FORMAT #1

MENTORING PLAN AND PROGRESS REPORT

Faculty Name

Current position: Assistant Professor of Pathology, Microbiology & Immunology
Track: Clinical Educator

MENTORING COMMITTEE:

I. FACULTY DEVELOPMENT – SHORT AND LONG TERM GOALS

Service

OAWA

- Continue responsibility in providing review of animal care protocols for researchers – 50% effort.
- Continue work with ARIES software for protocol submission, IACUC review and approval
- Development of content for ARIES training videos

Comparative Pathology

- Find additional opportunities to provide veterinary pathology service (current job duties allow for approximately 30% of my effort to be assigned in the TPSR).

SERVICE--SHORT TERM GOALS:

-OAWA: Continue development of training videos for ARIES (beyond the videos that were identified as essential for release)
-OAWA: Following release of ARIES, identify areas of enhancements and work on content development for future application of the system (Reporting, Training, etc…)
-Comparative Pathology: Continue association with TPSR by providing pathology support (gross and histologic evaluation)

Obstacles: None foreseen in the short term.

SERVICE--LONG TERM GOALS:

- Comparative Pathology: Continue to support to DAC and TPSR by providing pathology support (gross and histologic evaluation/interpretation)
Obstacles: Veterinary Pathology Boards would ultimately be necessary to maintain this service.

Research

- Complete work on research project and publish a first-authored paper – required to become eligible for board certification—*Research has been completed and the manuscript submitted. Reviewers requested substantive changes which resulted in additional staining and manipulation of specimens. The manuscript was re-submitted and has been accepted*

for publication

- Continue veterinary pathology consultation and collaboration with researchers as opportunities become available with goal of sustained productivity
    - Working with Eric Skaar on a mouse model of phototherapy on an established model of skin infection using *Staphylococcus aureus*.
    - Working with Mike Freeman to help establish histologic parameters of a nucleophosmin inhibitor and apoptosis.
- Evaluate differences in compliance among animal protocols that have undergone full committee review compared with protocols that have undergone designated member review

RESEARCH--SHORT TERM GOALS:

-Presentations at National Meetings (AALAS--1-2 per year)
-Continue working with established collaborations (Drs. Skaar and Freeman) to complete studies which will hopefully result in peer reviewed publications
Obstacles: Dedicated time

RESEARCH--LONG TERM GOALS:

-Establish additional collaborative research ties with investigators at Vanderbilt
Obstacles: Dedicated time

Teaching and Training

- Continue to participate in teaching within the Cellular & Molecular Pathology graduate program and the new Comparative Medicine Residency program
- Continue to work to enhance the training of laboratory animal technicians
- Establish and oversee central training office to coordinate training of DAC staff and research personnel (long term)

TEACHING AND TRAINING--SHORT TERM GOALS:

-Update and enhance lectures in the Laboratory Animal Medicine Residency Training Program to more accurately reflect needs of board certification
-Develop more Mock Examination Materials for Residents
-Develop more materials for Pathology Rounds
Obstacles: None foreseen in the short term.

TEACHING AND TRAINING--LONG TERM GOALS:

-Redevelop Vanderbilt Animal Care and Use Training Program—I feel like there are ways to make the current program more 'user friendly' with the researchers and their staff. This would involve restructuring the program and providing additional courses for research staff training.
Obstacles: The main obstacle would be assessment of the priority of a new or modified training program, potential need for additional resources

Professional

- Become board certified by the American College of Laboratory Animal Medicine (ACLAM)

PROFESSIONAL SHORT TERM GOALS:

-Sit for American College of Laboratory Animal Medicine (ACLAM) board

examination and PASS

Obstacles: Time for studying; Attending national training/test preparation sessions

PROFESSIONAL LONG TERM GOALS:

-Promotion to Associate Professor
-Become more proficient in veterinary pathology
-Apply to become an ad hoc consultant for AAALAC International
-Become more involved in AALAS

Obstacles:

-Promotion would most likely require passing the ACLAM board along with publication of additional peer reviewed articles.
-Enhancing veterinary pathology proficiency could be achieved by increasing exposure to veterinary pathology cases and attendance at various veterinary pathology continuing education seminars.
-Ad hoc service for AAALAC International is by application, and acceptance is based upon needs of the organization.

II. ACCOMPLISHMENTS AND PROGRESS AND PLANS TOWARD ACHIEVEMENT OF GOALS

Administrative

- Institutional Biosafety Committee
  - Voting Member
  - Reviewer
- Institutional Animal Care and Use Committee
  - Protocol Review
    - Working to facilitate a decrease in turnaround time for animal protocol reviews to which he is assigned
    - Aid in training new IACUC members regarding protocol review
    - Serve as arbiter for veterinarians and IACUC reviewers to determine when previously approved protocols represent animal welfare concerns or significant regulatory risk and require modification

- Development of ARIES software for protocol submission, IACUC review and approval
  - Ongoing

Teaching

Accomplishments:

- Externship rotation teaching
  - Review of Pathology
  - Introduction to Protocol Review
  - Aided Mentor (Kokoye) with Extern and Extern Project (Briony Smith—June 2014)
- Participation in Path 351
  - Animal Handling 4/7/2014
  - Rodent Necropsy 4/21/2014

- Lectured in NIH sponsored Metabolic Syndrome Short Course
    - August 5-9, 2013 "Working with Animals, the Role of the IACUC"
    - August 11-15, 2014
        - " Working with Animals, the Role of the IACUC"
        - "Introduction to Suture Techniques"
- In-House Training for Research Staff
    - Pain and Distress in Research Animals
- Course Director for "Regulations" in Laboratory Animal Medicine Residency Program
- Assisted in the Laboratory Animal Medicine Residency Program Pathology Rounds
- Participation in Literary Review Club--Monthly
- Lectured in Laboratory Animal Medicine Residency Program Didactic
    - Biology and Disease of Amphibians 8/25/2014
    - Biology and Disease of Reptiles 9/3/2014
    - Biology and Disease of Ferrets 9/8/2014
    - Animal Models of Human Disease – Cancer 1/5/2015
    - Regulations: The Guide for the Care and Use of Laboratory Animals Chapters 1 & 2 3/4/2015
    - Regulations: The Guide for the Care and Use of Laboratory Animals Chapter 4 3/16/2015
    - Regulations: AVMA Guidelines on Euthanasia 4/20/2015
    - Regulations: USDA Policies 4/27/2015
    - Regulations: The Guide for the Care and Use of Laboratory Animals Chapter 3 3/30/2015
      Regulations: Mock Examination 5/23/2014

Scholarship

Accomplishments:

- Publications

- Presentations
    - Salleng K, Burton B, Apple T and Sanchez S. Isolation of *Trueperella pyogenes* in a case of Thoracic and Abdominal Abscess in a Galago (*Otolemur garnetti*).65th AALAS National Conference; San Antonio, Texas: October 19-23, 2014.

    - Salleng K and Boyd K. The Use of Shed Skin for Diagnosis of Cutaneous Disease in a Tentacled Snake (*Erpeton tentaculatus*). 65th AALAS National Conference; San Antonio, Texas: October 19-23, 2014.

    - Salleng K, Burton B, Apple T and Sanchez S. Isolation of *Trueperella pyogenes* in a case of Thoracic and Abdominal Abscess in a Galago (*Otolemur garnetti*). Association of Primate Veterinarians (APV) 42nd Annual APV Workshop. La Cantera Hill Country Resort. San Antonio, Texas. Oct 15-18 2014

- Research
    - Completed research and manuscript entitled "The Applicability of an Immunohistochemical Panel Commonly Used in the Diagnosis of Human Hepatocellular

Carcinoma When Applied to Mouse Models of Hepatocellular Neoplasia" and submitted to *Comparative Medicine*.
    - Currently working on a case report for submission to *Journal of Medical Primatology*.

Professional Accomplishments

- Certified Professional IACUC Administrator

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Mentee Chair of Mentoring Committee

FORMAT #2

Medical Director of the Clinical Hematology Laboratory:

Accomplishments:

- This year we upgraded to new Sysmex XE-5000 hematology analyzers with a new MOLIS-WAM middleware interface. The MOLIS-WAM interface makes possible auto-verification of normal CBCs and allows us to fully utilize the DM-96 automated differential analyzer at multiple workstations, including a new workstation in the Pediatric Hematology-Oncology laboratory.
- In conjunction with introduction of the new hematology analyzers, we analyzed data from 200 "normal" adult patients to recalculate normal adult ranges for all of the hematology tests.
- The criteria for critical values for the Hematology Lab was reviewed, and the automated critical value alert system was implemented.
- We also implemented a new automated urine microscopy system, the IQ200. The IQ200 has a neural networking system so that pictures of cells and other objects in the urine are taken and sorted on the screen, facilitating review by the technologist and obviating the need to manually make slides to scan by traditional microscopy. This new instrumentation has improved our turn-around times in urinalysis.

Plans:

- Due to the retirement of our previous MTIII hematology technologist, Sally Pankau, we are interviewing for two new MTIII hematology technologists. One will be focused on teaching, and the other will be focused on instrumentation. We are very fortunate to have 4 strong internal candidates to choose from. I plan to work with the teaching MTIII to strengthen the bi-annual proficiency testing of the technologists, and I plan to work with the instrumentation MTIII to do several correlative studies to critically review several flagging and review criteria for hematology parameters.
- Institute regular review of peripheral blood smears with the pediatric hematologists in the pediatric benign hematology clinic, including generation of consultative reports.
- Now that the MOLIS-WAM interface is in place in the satellite hematology labs as well as the Core Lab, I plan to work with LIS to streamline the presentation of the hematology values in StarPanel. Right now the display is very cumbersome.
- I will also work with the MTIII to update the CAP Inspection Notebook, so we are ready for the surprise CAP inspection in the spring.
- Institute regular Case of the Week short CME talks for the technologists.

