



# Teaching Academy

Consortium of West Region CVM

## Paradigm Change in Teaching *Leveraging Cross- Institutional Collaboration*

### **2017 SUMMER CONFERENCE**

This conference is made possible by the collaboration of the five West Region Colleges of Veterinary Medicine; Colorado State University, Oregon State University, University of California - Davis, Washington State University, and Western University of Health Sciences. The Teaching Academy of the Consortium of the West Region Colleges of Veterinary Medicine is proud to acknowledge its corporate sponsor, Zoetis.

# PARADIGM CHANGE IN TEACHING

## *LEVERAGING CROSS-INSTITUTIONAL COLLABORATION*

Welcome,

On behalf of the Biennial Meeting Planning Committee, the RTA Steering Committee, and our 5 consortium deans, I welcome you to the 3rd Biennial Conference of our regional teaching academy. A special welcome to new Fellows and first time conference attendees. For those of us who have been here before, it's starting to feel like a biennial reunion of good friends and respected colleagues.

The theme of the 2017 conference is "Paradigm change in teaching: Leveraging cross-institutional collaboration." It's a theme I think fits perfectly because this year we are truly seeing the realization of our founding vision – namely that by working together in a small regional collaborative we can accomplish goals and engender change that none of us could accomplish in isolation. Remember that our goal is to "Make Teaching Matter". Those efforts and our progress are vividly on display at this year's gathering.

When the conference opens on Thursday, you will first hear reports from each of our "working groups" – i.e. the initiatives we collaboratively designed at previous biennial meetings to advance our mission. You will hear how the **Faculty Development group** has developed a multiday off-site training program targeted to young educator - about how it's been deployed twice in the last year and some of the outcomes. You'll learn about the successful efforts of the **Local Peer Observation of Teaching Initiative**. This working group has developed and is disseminating a process by which each college might provide "formative assessment" to their educators. Importantly, the original lecture-focused process has now been adapted for use in observing clinical teaching and teaching in small group settings. Finally, you will hear from the **External Peer Review of Teaching group** who are rolling out their evidence-based process for preparing and reviewing promotion packets. This initiative was a specific request from the founding deans as they sought (and continue to seek) better ways to document and assess teaching (and educational leadership). We hope that this new process will greatly facilitate the review and promotion of education-focused faculty at all 5 consortium schools. Beyond their initial reports, each of the RTA working groups will be presenting a 60-90 minute workshop. All 3 workshops have specific learning objectives and an active-learning format. The goals include not only bringing you up to speed on progress, but enabling you to apply these programs yourself or in your college.

The planning committee very much wants you to be able to gather new ideas that you will want to take back to your home institution. Towards that goal, in the two **Scholarship Sessions** you will hear reports from RTA Fellows who are doing educational research. This is an opportunity for the speakers to present their work in a public setting and get peer review. It's an opportunity also for you to

## STEERING COMMITTEE MEMBERS

### Chair:

Patrick Chappell, OSU

### Chair Elect:

Phil Mixter, WSU

### Treasurer:

Dean Hendrickson – CSU

### Executive Coordinator:

Rachel Halsey – WSU

Kristy Dowers, CSU

Steve Hines, WSU

Suzie Kovacs - WU

Jan Ilkiw – UCD

Ohad Levi, WU

Christiane V. Löhr, OSU

Johanna (Joie) Watson, UCD

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think about how you might design your own studies to gather information on effectiveness and outcomes. Along similar lines, we are excited about our new **Experiments in Teaching Sessions**. In these sessions, RTA Fellows will share unique experiences and some of the innovative methods they've been experimenting with. We hope you'll find a few "nuggets" (i.e. ideas you want to "steal"), or that you will come away inspired to experiment yourself. Lastly, there is a **Technology in Teaching Session** that will be focused on using student response systems ("clickers"). The focus here is not the nuts and bolts of the technology (which varies greatly) but the pedagogy behind the approach. Like any technology, clickers can be used well or poorly. You'll likely hear stories of both.

Finally, one the highlights of our 2017 Biennial Conference will be our 2 part KEYNOTE WORKSHOP on Teaching Critical Thinking and Clinical Reasoning. We've recruited 2 outstanding speakers from the medical teaching academy at Harvard Medical School. Although this workshop will have a clinical bend, I am confident it will have very broad application for us all. Plus, I think you will find it fun and challenging, and that you will enjoy our keynote speakers thoroughly. We are lucky to have them!

We look forward to working together this week, to welcoming new Fellows into "the tribe", and to leveraging the institutional and culture changes we all hope to bring about. You might note that there's no plans this year to identify a new RTA initiative. Instead, we hope to consolidate our previous work and focus on implementation and assessment. At the closing RTA Town Hall Meeting on Friday, we can talk more about our future and you can provide input. See you there!

Steve Hines, DVM, PhD, DACVP

Chair of the RTA Biennial Meeting Planning Committee

Member, RTA Steering Committee

# SCHEDULE OF EVENTS



Wednesday, July 12<sup>th</sup>

<b>2:00 pm</b>	<b>Working Group Meetings</b> - External Review Committee  -Faculty Development Committee  -Local Peer Review of Teaching	Meet in DMC 101- then move to A235 Meet DMC in 101, then move to A234 DMC 101
<b>3:45 pm</b>	<b>BMP Committee pre-conference meeting</b>	DMC 101
<b>6:30 pm</b>	<b>Conference Kick-off Event</b> Registration will occur during this time	<a href="#">Horse &amp; Dragon Brewing Company</a> (124 Racquette Dr.)

Thursday, July 13<sup>th</sup>

<b>7:15 am</b>	Continental Breakfast	DMC 101
<b>7:50 am</b>	Welcome	DMC 101
<b>8:15 am</b>	<b>RTA Initiative Reports:</b> 1. Faculty Development (VETS) 2. Local Peer Observation 3. External Review of Teaching	
<b>9:15 am</b>	<i>Break</i>	DMC 101
<b>9:45 am</b>	<b>Keynote Workshop:</b> " Critical Thinking/Clinical Reasoning Part 1	B213
<b>11:45 am</b>	<i>Lunch</i>	DMC 101
<b>12:45 pm</b>	<b>Scholarship Session</b> – Peer reviewed (podium presentations of accepted abstracts)	B213
<b>1:45 pm</b>	<b>Workshop:</b> External Peer Review of Teaching Promotion Packet	B213
<b>3:15 pm</b>	<b>Wellness-</b> Optimizing Student and Faculty Well Being & Break	B213

<b>3:45 pm</b>	<b>Technology in Teaching</b> (Response Systems)	B213
<b>4:30 pm</b>	<b>Teaching Experiments</b>	B213
<b>5:00 pm</b>	<i>Break</i>	
<b>6:00 pm</b>	Social and Dinner	<a href="#">Rio Grande</a> (143 Mountain Ave)

