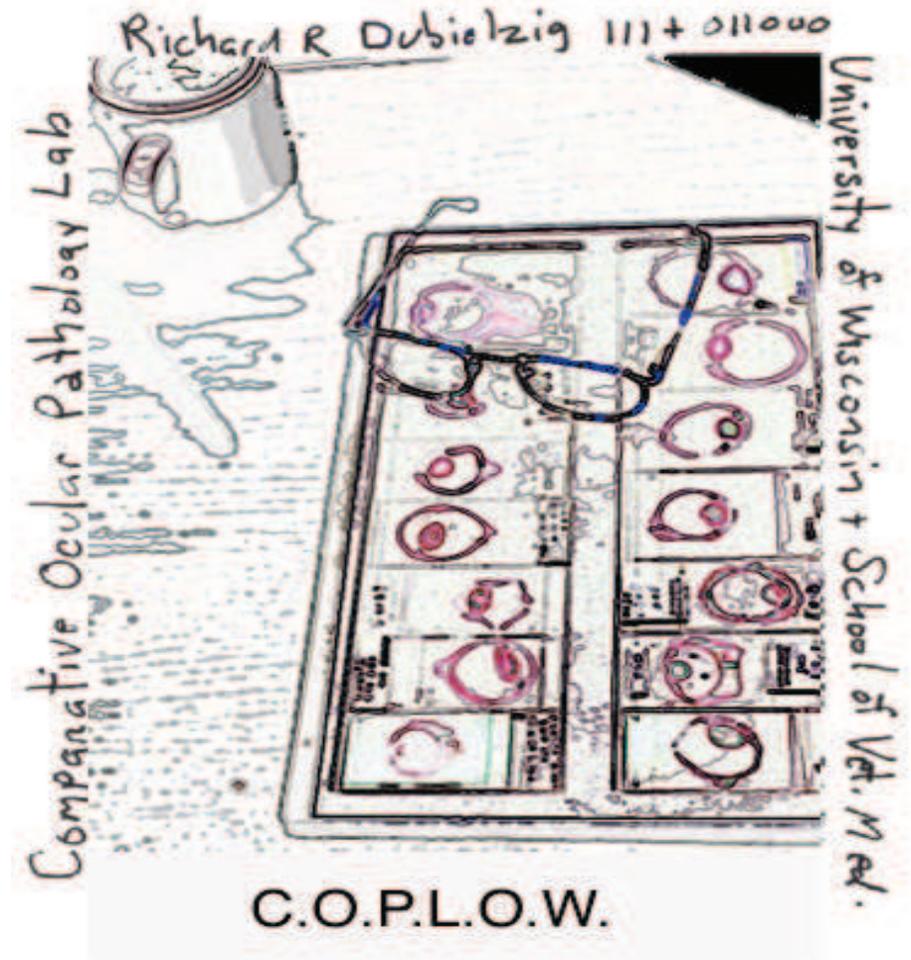


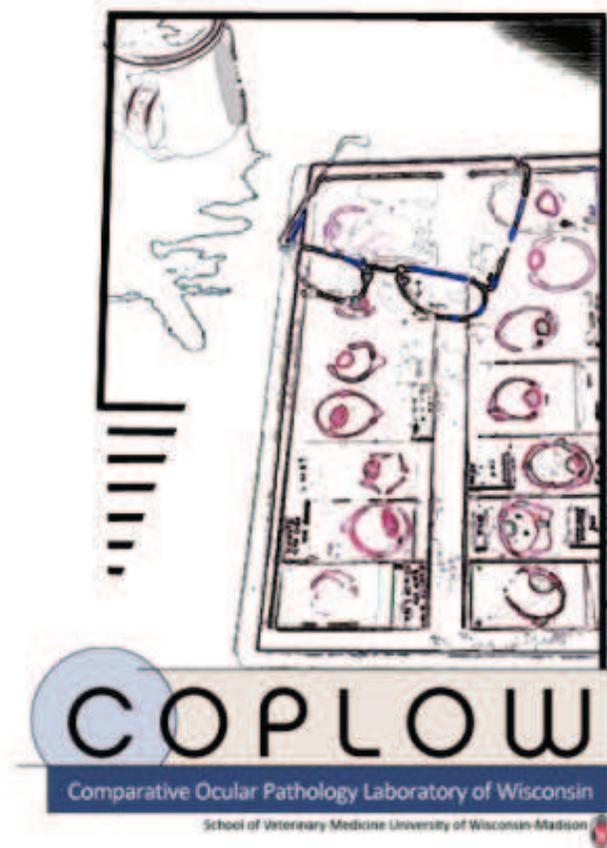
**VOTS Meeting
Nov. 2013
Puerto Rico**



**Billie Beckwith-Cohen, DVM, MBA
Comparative Ocular Pathology Fellow
UW-Madison
School of Veterinary Medicine**

What is COPLOW?

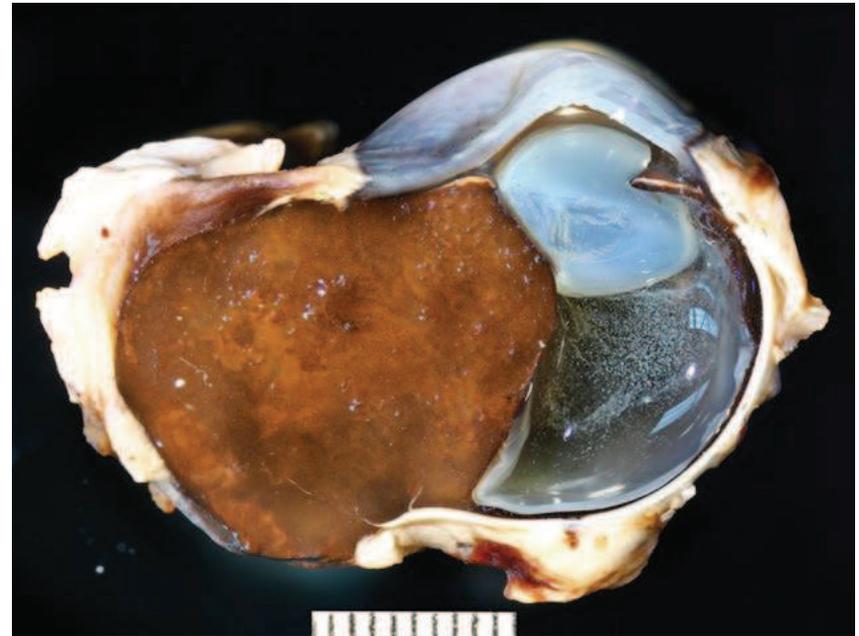
- Founded in 1983 by Dr. Richard R. Dubielzig
- Mail-in ocular pathology service for veterinary ophthalmologists
- Approximately 3000 cases annually
- Mission
- Research



