Chronic Wasting Disease Symposium: CWD- Advancing the Science and Developing the Tools Marriott Hotel/Conference Center Park City, UT http://www.regonline.com/builder/site/Default.aspx?eventid=650932
June 20	NTP (National Toxicology Program) Symposium Wardman Park Hotel, Washington, DC www.toxpath.org/AM2009/index.asp	August 2-7 Wildlife Disease Association Meeting Semiahmoo Resort and Spa, Blaine, Washington http://www.wildlifedisease.org/Conference_2009.html
June 21-25	28 th STP Annual Symposium, Theme: Cancer Wardman Park Hotel, Washington, DC www.toxpath.org/AM2009/index.asp	August 13-14 Midwest Association of Veterinary Pathologists Turkey Run State Park Marshall, IN Website: http://vetmed.illinois.edu/mavp/
July 7-9	International Conference on Bovine Mycoplasmosis Western College of Veterinary Medicine, Saskatoon, Saskatchewan, CA http://www.bovinemycoplasma.ca/	
July 20-22	Toxicology & Pathology in Drug Discovery & Development Short Course	

Upcoming Events.....

September 13-15 Pathology Visions Conference
 San Diego Marriott Hotel/Marina
 San Diego, CA
[http://
 www.pathologyvisions.com/](http://www.pathologyvisions.com/)

September 15-18 The 9th Annual Meeting of the
 Safety Pharmacology Society
 Strasbourg, France
[http://
 www.safetypharmacology.org/
 am2009/](http://www.safetypharmacology.org/am2009/)

September 22-24 American College of Veterinary
 Pathology Certifying Examina-
 tion
 Iowa State University
 Ames, IA
<http://www.acvp.org/exam/>

October 23-24 Western Conference of Veteri-
 nary Diagnostic Pathologists
 Musculoskeletal Pathology
 Minneapolis Airport Marriott
 Minneapolis, MN
www.wcvdp.usask.ca

November 1-4 American College of Toxicol-
 ogy, 30th Annual Meeting
 Palm Springs, CA
www.actox.org

December 5-9 The American College of Vet-
 erinary Pathologists 60th An-
 nual Meeting
 The American Society for Vet-
 erinary Clinical Pathology 44th
 Annual Meeting
 Monterey, CA
www.acvp.org



Chinstrap penguins on icebergs near Candlemas Island, South Sandwich Islands.
 Maria Stenzel. <http://photography.nationalgeographic.com/>