### Friday, July 14<sup>h</sup>

<b>7:15 am</b>	Continental Breakfast	ACC 120
<b>7:50 am</b>	Conference Announcements	ACC 120
<b>8:00 am</b>	<b>Teaching Experiments</b>	ACC 120
<b>9:00 am</b>	<b>Keynote Workshop:</b> Critical Thinking/Clinical Reasoning Part 2	ACC 120
<b>10:15 am</b>	<b>Wellness-</b> Optimizing Student and Faculty Well Being & Break	ACC 120
<b>10:45 am</b>	<b>Workshop:</b> Peer Observation of clinical / small group teaching	ACC 120
<b>11:45 am</b>	<i>Lunch</i>	ACC 120
<b>12:45 pm</b>	<b>Scholarship Session</b> – Peer reviewed (podium presentations of accepted abstracts)	ACC 120
<b>1:45 pm</b>	<b>Wellness-</b> Optimizing Student and Faculty Well Being & Break	ACC 120
<b>2:15 pm</b>	<b>Teaching Experiments</b>	ACC 120
<b>2:45 pm</b>	<b>Workshop:</b> VETS Program – Assessment	ACC 120
<b>4:15 pm</b>	Conference Wrap-up & RTA Town Hall (everyone is encouraged to take part)	ACC 120

Research Posters will be displayed on a digital monitor, as well as on the walls in the meeting rooms both days of the conference. Please stop by and take a look at these and connect with poster authors

## CONFERENCE DETAILS



### Keynote Workshop Speakers:



Dr. Celeste Royce, MD is a generalist in obstetrics and gynecology, and practices at the Bowdoin Street Health Center, a community health center providing comprehensive medical care to a predominantly immigrant, culturally diverse and socio-economically challenged population in Dorchester, MA. Dr. Royce is the Clerkship Director for the department of Obstetrics and Gynecology at Beth Israel Deaconess Medical Center (BIDMC), and the course director for the fourth year elective Boot Camp at Harvard Medical School.



Dr. Kathleen Huth, BAsC, MD, FRCPC is a pediatrician at the Children's Hospital of Eastern Ontario and a Lecturer in the Department of Pediatrics at the University of Ottawa. She is completing a Master of Medical Sciences in Medical Education at Harvard Medical School in Boston, Massachusetts. Her clinical and research interests are in teaching critical thinking and communication skills, particularly in the care of children with medical complexity. Dr. Huth has a scholarly interest in behavioral economics and judgment under uncertainty; and has developed educational resources for improving critical thinking for post-doctoral students, medical students, residents and faculty.

**Session Co-Chairs** – Steve Hines (WSU) and Rachel Halsey (WSU)

### **KEYNOTE WORKSHOPS (THURSDAY & FRIDAY): “THINKING ABOUT OUR THINKING: AN EXPLORATION OF COGNITIVE BIASES AND STRATEGIES FOR TEACHING CRITICAL THINKING”**

Critical thinking is an essential skill for sound decision-making in the scientific disciplines, yet it is challenging to develop and to teach. In this two-part session, participants will engage in interactive activities that highlight “how we think”, and use their new knowledge to identify examples of cognitive biases in their own clinical and educational context. Participants will have an opportunity to practice strategies for teaching critical thinking and to develop plans for putting them into action in their home institutions. Designed for a broad audience including basic scientists, clinicians, and educators, these workshops will offer a toolkit to help participants—and their learners—develop as critical thinkers. Our workshop leaders are from [The Academy at Harvard Medical School](#) (Celeste Royce, MD, and Kathleen Huth, MD, FRCPC).

## RTA Initiative Workshops:

### **External Peer Review of Teaching: Promotion Packet**

**Session Co-Chairs** – Steve Hines (WSU) and Peggy Barr (WUHS), with assistance from the EPRT Initiative Working Group

**Topic:** The goal of this workshop is to roll out the RTA’s new process for external peer review of promotion packets. After a brief review of the process and plans, you will begin to learn how to prepare your packet and/or how to coach others at preparing theirs. Coaches are a high priority as we begin to utilize this process to “Make Teaching Matter.” Participants will use an inventory to identify the educational domains where they (or their colleagues) have been active and draft a section of an Educator’s CV. Utilizing the RTA-provided templates, participants will then draft an Executive Summary and at least one domain for a Teaching Portfolio. At the end of the session, we will talk about plans for reviewing promotion packets and solicit your feedback. IF POSSIBLE: Please bring your laptop or tablet, so you can access the EPRT web site.

### **Local Peer Review (observation!) of Teaching**

**Session Co-Chairs:** Diana Hassel (CSU) and Elena Gorman (OSU)

**Topic:** In this session we will put Local Peer Observation tools developed by the RTA to work for both large group/didactic settings as well as small group/clinical settings. Learn how to integrate these tools into your own academic setting as a useful and easy mechanism to enhance teaching.

### **Faculty Development Working Group - "VETS - Veterinary Educator Training and Scholarship – Assessment**

**Session Chair:** Kristy Dowers (CSU)

**Topic:** Assessing student understanding is a critical component of any education program. Often, the level at which students need to be able to demonstrate their understanding changes throughout a program. Unfortunately, for many of us, the tools with which we are familiar for assessing students – quizzes, tests, checklists, etc. – may not allow us to assess at different levels of understanding (e.g., recall, application, synthesis, etc.). In this interactive session, we will explore assessment strategies that allow students to demonstrate understanding of topics at many different levels and discuss implications for our programs.

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## Effective Use of Technology in Teaching / Student Response Systems

**Session Chair** – Leslie Sprunger (WSU)

This will be an informal and interactive session to discuss and share best practices for use of audience response systems (“clickers”) in teaching. The emphasis will be on pedagogy of using response systems in general rather than the technical details of any particular system.

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## Experiments in Teaching:

**Session Chair** – Barbara Byrne (UCD)

Are you interested in using technology in some interesting way, tweaking an approach to make sure students come to class or rounds prepared, experimenting with a different way of using cases? Come to the “Experiments in Teaching” session to see how other teachers are stretching their limits to reinvigorate their students’ learning.

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## Scholarship Sessions:

**Session Chair** – Ohad Levi (WU)

Scholarship Sessions will provide an avenue for RTA Fellows and others to publicly disseminate scholarly work regarding teaching and learning, including investigation into novel teaching modalities, best practices and/or educational materials.

The scholarship sessions is a great way to share work aligned with the original intent of the Academy, to:

- Generate innovative concepts for the advancement of veterinary education
- Develop, review and disseminate best practices in veterinary education
- Contribute to and promote the development of instructional/teaching scholarships
- Provide, promote and develop educational/instructional leadership

The scholarship presentations that will be presented are listed below and included a diverse range of topics on student assessment and training techniques; client interactions; and faculty development. These diverse subjects will hopefully stimulate fruitful discussions leading to new connections among participants. This session is an opportunity, a potential launching pad, for new areas of focus and topics for future collaborations.