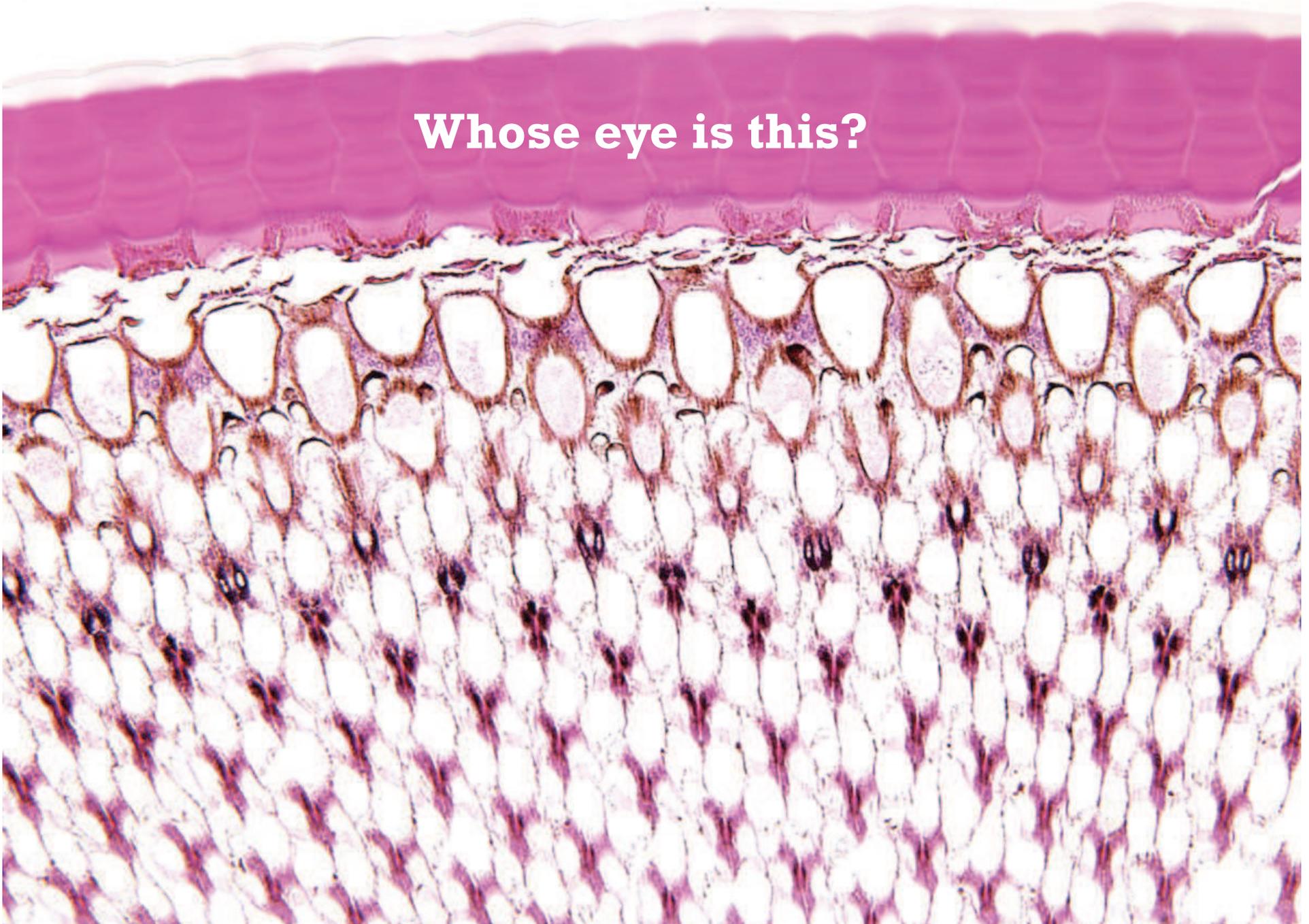


JOIN US ON
facebook®

- Great images uploaded daily
- Community of people that share similar passion
- Search for “COPLOW”



Whose eye is this?



Why do we submit globes?

- Margins
- Co-pathology
- Ocular surprise

Recommended Procedures: 'Why Should I Care?'

- Maximize the quality of the specimen
- Maximize the accuracy and value of the interpretation
- Make it as easy as possible for us to help you and your patients

Safety Comes First

- Ensure the safety of staff
 - Formalin is bad! And smelly!
 - Known human carcinogen
 - Immediate exposure may cause severe irritation



Getting Samples

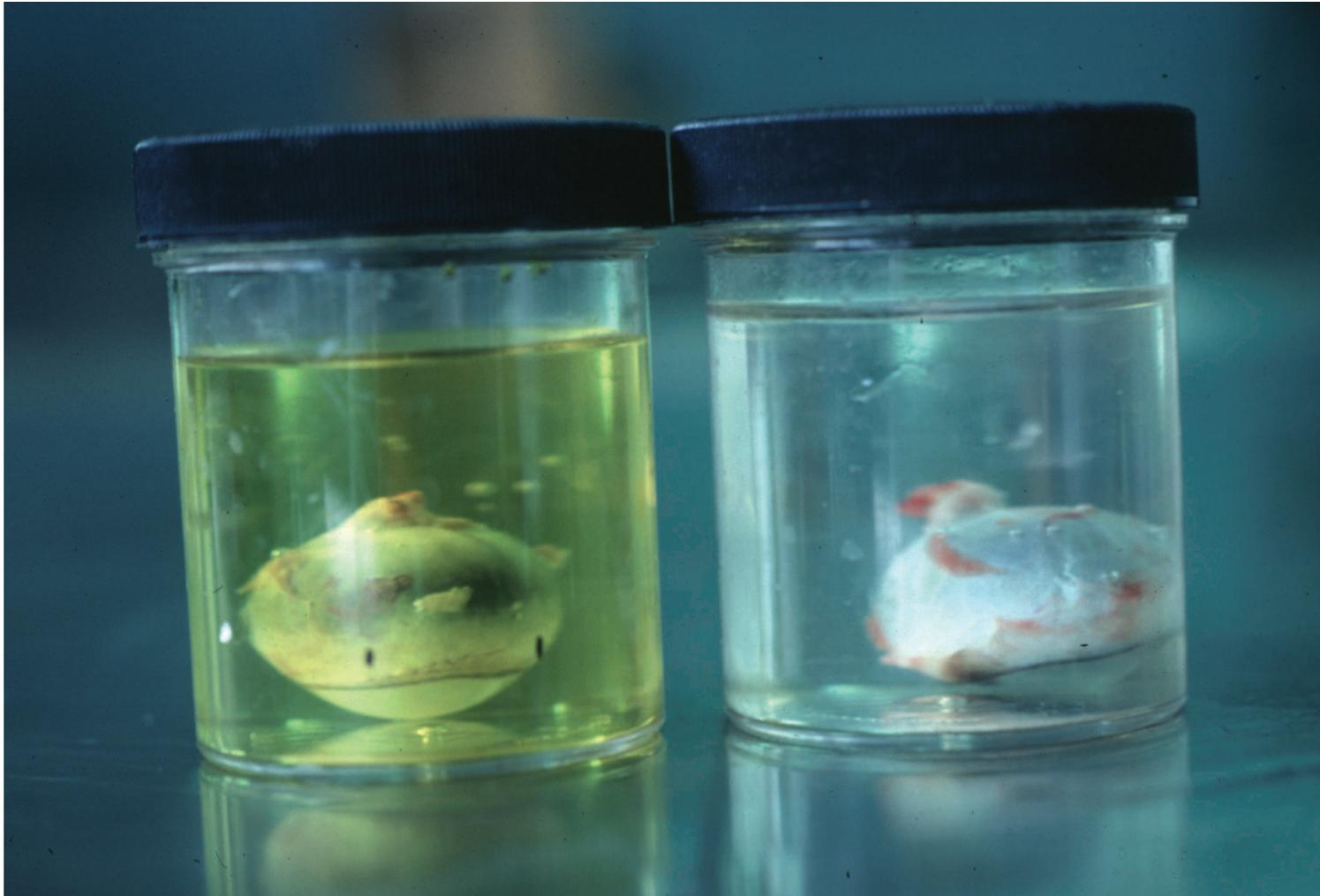
- That's up to you!