Hematopathology Attending:

Accomplishments:

- I continue to derive great satisfaction from signing out hematopathology cases. The variety and complexity of cases we get at VUMC is a constant intellectual challenge, and it is an ideal practice setting to have great colleagues with whom to discuss hard cases.
- This year we decided to always have 2 attendings on the hematopathology service due to the increase in cases, particularly bone marrows. This has significantly increased the number of weeks I was signing out hematopathology cases over the last year—14 weeks on the in-house service, which includes bone marrows (5-13 per day), in-house lymph nodes and non-nodal tissue, and peripheral blood smear review, and 11 weeks of the referral and consult service.

- I submitted a case to and attended the 2009 Society for Hematopathology meeting entitled "The spectrum of immunoproliferative disorders and the border between B cell lymphoma and Plasma Cell neoplasms".

Plans:
- I will continue to be one of the three hematopathologists with the most sign-out responsibility. However, I will have a small reduction in service weeks since we now have two new hematopathology faculty.
- I am working on two case reports with residents that I intend to submit for publication within the next month; a third case report is being submitted by a clinical hematology/oncology attending.
- I look forward to working closely with Dr. Ashwini Yeamandra to integrate more cytogenetics and FISH into the hematopathology report. For example, CSF cytospins looking for rare lymphoblasts can be challenging morphologically. If the patient has a characteristic translocation in his leukemic cells FISH on the unstained cytospins would be very useful in definitively calling blasts on the cytospin.

Teaching:

Accomplishments:
- Director of the Hematopathology week in the Disease, Diagnosis and Therapeutics course for second year medical students. I gave 4 lectures in this unit.
- Director of the Bone Marrow rotation for Pathology residents, and co-director of the Blood Module rotation for pathology residents. I have a 30 case teaching set for the bone marrow rotation resident, and a 55 case teaching set for the blood module residents, as well as a teaching set on blood parasites.
- Organized hematopathology week for the medical technology students, and gave 4 lectures in hematopathology, 2 lectures in hematology.

Plans:
- Continue the above teaching activities
- Continue to add teaching sets for the blood module residents (urinalysis in progress).
- Create study guides/quizzes for the blood module to ensure that all the residents are mastering the basics of benign hematology
- Discuss possibility of a didactic series for residents on investigative pathology/molecular basis of disease to encourage them to think about research projects that go beyond correlative immunohistochemistry.

Research

Accomplishments:
- In the Translational Research Laboratory, I have continued to involve residents in projects involving the role of microRNA expression in the pathogenesis of leukemias and lymphomas. We have focused on identifying targets for microRNAs that we have previously identified as having altered expression in leukemias and lymphomas..
- We have performed functional assays to identify targets of miRNA-155, which we have previously shown to be over-expressed in all AML cases that we have studied. One target gene to which miR-155 binds is C/EBPbeta, a transcription factor involved in granulocyte differentiation. Unfortunately, at the same time I substantiated this result, similar findings were published by the Baltimore and

Croce labs. Recently, we have obtained preliminary evidence that E2F2, a transcription factor involved in cell cycle regulation, may be a target of miRNA-155. It has 2 binding sites in its 3'UTR that are complementary to miR-155. Other members of the E2F family have been shown to be regulated in part by microRNAs. E2F2 is unique among the E2F factors in that it is restricted in expression to lymphoid cells, and in E□myc mice knock out of E2F2 causes increased rapidity of tumor formation.

- After much patience and persistence, we have found several additional pairs of low grade and transformed follicular lymphoma from individual patients. We will perform a comparative screen for miRNA expression using TLDA plates in the mRNA core facility. In order to corroborate the results of a microarray (TLDA plate) screen comparing miRNA expression in low grade and transformed follicular lymphoma from the same patient. These preliminary results form the basis of the Leukemia and Lymphoma translational research grant that Chris Eischen and I are submitting. We spent some time trying to optimize the use of in situ hybridization with LNA modified probes for detection of changes in microRNA on tissue sections. We have initially concluded that it is not sensitive enough for diagnostic applications.

V. GOALS FOR THE COMING ACADEMIC YEAR

Comment on professional goals that you have set for yourself for the coming academic year.

--Hematopathology diagnosis: I plan to study the new WHO book on Leukemia and Lymphoma classification and to attend the 2009 Society for Hematopathology workshop (on lymphoplasmacytic and plasma cell neoplasms) in order to keep at the cutting edge diagnostically.
--Hematology lab: I plan to facilitate full implementation of the new instrumentation described above. This is almost complete for the hematology analyzer, but has just begun for the urinalysis analyzer.
--Teaching: I plan to standardize the mini-lectures that I give in the Blood Module in conjunction with the hematology study set cases, and to.
--Research: I plan to focus on completing the manuscripts that are listed as in preparation above. Collaboration with Chris Eischen should enable me to broaden the scope of my analysis of miRNA changes in transformation of follicular lymphoma. We will be using several approaches to identify targets of the miRNA-31 which reproducibly decreases in transformed follicular lymphoma. Although it is difficult to use decrease in a miRNA as a diagnostic tool for detecting early transformation, it would be easier to use immunohistochemistry to detect the protein product of the gene(s) , presumed oncogenes, that are no longer being repressed by miRNA-31 in the transformed cells.