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## Networking and Communities of Practice

Collaboration and networking are one of the foundational concepts of the Regional Teaching Academy. Research has shown that having a network of colleagues that are interested in the same interest areas will increase productivity. During this year’s biennial conference we will explore and expand your opportunity to connect with colleagues in the same subject area and interests.

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## Optimizing Student and Faculty Well-Being:

**Session Chair** – Laurie Fonken (CSU)

“Optimizing Well-Being” A series of short informative sessions which will encourage consideration, of and dialogue on, both personal and professional well-being. Sessions will offer strategies and tips on how to actualize well-being as an everyday practice.

## SCHOLARSHIP SESSION:



### SUBMITTED ABSTRACTS:

*Listed in order of presentation*

<b>Presenter</b>	<b>Institution</b>	<b>Title</b>
Susan Matthew	Washington State University	Evaluating the quality of veterinary students' conceptions of and approaches to clinic-based learning in the transition to practice.
Paul Ross-Gordon	Western University of Health Sciences	A mixed methods exploration of first year veterinary students' learning experience in a molecular and cellular biology course.
Julie Noyes	Washington State University	Comparative Effectiveness of simulation training versus other instructional methods in veterinary education: A systematic review and meta-analysis.
Chris Thomson	University of Alaska/ Colorado State University	The Fritz Factor: Teaching vet students about 'the burden of chronic care' experienced by clients.
Peggy Barr	Western University of Health Sciences	Qualitative exploration of preceptor assessment practices of student pharmacology knowledge in a distributed veterinary medical clinical curriculum.
Jillian Haines	Washington State University	Educating Veterinary Students in an Intensive Care Unit about Transfusion Reactions: Development and Impact of a Formal Learning Module
Dean Hendrickson	Colorado State University	Equine Veterinary Curriculum Review What are the strengths, weaknesses, gaps, and redundancies in the CSU equine curriculum
Ohad Levi	Western University of Health Sciences	The use of head camera for video self-assessment of surgical performance of veterinary students.

*See page 15 for full abstracts of the Scholarship Presentations*

# EXPERIMENTS IN TEACHING:



## SUBMITTED ABSTRACTS:

*Listed in order of presentation*

<b>Presenter</b>	<b>Institution</b>	<b>Title</b>
Rachel Halsey	Washington State University	Using a multimedia approach to prepare students for a complex multiday learning experience
Dean Hendrickson	Colorado State University	Using screen sharing software to increase the communication of ideas in the classroom
Duncan Russell	Oregon State University	Error management training in veterinary students learning blood smear analysis
Kristy Dowers	Colorado State University	Introducing clinical reasoning into a DVM curriculum (years 1-3)
Stephen Hines	Washington State University	Creating illness scripts - the pathology way! An active integration exercise
Joie Watson	University of California – Davis	Implementing a social reading platform, Perusall, in a first year veterinary course
Jennifer McLean & Erica Suchman	Colorado State University	Ideas for making large lecture undergraduate courses more interactive
Phil Mixter	Washington State University	Adventures in a classroom space designed for active learning

*See page 21 for full abstracts of the Experiment in Teaching Presentations*

## Current Fellows:



Paul	Avery	<a href="mailto:paul.avery@colostate.edu">paul.avery@colostate.edu</a>	Colorado State University
Anna	Alcaraz	<a href="mailto:aalcaraz@westernu.edu">aalcaraz@westernu.edu</a>	Western University
Lora	Ballweber	<a href="mailto:lora.ballweber@colostate.edu">lora.ballweber@colostate.edu</a>	Colorado State University
Peggy	Barr	<a href="mailto:pbarr@westernu.edu">pbarr@westernu.edu</a>	Western University
Linda	Barter	<a href="mailto:lsbarter@ucdavis.edu">lsbarter@ucdavis.edu</a>	University of California, Davis
Karyn	Bird	<a href="mailto:karyn.bird@oregonstate.edu">karyn.bird@oregonstate.edu</a>	Oregon State University
Beth	Boynton	<a href="mailto:bboynton@westernu.edu">bboynton@westernu.edu</a>	Western University
Barb	Byrne	<a href="mailto:bbyrne@ucdavis.edu">bbyrne@ucdavis.edu</a>	University of California, Davis
Jennifer	Buur	<a href="mailto:jbuur@westernu.edu">jbuur@westernu.edu</a>	Western University
Bonnie	Campbell	<a href="mailto:bjgc@vetmed.wsu.edu">bjgc@vetmed.wsu.edu</a>	Washington State University
Julie	Cary	<a href="mailto:jcary@vetmed.wsu.edu">jcary@vetmed.wsu.edu</a>	Washington State University
Patrick	Chappell	<a href="mailto:pat.chappell@oregonstate.edu">pat.chappell@oregonstate.edu</a>	Oregon State University
Betsy	Charles	<a href="mailto:betsycharles@mac.com">betsycharles@mac.com</a>	Western University
Munashe	Chigerwe	<a href="mailto:mchigerwe@ucdavis.edu">mchigerwe@ucdavis.edu</a>	University of California, Davis
Tod	Clapp	<a href="mailto:tod.clapp@colostate.edu">tod.clapp@colostate.edu</a>	Colorado State University
Po Yet	Chou	<a href="mailto:pchou@ucdavis.edu">pchou@ucdavis.edu</a>	University of California, Davis
Patricia	Cole	<a href="mailto:Patricia.Cole@colostate.edu">Patricia.Cole@colostate.edu</a>	Colorado State University
William (Bill)	Davis	<a href="mailto:wbdavis@vetmed.wsu.edu">wbdavis@vetmed.wsu.edu</a>	Washington State University
Julie	Dechant	<a href="mailto:jedechant@ucdavis.edu">jedechant@ucdavis.edu</a>	University of California, Davis
Kristy	Dowers	<a href="mailto:kristy.dowers@colostate.edu">kristy.dowers@colostate.edu</a>	Colorado State University
Maria	Fahie	<a href="mailto:mfahie@westernu.edu">mfahie@westernu.edu</a>	Western University
Laurie	Fonken	<a href="mailto:laurie.fonken@colostate.edu">laurie.fonken@colostate.edu</a>	Colorado State University
Samantha	Gizerian	<a href="mailto:sgizerian@vetmed.wsu.edu">sgizerian@vetmed.wsu.edu</a>	Washington State University
Jana	Gordon	<a href="mailto:Jana.Gordon@oregonstate.edu">Jana.Gordon@oregonstate.edu</a>	Oregon State University
Paul	Gordon- Ross	<a href="mailto:pgordon@westernu.edu">pgordon@westernu.edu</a>	Western University
Elena	Gorman	<a href="mailto:elena.gorman@oregonstate.edu">elena.gorman@oregonstate.edu</a>	Oregon State University
J. Claudio	Gutierrez	<a href="mailto:jcgutierr@ucdavis.edu">jcgutierr@ucdavis.edu</a>	University of California, Davis
Jillian	Haines	<a href="mailto:jmhaines@vetmed.wsu.edu">jmhaines@vetmed.wsu.edu</a>	Washington State University
Gary	Haldorson	<a href="mailto:gjh@vetmed.wsu.edu">gjh@vetmed.wsu.edu</a>	Washington State University
Spring	Halland	<a href="mailto:shalland@westernu.edu">shalland@westernu.edu</a>	Western University
Diana	Hassel	<a href="mailto:dhassel@colostate.edu">dhassel@colostate.edu</a>	Colorado State University
Dean	Hendrickson	<a href="mailto:dean.hendrickson@colostate.edu">dean.hendrickson@colostate.edu</a>	Colorado State University
Steve	Hines	<a href="mailto:shines@vetmed.wsu.edu">shines@vetmed.wsu.edu</a>	Washington State University
Karsten	Hueffer	<a href="mailto:khueffer@alaska.edu">khueffer@alaska.edu</a>	Colorado State University/University of Alaska
Jan	Ilkiw	<a href="mailto:jeilkiw@ucdavis.edu">jeilkiw@ucdavis.edu</a>	University of California, Davis