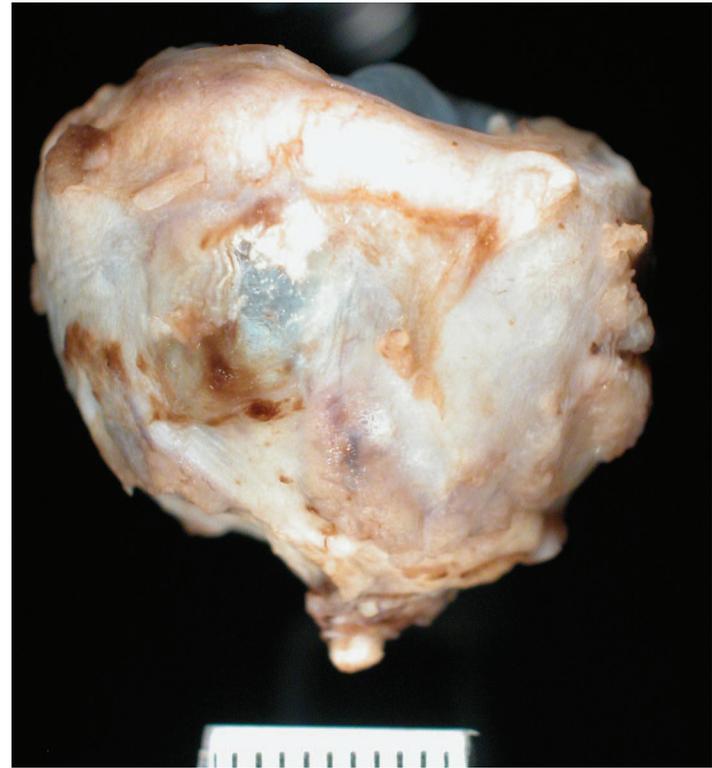
Sample Preparation: Enucleated Globes

- Remove from orbit
- Trim EXCESS tissue
 - Eyelids
 - Nictitating membrane
 - Retrobulbar fat, extraocular muscles, etc.
- Improves penetration of formalin to IO structures
- Prevents globe distortion due to muscle contraction
- Do not remove the ON or incise the globe!

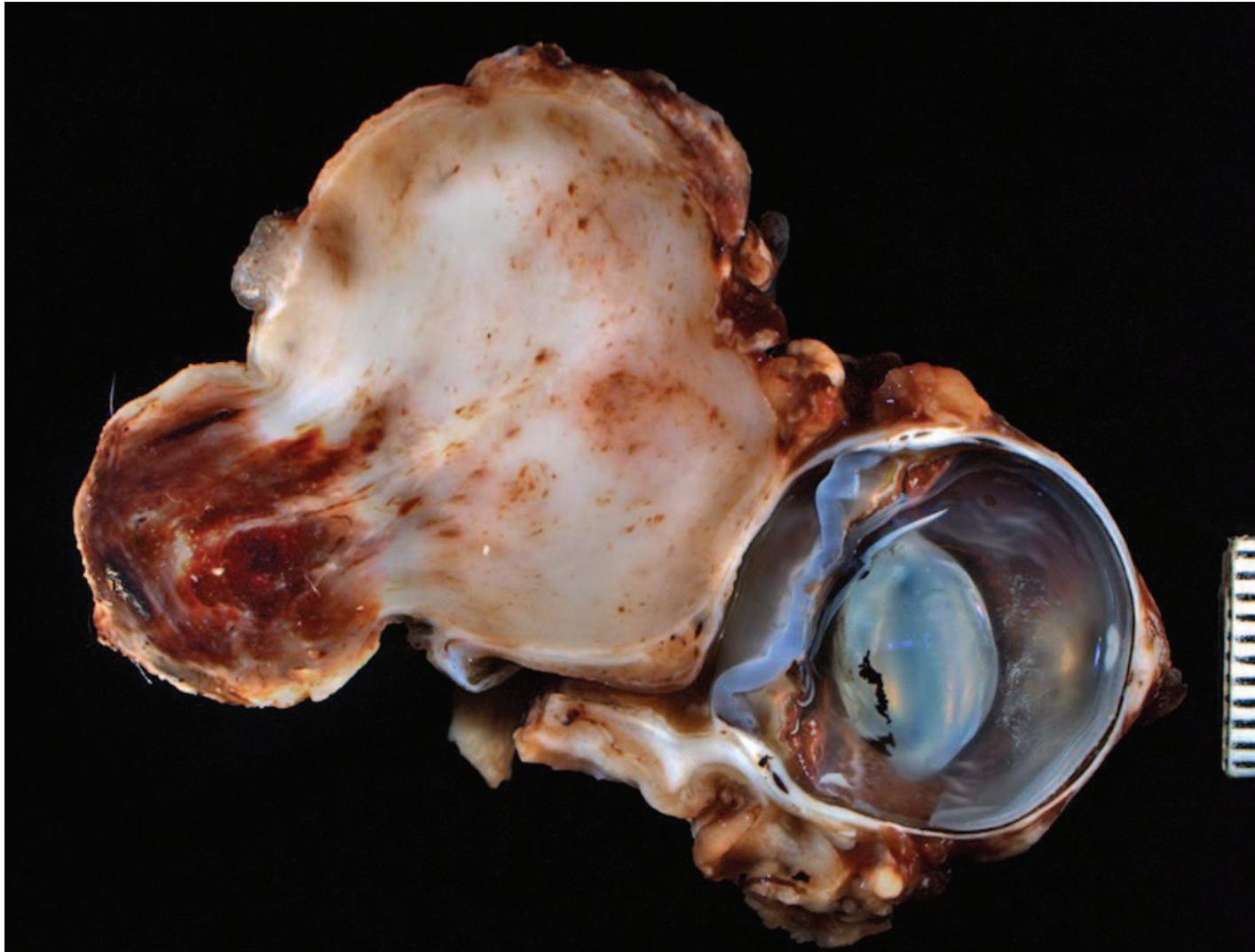
Those globes are CLEAN!