Malika	Kachani	<a href="mailto:mkachani@westernu.edu">mkachani@westernu.edu</a>	Western University
David	Kersey	<a href="mailto:dkersey@westernu.edu">dkersey@westernu.edu</a>	Western University
Linda	Kidd	<a href="mailto:lkidd@westernu.edu">lkidd@westernu.edu</a>	Western University
Suzie	Kovacs	<a href="mailto:skovacs@westernu.edu">skovacs@westernu.edu</a>	Western University
Suzanne	Kurtz	<a href="mailto:smkurtz@vetmed.wsu.edu">smkurtz@vetmed.wsu.edu</a>	Washington State University
Steve	Lampa	<a href="mailto:lampa@vetmed.wsu.edu">lampa@vetmed.wsu.edu</a>	Washington State University
Pamela	Lee	<a href="mailto:pamelamlee@vetmed.wsu.edu">pamelamlee@vetmed.wsu.edu</a>	Washington State University
Ohad	Levi	<a href="mailto:olevi@westernu.edu">olevi@westernu.edu</a>	Western University
Christiane	Lohr	<a href="mailto:christiane.loehr@oregonstate.edu">christiane.loehr@oregonstate.edu</a>	Oregon State University
Linda	Martin	<a href="mailto:lgmartin@vetmed.wsu.edu">lgmartin@vetmed.wsu.edu</a>	Washington State University
Susan	Matthew	<a href="mailto:smatthew@vetmed.wsu.edu">smatthew@vetmed.wsu.edu</a>	Washington State University
Diane	McClure	<a href="mailto:dmccclure@westernu.edu">dmccclure@westernu.edu</a>	Western University
Brett	McNabb	<a href="mailto:brmcnabb@ucdavis.edu">brmcnabb@ucdavis.edu</a>	University of California, Davis
Stuart	Meyers	<a href="mailto:smeyers@ucdavis.edu">smeyers@ucdavis.edu</a>	University of California, Davis
Phil	Mixer	<a href="mailto:pmixer@vetmed.wsu.edu">pmixer@vetmed.wsu.edu</a>	Washington State University
Elizabeth	Montgomery	<a href="mailto:eamontgomery@ucdavis.edu">eamontgomery@ucdavis.edu</a>	University of California, Davis
Brian	Murphy	<a href="mailto:bmurphy@ucdavis.edu">bmurphy@ucdavis.edu</a>	University of California, Davis
Lynne	Nelson	<a href="mailto:olnelson@vetmed.wsu.edu">olnelson@vetmed.wsu.edu</a>	Washington State University
Erika	Offerdahl	<a href="mailto:eofferdahl@vetmed.wsu.edu">eofferdahl@vetmed.wsu.edu</a>	Washington State University
Birgit	Puschner	<a href="mailto:bpuschner@ucdavis.edu">bpuschner@ucdavis.edu</a>	University of California, Davis
Duncan	Russell	<a href="mailto:duncan.russell@oregonstate.edu">duncan.russell@oregonstate.edu</a>	Oregon State University
Peggy	Schmidt	<a href="mailto:pschmidt@westernu.edu">pschmidt@westernu.edu</a>	Western University
Jane	Shaw	<a href="mailto:jane.shaw@colostate.edu">jane.shaw@colostate.edu</a>	Colorado State University
Daniel	Smeak	<a href="mailto:dan.smeak@colostate.edu">dan.smeak@colostate.edu</a>	Colorado State University
Martin	Smith	<a href="mailto:mhsmith@ucdavis.edu">mhsmith@ucdavis.edu</a>	University of California, Davis
Leslie	Sprunger	<a href="mailto:lsprunger@vetmed.wsu.edu">lsprunger@vetmed.wsu.edu</a>	Washington State University
Erica	Suchman	<a href="mailto:Erica.suchman@colostate.edu">Erica.suchman@colostate.edu</a>	Colorado State University
John	Tegzes	<a href="mailto:jtegzes@westernu.edu">jtegzes@westernu.edu</a>	Western University
Suzana	Tkalcic	<a href="mailto:stkalcic@westernu.edu">stkalcic@westernu.edu</a>	Western University
Christine	Thomson	<a href="mailto:cthompson2@alaska.edu">cthompson2@alaska.edu</a>	Colorado State University/University of Alaska
William	Vernau	<a href="mailto:wvernau@ucdavis.edu">wvernau@ucdavis.edu</a>	University of California, Davis
Joie	Watson	<a href="mailto:jlwatson@ucdavis.edu">jlwatson@ucdavis.edu</a>	University of California, Davis
Andrew	West	<a href="mailto:andrew.west2@colostate.edu">andrew.west2@colostate.edu</a>	Colorado State University

### Invited Conference Guests:

Amy J. Rankin	<a href="mailto:arankin@vet.k-state.edu">arankin@vet.k-state.edu</a>	Kansas State University
Brianna R Beechler	<a href="mailto:breebeechler@gmail.com">breebeechler@gmail.com</a>	Oregon State University
Caroline Cantner	<a href="mailto:ccantner@avma.org">ccantner@avma.org</a>	AVMA

Cathryn Sparks	<a href="mailto:csparks@vet.k-state.edu">csparks@vet.k-state.edu</a>	Kansas State University
Celeste Royce	<a href="mailto:croyce@bidmc.harvard.edu">croyce@bidmc.harvard.edu</a>	Harvard Medical School
Chrissy Eckstrand	<a href="mailto:ceckstrand@vetmed.wsu.edu">ceckstrand@vetmed.wsu.edu</a>	Washington State University
Christie Mayo	<a href="mailto:Christie.Mayo@colostate.edu">Christie.Mayo@colostate.edu</a>	Colorado State University
CWMiller	<a href="mailto:Charles.Miller@colostate.edu">Charles.Miller@colostate.edu</a>	Colorado State University
D. N. Rao Veeramachaneni	<a href="mailto:rao@colostate.edu">rao@colostate.edu</a>	Colorado State University
Doreene Hyatt	<a href="mailto:drhyatt@colostate.edu">drhyatt@colostate.edu</a>	Colorado State University
Dustin Sean Adams	<a href="mailto:adamds@colostate.edu">adamds@colostate.edu</a>	Colorado State University
Jennifer McLean	<a href="mailto:jennifer.mclean@colostate.edu">jennifer.mclean@colostate.edu</a>	Colorado State University
Judy Klimek	<a href="mailto:jklimek@vet.k-state.edu">jklimek@vet.k-state.edu</a>	Kansas State University
Julie Noyes	<a href="mailto:jnoyes@vetmed.wsu.edu">jnoyes@vetmed.wsu.edu</a>	Washington State University
Karen Boudreaux	<a href="mailto:kaboudreaux@ucdavis.edu">kaboudreaux@ucdavis.edu</a>	University of California, Davis
Kathleen Huth	<a href="mailto:kathleen_huth@hms.harvard.edu">kathleen_huth@hms.harvard.edu</a>	Harvard Medical School
Ken Noriega	<a href="mailto:knoriega@westernu.edu">knoriega@westernu.edu</a>	Western University
Leslie Stone-Roy	<a href="mailto:Leslie.Stone-Roy@Colostate.EDU">Leslie.Stone-Roy@Colostate.EDU</a>	Colorado State University
Linda Vap	<a href="mailto:linda.vap@colostate.edu">linda.vap@colostate.edu</a>	Colorado State University
Marcela Henao-Tamayo	<a href="mailto:marceiht@colostate.edu">marceiht@colostate.edu</a>	Colorado State University
Mary Lassaline	<a href="mailto:lasutter@ucdavis.edu">lasutter@ucdavis.edu</a>	University of California, Davis
Michael Lairmore	<a href="mailto:mdlairmore@ucdavis.edu">mdlairmore@ucdavis.edu</a>	University of California, Davis
Michala de Linde Henriksen	<a href="mailto:michaladelinde@icloud.com">michaladelinde@icloud.com</a>	Colorado State University
Natascha Heise	<a href="mailto:heise.natascha@gmail.com">heise.natascha@gmail.com</a>	Colorado State University
Peggy Schmidt	<a href="mailto:peggyschmidt@vet.k-state.edu">peggyschmidt@vet.k-state.edu</a>	Kansas State University
Penny J. Regier	<a href="mailto:pennyjregier@gmail.com">pennyjregier@gmail.com</a>	Colorado State University
Roberta OConnor	<a href="mailto:roboconnor@vetmed.wsu.edu">roboconnor@vetmed.wsu.edu</a>	Washington State University
Sreekanth Puttachary	<a href="mailto:sreekanth.puttachary@oregonstate.edu">sreekanth.puttachary@oregonstate.edu</a>	Oregon State University
Susan Tornquist	<a href="mailto:Susan.Tornquist@oregonstate.edu">Susan.Tornquist@oregonstate.edu</a>	Oregon State University

## COMMITTEE DETAILS:

## Steering Committee:

The Steering Committee is the governing force that directs the detailed functions and affairs of the Teaching Academy. The duties of the steering committee are to oversee the activities of the academy; serve as Academy Liaisons for their respective colleges; determine priorities; approve budgets and identify resources; establish benchmarks and metrics to determine success; and promote the teaching mission of the Academy.

The Steering Committee consists of two representatives from each of the Consortium member colleges. Initial members of the Steering Committee were appointed by their respective Deans with one serving a two-year term and one serving a three-year term. Thereafter, members will be elected in alternate years by a majority vote of the membership from the respective college and shall serve a two-year term.

## Membership Committee:

The Membership Committee is responsible for evaluating applications for membership and making recommendations to the academy for appropriate action. This committee will review and update the application process and the membership roster annually. The committee will be chaired by a member of the Academy Steering Committee. Membership will consist of two members from each consortium institution, nominated and elected by the membership from that institution.

## Biennial Meeting Planning Committee:

The Biennial Meeting Planning Committee is responsible for planning a biennial meeting of the academy. Members of this committee include a representative from each institution and a few more members from the hosting institution. The location of the meeting will rotate among the five institutions.

## Working Group – Project Based:

The expectations for the working groups are to make significant progress in the coming year on the chosen TA projects. The group(s) will meet regularly by electronic means and face-to-face at least once, possibly in conjunction with a Steering Committee meeting. The group(s) will also have administrative assistance to help them stay on track and reach their end goal.

## Faculty Development Working Group:

In January 2014, the FDWG identified the goals of the initiative, to design and implement a faculty development program for new-to-teaching faculty.

A needs-assessment survey was sent to faculty at RTA member institutions and a program was then developed to foster a culture of evidence-based best practices in teaching by providing professional development in:

- Principles of teaching and learning
- Outcomes and student assessment
- Approaches to student-teacher interactions

The FDWG set out to develop educational modules that could benefit all faculty, but were designed to benefit early career faculty; these modules could then be used as a part of a full program or as stand-alone sessions (one or more modules) for faculty development. The faculty development program was designed based on the findings of Steinert et al. (2016) who identified key features of effective faculty development programs including, “evidence-informed educational design, relevant content, experiential learning, feedback and reflection, educational projects, intentional community building, longitudinal program design, and institutional support”.

For more information: <https://teachingacademy.westregioncvm.org/initiative-faculty-development/>

## External Review of Teaching Working Group:

**GOAL:** The goal of this initiative is to address 2 major obstacles to recognizing and rewarding teaching in our colleges:

1. The lack of defined and ready-to-use tools to assess teaching, teaching-related professional activities, and the scholarship of teaching.
2. The lack of a respected and rigorous external review process.

The RTA’s Educator’s Promotion Packet guidelines and format are intended to (a) to provide an evidence-based dossier template for faculty with significant teaching and/or educational leadership responsibilities, so that (b) promotion packets might be more fairly and rigorously reviewed – including, ideally, by qualified external reviewers.

For more information:

[https://teachingacademy.westregioncvm.org/initiative\\_eprt/](https://teachingacademy.westregioncvm.org/initiative_eprt/)

## Local Peer Observation of Teaching Working Group:

At the 2015 summer RTA conference in Pullman, Washington, this working group was tasked with generating a useful and workable system of local (AKA institutional) peer review/observation. The primary goal of this entire process is to enhance teaching.

Our group developed:

- Two straightforward instruments designed to facilitate the peer observation process
- A set of guiding principles, or best practices, to facilitate implementation of local peer observation

Emphasis is placed on “observation/reflection” rather than “evaluation” of teaching. We have attempted to navigate the narrow passage between a useful, expedient system of peer observation and yet another unsolicited mandate on faculty time and creativity.