Untrimmed globes...



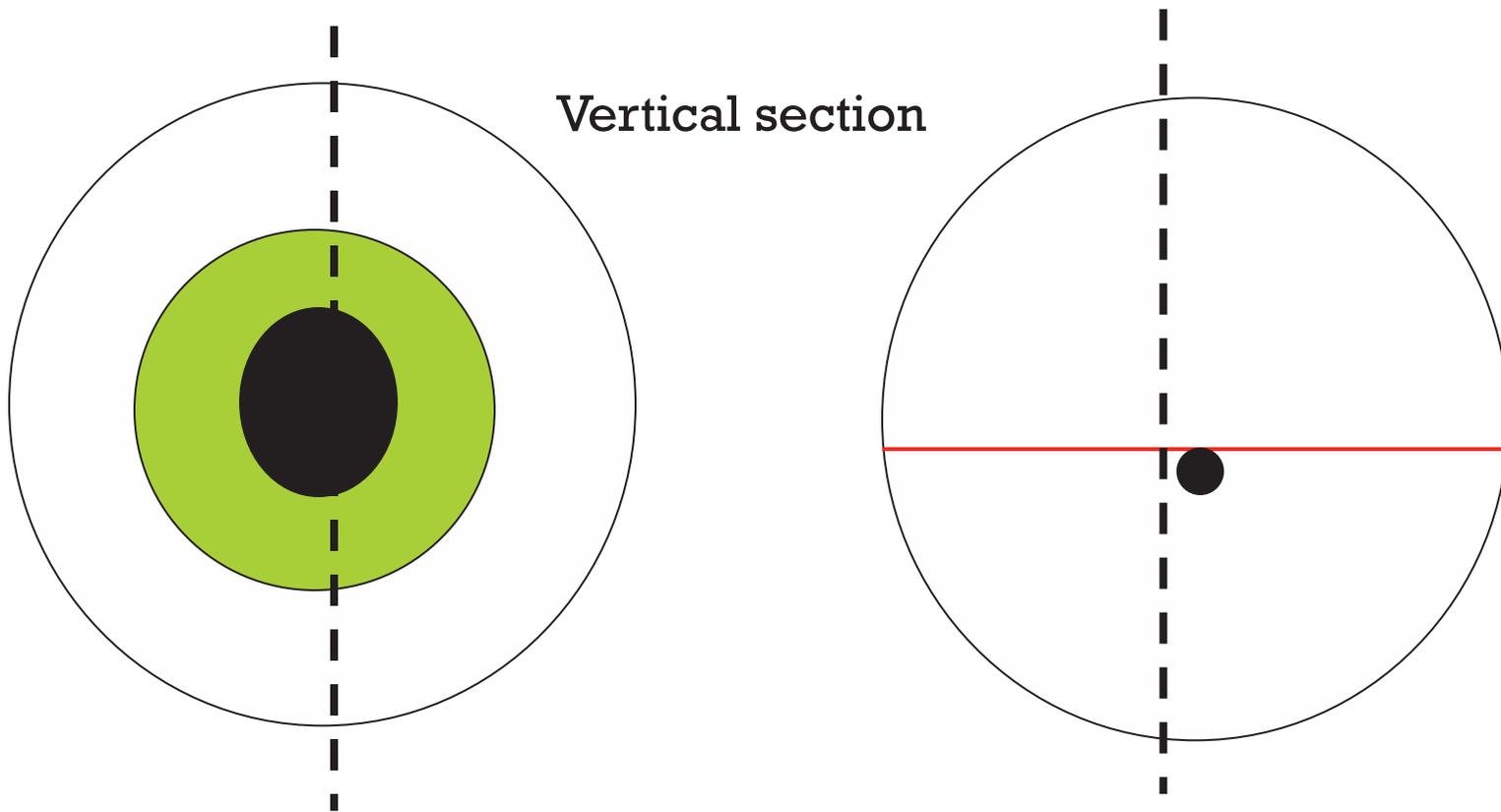
Exception



Sample Preparation:

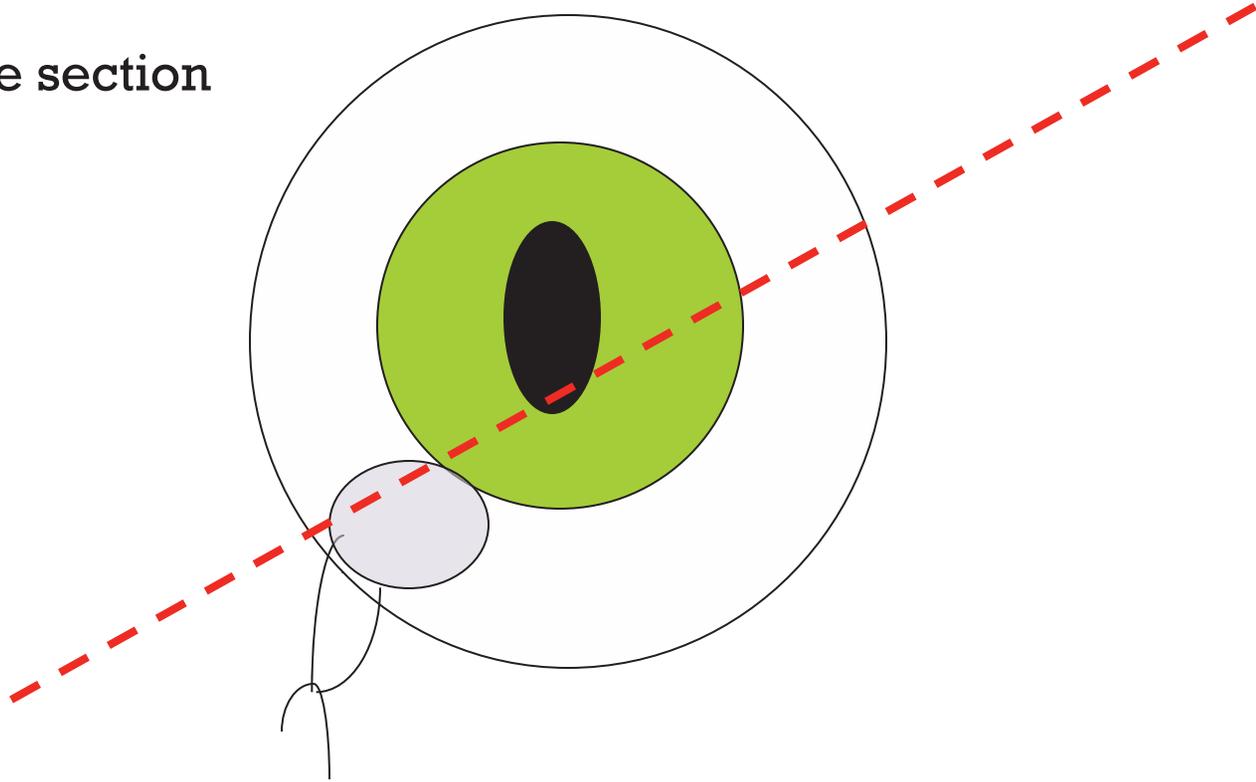
Enucleated Globes

- Label or draw lesions of interest
 - Allows planning of cut into globe



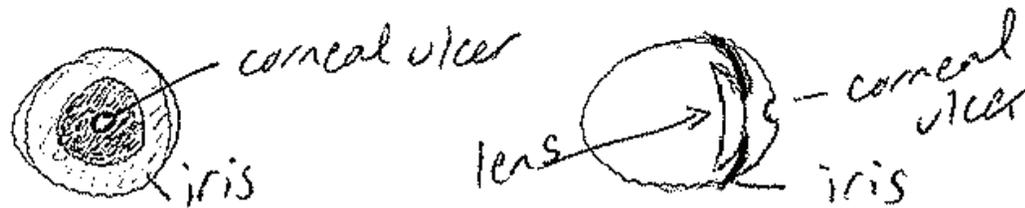
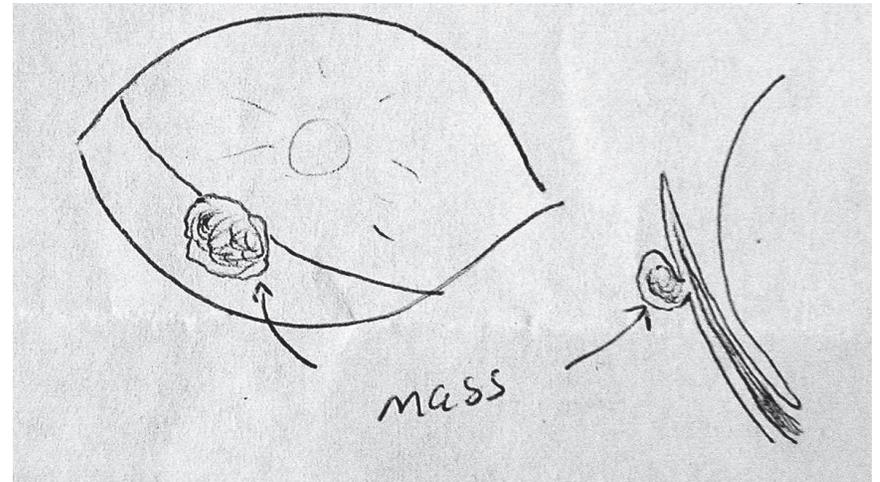
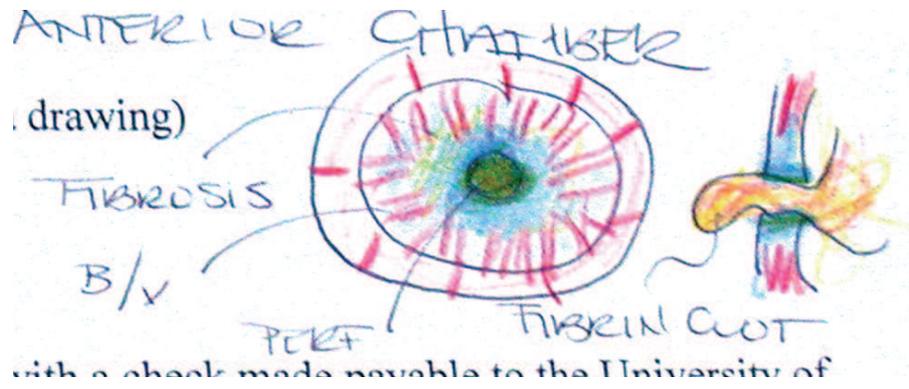
Suture near lesion

Oblique section



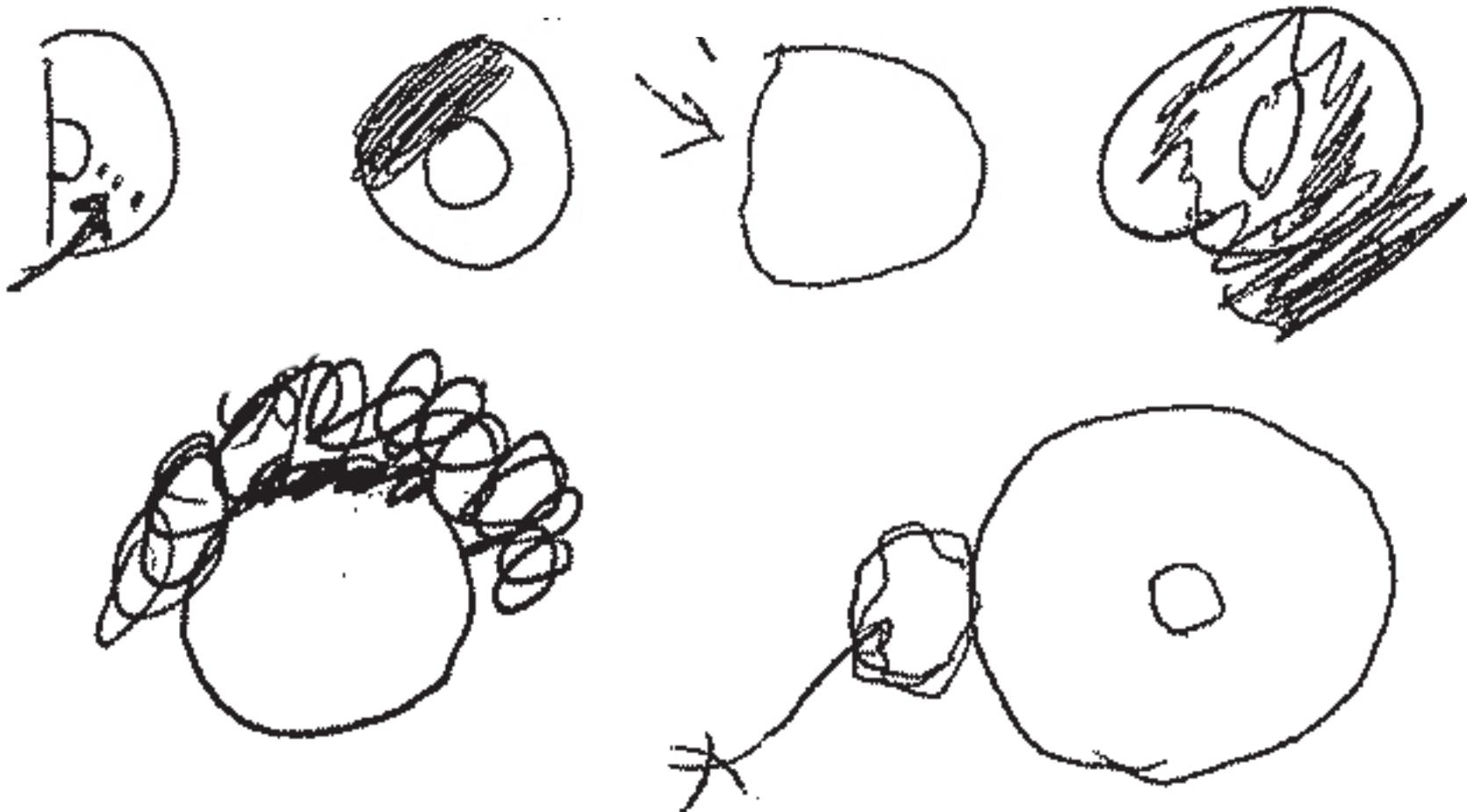
Provide a Simple Drawing

- Helpful drawings:



Provide a Simple Drawing

- Not so helpful drawings:



Provide a Simple Drawing

- We love drawings:

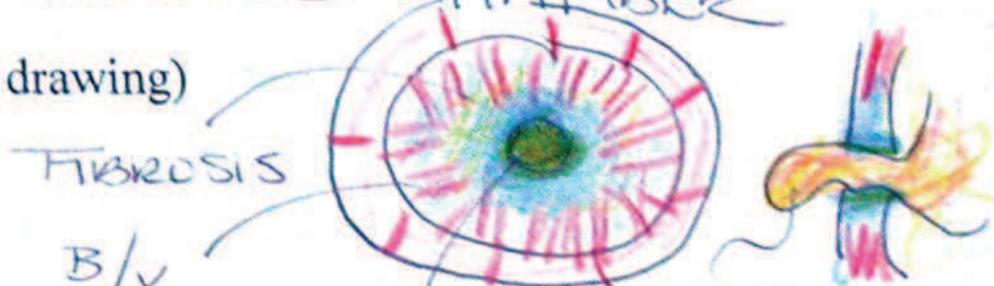
corneal ulcer, can't visualize
? pupil. Goniodysgenesis OD

(with a drawing)



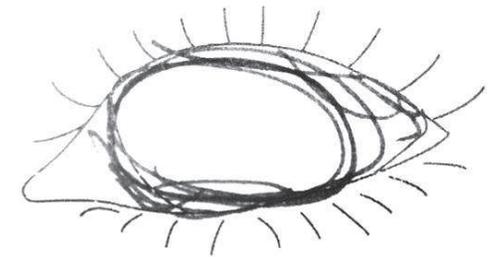
ASCURCERIZATION / 3 FIBROSIS
w/ ANTERIOR CHATIBER

(, or with a drawing)

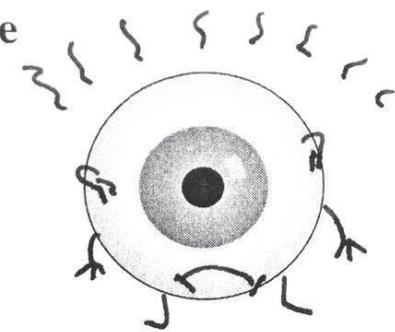


Lids

OS

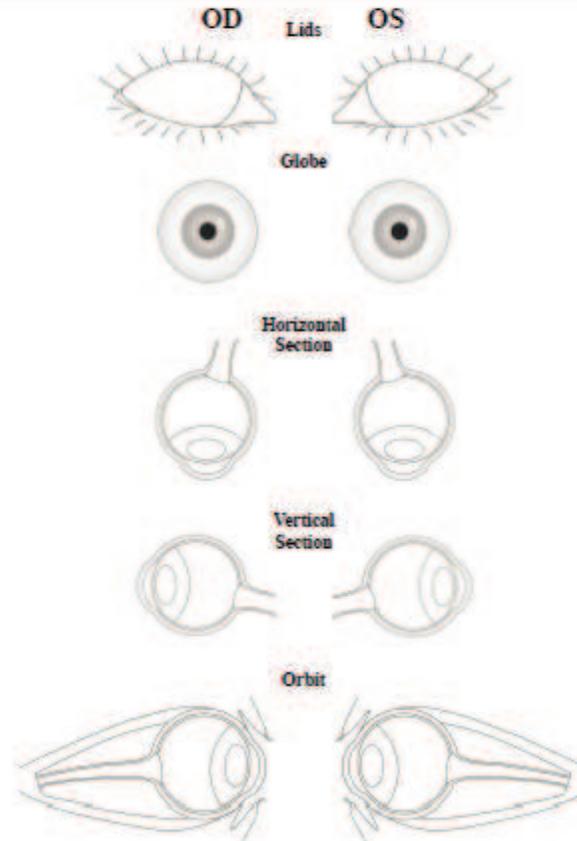


Globe



Our new forms make it easy

Ocular Drawing Form		Submitter (Must match data on "COFLOW Submissions" form)
 COFLOW Comparative Ocular Pathology Laboratory of Wisconsin Dr. Richard F. Dubielzig, Director Department of Pathobiological Science School of Veterinary Medicine University of Wisconsin - Madison	<small>(Form 1/04-3 • Rev. 2012.00)</small>	Contact Person _____ Animal's Name _____
		Location of Ocular Abnormalities (below)
		Here sketch the location of ocular lesions or other abnormalities with descriptive notes alongside, pointing to the feature described. Submit with your "COFLOW Submissions" form.



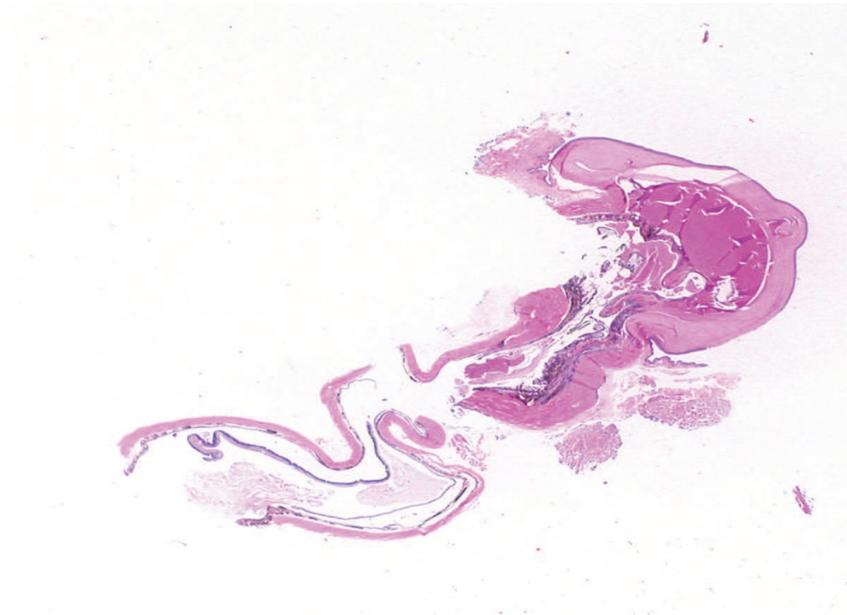
Sample Preparation: Enucleated globes

- Clinical photos are highly appreciated
- We do not encourage injection of fixative into the globe
- If desired, inject small amount formalin INTO globe
 - 0.1-0.3 mL with 25 or 27 g needle
 - Inject into vitreous (no need to aspirate)
- **AWAY FROM LESIONS!**
 - Avoid subretinal injection
 - Useful?
 - Tell us!!!!