For more information: <https://teachingacademy.westregioncvm.org/initiative-localpeerobservation/>

## SCHOLARSHIP ABSTRACTS

Susan Matthew

*Washington State University*

### ***EVALUATING THE QUALITY OF VETERINARY STUDENTS' CONCEPTIONS OF AND APPROACHES TO CLINIC-BASED LEARNING IN THE TRANSITION TO PRACTICE.***

***Matthew SM<sup>1</sup>, Ellis RA<sup>2</sup>, Taylor RM<sup>3</sup>***

*1 Department of Veterinary Clinical Sciences, College of Veterinary Medicine, Washington State University, Pullman WA*

*2 Education Portfolio, The University of Sydney NSW 2006, Australia*

*3 Sydney School of Veterinary Science, The University of Sydney NSW 2006, Australia*

**Objective:** The purpose of this research was to identify quantitative survey items that revealed the quality of veterinary students' conceptions of and approaches to clinic-based learning and relate these to student performance in clinics.

**Study Design:** This study used a cross-sectional survey design.

**Methods:** The participants in this study were final year veterinary students from the same cohort (N=100). Prior qualitative research into clinic-based learning (Matthew, Taylor and Ellis 2010) was used to create a Conceptions of Clinic-Based Learning Questionnaire. An Approaches to Clinic-Based Learning questionnaire was contextualized from the revised two-factor Study Process Questionnaire (Biggs, Kember and Leung 2001) that has been used in a range of education contexts. Student achievement in clinics was measured by results on Supervisor Report Forms submitted at the end of each rotation. Descriptive and exploratory statistics were used to identify items that established the quality of students' conceptions of and approaches to clinic-based learning and link these to achievement.

**Results:** A 93% response rate was obtained for the paired questionnaires used in this research. Eight items were identified that revealed the quality of students' conceptions of clinic-based learning. Ten

items were identified that revealed the quality of students' approaches to clinic-based learning. Students who reported poorer-quality conceptions of and approaches to clinic-based learning (n=38) attained lower levels of achievement than those who reported better-quality conceptions of and approaches to CBL.

**Conclusions:** Educators can use the survey items identified in this research as part of comprehensive outcomes assessment of students' learning in clinics.

## Paul Gordon-Ross

*Western University of Health Sciences*

### ***A MIXED METHODS EXPLORATION OF FIRST YEAR VETERINARY STUDENTS' LEARNING EXPERIENCE IN A MOLECULAR AND CELLULAR BIOLOGY COURSE -***

Kaur G, Gordon-Ross P

**Abstract:** The goal of the Molecular and Cellular Biology course is to develop veterinary students' ability in interpreting scientific literature. Additionally, the course is designed to enhance student's knowledge of the basic sciences through critical review of assigned scientific articles followed by content expert led discussions of biochemical, cellular, and/or molecular topics presented in each article. The standard end of semester course evaluations focus on learning outcomes and not the learning experience. The purpose of this study was to explore student learning experience. At the end of the course, students were invited to complete a survey that asked about their learning experience, the factors affecting their learning, and how the course impacted their learning in context of the curriculum. Follow-up interviews were conducted. Qualitative data were explored using template analysis. Following themes arose from the data: positive learning experience; maintaining alignment of the course with the overall curriculum enhanced learning; primary literature relevant to the current clinical case were helpful; shorter, easier to read articles enhanced learning; the course reinforced learning and encouraged reading of primary literature; lengthier articles required excessive time and decreased motivation; the course increased student ability to comprehend scientific literature; the course enhanced the student's learning experience in context of the curriculum; and the ability to comprehend primary literature will be helpful in future. Understanding the student learning experience, in addition to learning outcomes, provides comprehensive information about the course and adding the qualitative data to standardized numeric course evaluation, makes course improvement more accurate and efficient.

## Julie Noyes

*Washington State University*

### ***COMPARATIVE EFFECTIVENESS OF SIMULATION TRAINING VERSUS OTHER INSTRUCTIONAL METHODS IN VETERINARY EDUCATION: A SYSTEMATIC REVIEW AND META-ANALYSIS - Noyes JA<sup>1,2</sup>, Adesope SO<sup>2</sup>, Carbonneau KJ<sup>2</sup>, Matthew SM<sup>1,2</sup>***

*1 Department of Veterinary Clinical Sciences, College of Veterinary Medicine, Washington State University, Pullman WA*

*2 Department of Educational Leadership, Sport Studies, and Educational/Counseling Psychology*

**Objective:** To comprehensively search, critically appraise, and quantitatively synthesize the evidence regarding the effectiveness of simulation training in comparison with other instructional methods used in veterinary education.

**Study Design:** Systematic review and meta-analysis

**Methods:** A search of major databases (PubMed, Web of Science, CAB Abstracts), key journals, and previous reviews from 1970 through August 2016 was conducted. Extracted information included instructional design, simulation features, control method, learner profiles, quality of studies and outcomes.

**Results:** A total of 416 relevant records were identified and screened for inclusion, with 175 full-text articles then assessed for eligibility. Twenty-six independent studies were extracted from 21 reports. The overall weighted mean effect size was moderate for the fixed effects model and moderately strong for the random effects model ( $g=0.34$ ,  $0.66$  respectively). All clinical outcome measures produced significant ( $p<.001$ ) large mean effect sizes in favor of simulation. Effect for skill outcomes measured by timing ( $g=0.89$ ) and process ( $g=0.74$ ) were homogeneous while those measured by product ( $g=0.89$ ) were highly heterogeneous with a statistically significant Q test ( $p<.001$ ) and corresponding moderately high I<sup>2</sup> (69%).

**Conclusions:** This analysis revealed a significant and moderately large effect on learning when students are trained through simulation versus traditional methods. Additional research may elucidate potential moderating variables when clinical skills are measured by product (defined as successful task completion). The results of the current research can help veterinary institutions make informed decisions for academic policy, propel future research and direct funds towards instructional methods that have been shown to increase clinical skills.

## Christine Thomson

*University of Alaska / Colorado State University*

***THE FRITZ FACTOR: TEACHING VET STUDENTS ABOUT ‘THE BURDEN OF CHRONIC CARE’ EXPERIENCED BY CLIENTS*** - Thomson CE<sup>1</sup>, Reynolds RJ<sup>1</sup>, Seed BV<sup>1</sup>, Fonken L<sup>2</sup>.

1. *Department of Veterinary Medicine, University of Alaska, Fairbanks, AK.*
2. *College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO.*

Owning a chronically ill or disabled animal can be challenging – physically, mentally, emotionally and financially. As vets do we really understand ‘the burden of chronic care’ that some of our clients experience?