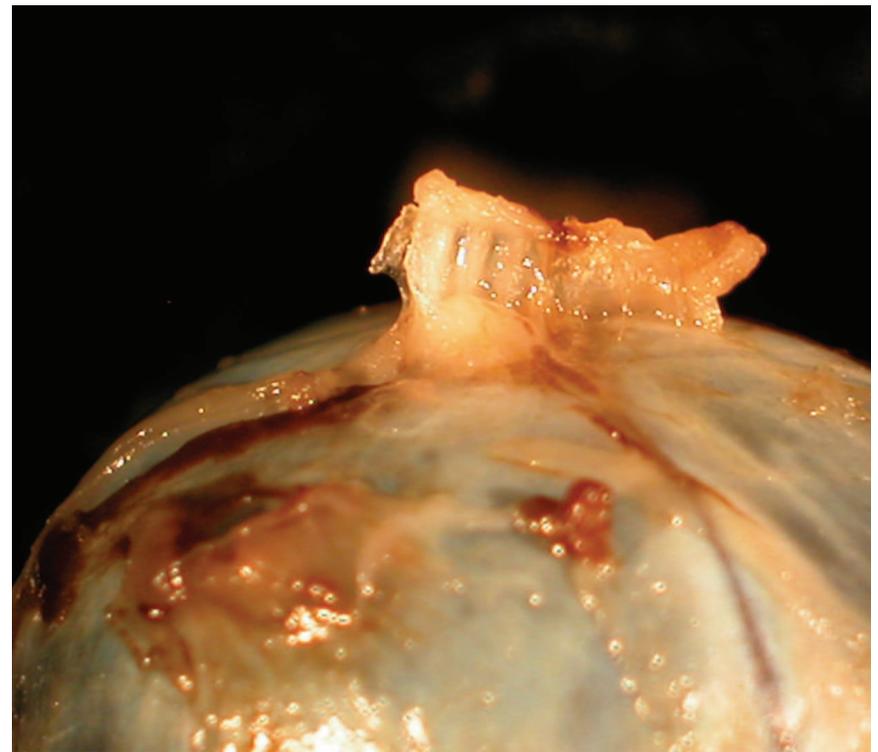
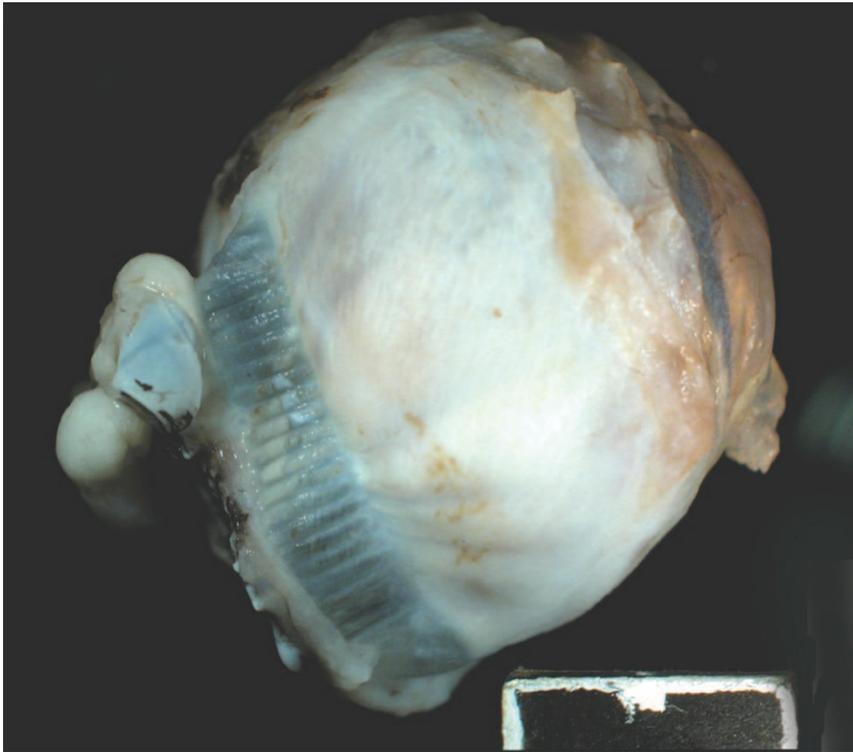
Artifacts