For second year Vet Med students at UAF, we developed an elective course in chronic care. The aims of the course were increasing student awareness about issues associated with chronic care, both technical and non-technical.

3/10 students took the one semester course working with ‘Fritz’ a Doberman-mix dog diagnosed with fibrocartilagenous infarction. Fritz was paralyzed, with no deep pain perception, three months before the course began. The students were responsible for caring for Fritz 1-2 days per week. Additionally they selected a weekly discussion topic from the references cited below. For assessment, each student had to a) describe their pre-course

expectations; b) write a weekly reflection on their experiences caring for Fritz and their learning points from the discussion topic; c) a post-course reflection.

From a clinical (technical) perspective, following Fritz's neurological journey from paralysis to spinal walking helped reinforce the students' clinical neurology education. The weekly discussion topics provided a useful forum for raising their awareness about a variety of technical and non-technical subjects.

The non-technical outcomes of this course are subjective. Reviewing students' reflections indicate that they developed a greater understanding and empathy for the challenges facing owners who have to care for chronic patients.

But how best to objectively analyze these reflections?

We'll be asking this question of the RTA members during this presentation.

#### References:

1. Veterinary Clinics of North America: Small Animal Practice; Palliative Medicine and Hospice Care Edited by Tamara S. Shearer. Volume 41, Issue 3, Pages 477-702 (May 2011)
2. BSAVA Manual of Canine and Feline Rehabilitation, Supportive and Palliative Care: Case Studies in Patient Management. BSAVA, Gloucester, UK (2010)

## Jillian Haines

*Washington State University*

### ***Educating Veterinary Students in an Intensive Care Unit about Transfusion***

***Reactions: Development and Impact of a Formal Learning Module*** - Haines, J.M.<sup>1</sup>, Wardrop, K.J.<sup>1</sup>, Lindberg, C.<sup>2</sup>, Ngwenyama, T.<sup>1</sup>, Martin, L.<sup>1</sup>

1. *Veterinary Clinical Sciences, College of Veterinary Medicine, Washington State University, Pullman, WA*
2. *Dean's Office, College of Veterinary Medicine, Washington State University, Pullman, WA*

**Objectives:** To develop and test the instructional efficacy of an online learning module on transfusion reactions in small animals and to evaluate participants' satisfaction of the module.

**Study Design:** Randomized controlled trial

**Methods:** Content for the module was developed by veterinary specialists in the areas of internal medicine, critical care, and clinical pathology and designed by an instructional design coordinator. The interactive module covered recognition, treatment, prevention, case examples, and self-assessment questions for 6 common transfusion reactions. Fourth year veterinary students in a critical care rotation were randomly selected to either receive the instructional module (treatment group) or only receive standard rotation instruction on transfusion reactions (control group). Two tests covering the same concepts were developed and students randomly received 1 as a pretest at the start of rotation and the other as a posttest at the end of the 2 week rotation. Immediately following the pretest, the treatment group received the module and module survey. All students were to receive a retention test 1 month later.

**Preliminary Results:** Early results show an increase in post-module test scores over pre-module test scores, pretest median (range) 7 (6-9) and posttest 8 (7-10). Sufficient data is

not yet available for retention tests or control scores. Initial survey results showed strong satisfaction with the module.

**Conclusions:** A transfusion reaction instructional module can be delivered successfully to veterinary students on clinical rotation and is generally considered beneficial by the students. Preliminary data suggests an improvement in transfusion reaction knowledge following completion of the module.

## Peggy Barr

*Western University of Health Sciences*

### ***QUALITATIVE EXPLORATION OF PRECEPTOR ASSESSMENT PRACTICES OF STUDENT PHARMACOLOGY KNOWLEDGE IN A DISTRIBUTED VETERINARY MEDICAL CLINICAL CURRICULUM*** - Buur J, Gordon-Ross P, Haupt M, Barr MC

Veterinary medical graduates are expected to be competent in clinical pharmacology. During training in a distributive clinical curriculum, the assessment of student knowledge and skills in pharmacology is performed, in part, by third party preceptors. Understanding how preceptors assess student competence in pharmacology is essential to maintaining course alignment. Thus, the objective of this study is to explore how third party preceptors assess student competency in pharmacology. Specifically, what actions, behaviors, and attitudes of students do preceptors use to assess student pharmacology knowledge? Does preceptor assessment of pharmacology knowledge and skills align with course-specific learning objectives and goals? To answer these questions, a qualitative study was conducted to explore the preceptor's experience when assessing student knowledge in pharmacology. Maximal diversity sampling was undertaken to select which preceptors to include in the study. Recorded interviews were qualitatively analyzed for emergent themes that illuminate the preceptor's experience of assessing student knowledge. Preliminary results have identified emergent themes including the expectation of codified knowledge versus procedural knowledge, preceptor styles of inquiry, and perceived student enthusiasm and engagement in their clinical patients. Preceptors described a wide range of behaviors as competence. Review of course syllabi revealed generalized expectations for clinical skills, but not pharmacology-specific knowledge and skills. Thus, there appears to be misalignment between course objectives and preceptor assessment. In conclusion, gaps between course objectives and preceptor assessment have been identified and explored. Understanding the assessment process used by preceptors can assist curricular designers and course leaders to ensure course and curricular alignment.

## Dean Hendrickson

*Colorado State University*

### ***Equine Veterinary Curriculum Review: What are the strengths, weaknesses, gaps, and redundancies in the CSU equine curriculum***- Hendrickson DA, Varnum A, West A

*Department of Clinical Sciences, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins Colorado*

A survey was sent to large animal tracking students of CSU that have graduated in the last 5 years to evaluate their response to two main questions. There was a 31% response rate. The

questions centered on the AAEP Core Competencies: business of veterinary medicine, client education and regulatory responsibilities, anesthesia, dentistry, examination, husbandry, medical knowledge, radiology, reproduction, surgery techniques. The first question asked was: How well did the CSU equine veterinary curriculum address the following areas? Answer options were: to much, just right, not enough. There were 4 of the 11 categories where more than 30% of the respondents felt that there was not enough information in the curriculum to make them feel confident in practice. Those categories were: business (49%), dentistry (32%), radiology (32%), and surgery (41%). The second question was: How well did the CSU equine veterinary curriculum provide you with practical skills in the following areas? Answer options were: excellent preparation, good preparation, moderately unprepared, severely unprepared. When the unprepared categories were combined there were 4 categories where greater than 40% of the students felt unprepared; business (62%), dentistry (43%), radiology (41%), and surgery (59%). The students were allowed to give responses of free text. We are currently evaluating our curriculum based upon these comments. To improve the curriculum, we have already outlined a two-week clinical rotation, beginning next May, focusing on these skills. We have also begun to provide basic laceration repair during normal two-week equine lameness and surgery rotations.

## Ohad Levi

*Western University of Health Sciences*

***THE USE OF HEAD CAMERA FOR VIDEO SELF-ASSESSMENT OF SURGICAL PERFORMANCE OF VETERINARY STUDENTS*** - Levi O, Hedge Z, Gordon-Ross P, Kaminsky M, Schmidt P, Fahie M.

**Introduction:** In the medical field, the benefit of video recording in reflective practice has been documented. Studies have focused on video recording devices worn by the primary surgeon for both self-reflection and review by trainers. In veterinary literature, head cameras have been effective for recording of surgical procedures. The camera demonstrated effective footage of the surgeries performed with high-resolution that enabled to capture a complete surgery in great detail. The aim of our study is to determine if the use of a head camera to record surgical procedures by veterinary students followed by self-assessment improves subsequent surgical performance. We hypothesized that third-year veterinary medical students who view video recordings of their surgical procedures for self-reflection and self-assessment will have significantly greater improvement in their performance on the subsequent surgical procedures compared to those individuals who do not view video recordings.

All third-year veterinary students at Western University of Health Sciences enrolled in the surgery course performed surgical procedures with a head mounted video recording device. Students were block randomized into two groups (Group A or B) based on their model test score. Three evaluators scored student performance. Students in Group A reviewed their performance using a self-assessment rubric and the video and Group B using a self-assessment rubric only. Performance on subsequent procedures was compared. The rubric for scoring was designed by the authors to capture student performance in multiple domains. To assess interrater reliability each evaluator scored the same 10 surgeries.

Analysis of the results is in process\*

\*Preliminary results and conclusion will be presented in the conference

# EXPERIMENTS IN TEACHING ABSTRACTS

Rachel Halsey

*Washington State University*

## ***Using a multimedia approach to prepare students for a complex multiday learning experience***

**Description:** Asking students to come prepared to a complicated and challenging processes is something that they will face many times throughout their veterinary educational career. Typically, a long complicated orientation process is implemented where students are provided with “everything” they will need to know and then struggle to remember half of the material before they need to apply it. In an attempt to spread the material out and allow students time to process and prepare, I have developed an active learning module using multimedia.

Dean Hendrickson

*Colorado State University*

## ***Using Screen Sharing Software to Increase the Communication of Ideas in the Classroom***

**Co-investigator:** Andrew West

**Description:** This session will focus on the use of a software program called AirServer which allows teachers and students to screen share computers, tablets, and smart phones in the classroom. The focus of the session will be on the technical aspects of using AirServer as well as educational approaches to using screen sharing so that the ideas of all students in the classroom can be displayed and used to construct classroom understandings. Faculty will learn how to display multiple devices on a common screen and strategies for helping students to communicate and determine appropriate next steps for learning as a class. Make sure to bring your tablet or smart phone.

**Objectives:** By the end of the session, participants will be able to: 1) technically operate AirServer as a tool for screen sharing their own devices as well as the devices of students and 2) explain several approaches for using screen sharing in the classroom to support deeper student learning and engagement.

Duncan Russell

*Oregon State University*

## ***Error Management Training in Veterinary Students Learning Blood Smear Analysis***

**Co-Investigators:** Gorman EM, Townsend KL, Meritet D

**Description:** Error management training (EMT) creates an active, exploratory learning environment whereby trainees are explicitly encouraged to make errors. Students aware of these errors can identify and improve upon deficiencies in technique and knowledge; EMT students are also better at applying expertise to unfamiliar scenarios (adaptive transfer). Blood smear evaluation might be well suited EMT methods due to inherent complexities

associated with technique and interpretation. Adaptive transfer skills are also necessary for effective interpretation of unknown clinical case material. The aim of this study is to determine the efficacy of EMT in a veterinary clinical pathology training environment. We hypothesize that EMT results in improved performance in adaptive transfer tasks, as compared to a proceduralized, error-avoidant training method. Our secondary hypothesis is that groups taught by EMT have improved long-term performance in transfer tests, as compared to a proceduralized training method.

## Kristy Dowers

*Colorado State University*

### ***Introducing Clinical Reasoning into a DVM Curriculum (Years 1-3)***

**Description:** Clinical Reasoning, i.e., the ability to problem-solve in a clinical setting, is often assumed to develop naturally after years of experience in practice. Seasoned clinicians (experts) can rapidly identify pertinent data and build a robust list of rule-outs (hypotheses) about a case within a few minutes. Early in their careers, students (novices) have limited clinical constructs and therefore a limited ability to make sense of case details.

Unfortunately, experts are often unable to explain their leaps of logic because they happen subconsciously. Students are left to guess at how they reached a diagnosis. At CSU, we wanted our students to arrive on the clinic floor in Semesters 7 and 8 ready to build upon an already strong clinical reasoning foundation. We decided to treat clinical reasoning as a specific skill to be learned in much the same way that suturing and IV catheter placement is learned: methodically with multiple opportunities for practice and feedback. We introduced a schematic for students to follow in Semester 1 of the curriculum and built on that schematic in Semesters 2, 4, and 6. For this brief Experiments in Teaching session, I will describe the key features of the activities we designed and the subjective outcomes we are observing on the clinic floor. We are currently trying to develop clinical reasoning outcomes assessments and would appreciate input in this area.

## Stephen Hines

*Washington State University*

### ***Creating illness scripts – the pathology way! An active integration exercise.***

**Co-investigators:** Gary Haldorson, and Danielle Nelson

An important goal in how we teach Systemic Pathology at WSU is for our students to be able to connect lesions (structural and/or function changes in structure) with appropriate clinical scenarios. Essential links include pathogenesis (how the lesion was created) and pathophysiology (how the lesion produces clinical problems). We will present a small group exercise that involves active sorting of cards. The exercise provides practice, feedback, and a social element (gamification).

## Joie Watson

*University of California, Davis*

### ***Implementing a social reading platform, Perusall, in a first year veterinary course.***

**Description:** The introduction of any new technology platform as an educator can have negative consequences for instructor and learner. An approach to implementation of a novel social reading platform, Perusall, will be discussed. Outcomes for instructor and learners will be presented.

## Jennifer Mclean and Erica Suchman

*Colorado State University*

### ***Ideas for making large lecture undergraduate courses more interactive***

**Description:** In this session participant's will be introduced to activities that are done during class periods in our general microbiology course to increase student's opportunities to work with material to deepen understanding. These activities include classroom response questions, group exams, and flipped classrooms. These activities are most appropriate for undergraduate courses.

## Phil Mixter

*Washington State University*

### ***Adventures in a Classroom Space Designed for Active Learning***

**Description:** Washington State University has explored options for classroom physical designs to support active-learning. During the summer of 2016 I taught an undergraduate Microbiology course using one of these prototype spaces where tables of 4-5 students each had their own monitor for group sharing. As part of this experience, I worked with a graduate student in WSU's College of Education researching faculty development approaches to enhance active learning. I will orient participants to this approach and we'll discuss how physical changes can work with pedagogy for improved learning.