- Some problems during enucleation can affect the quality of the specimen

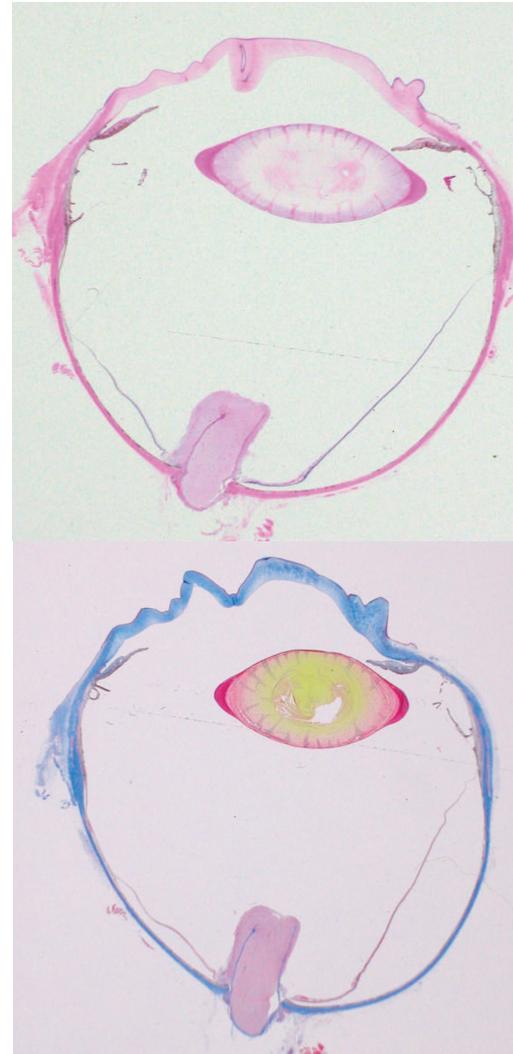
Ruptured globes

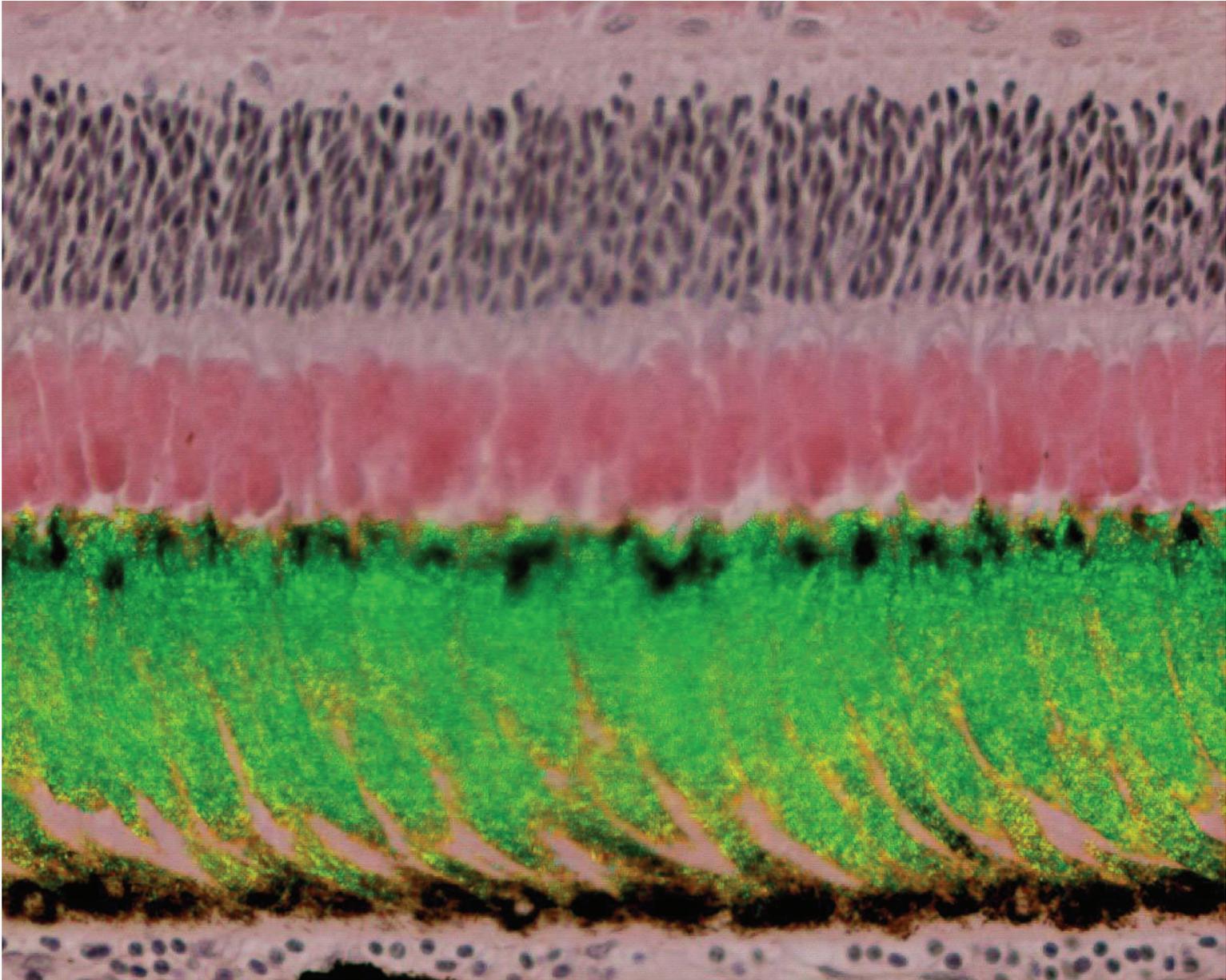


Hemostatic forceps



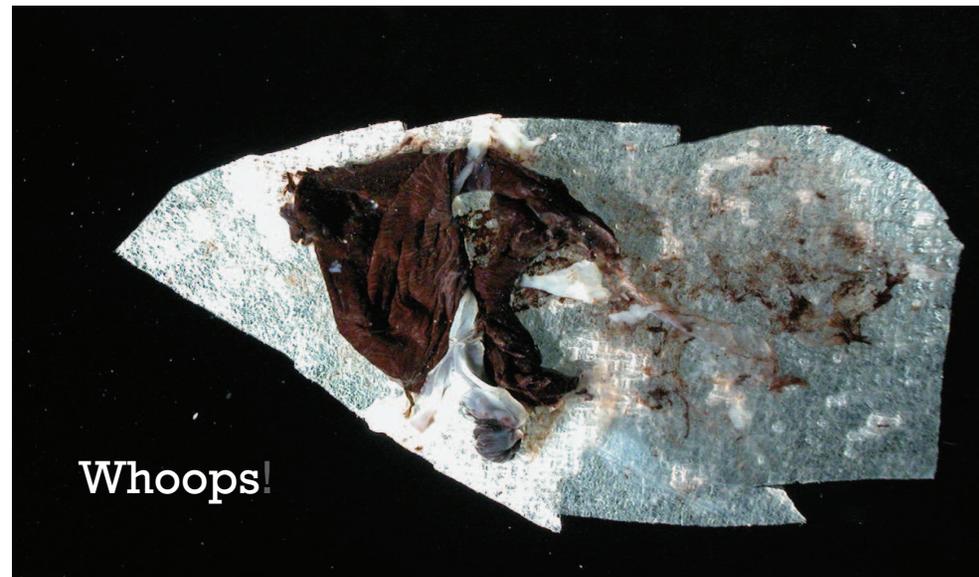
“Twisting technique”





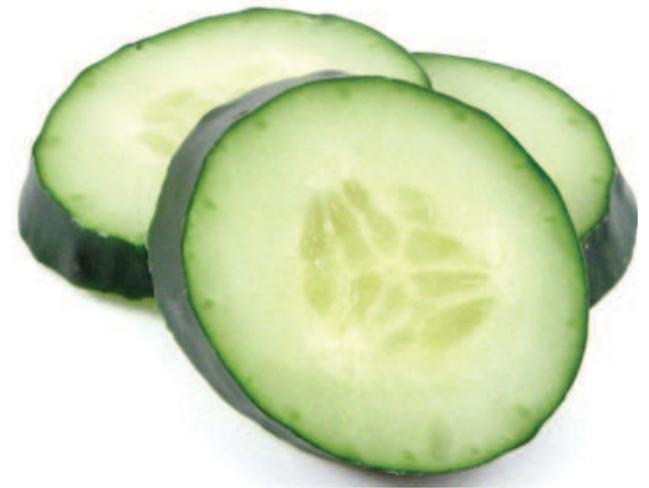
Sample Preparation: Eviscerations

- Place contents directly into formalin
- Be careful to include the lens
- Do not place sample on absorbant paper or wood!
- If sample contains small pieces use a cassette



Sample Preparation: Conjunctiva and Cornea

- Try to fix flat
 - Allows for full thickness evaluation
- Lay flat onto non-absorbent surface
 - Suture wrapper foil
 - Plastic
 - Cucumber
- Allow to dry ‘a bit’
- Plop into formalin (with foil)
- Arrives fixed, flat and ready to cut!



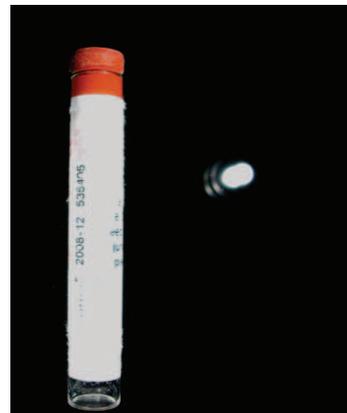
Sample Preparation:

Eyelids and Orbital Tissue

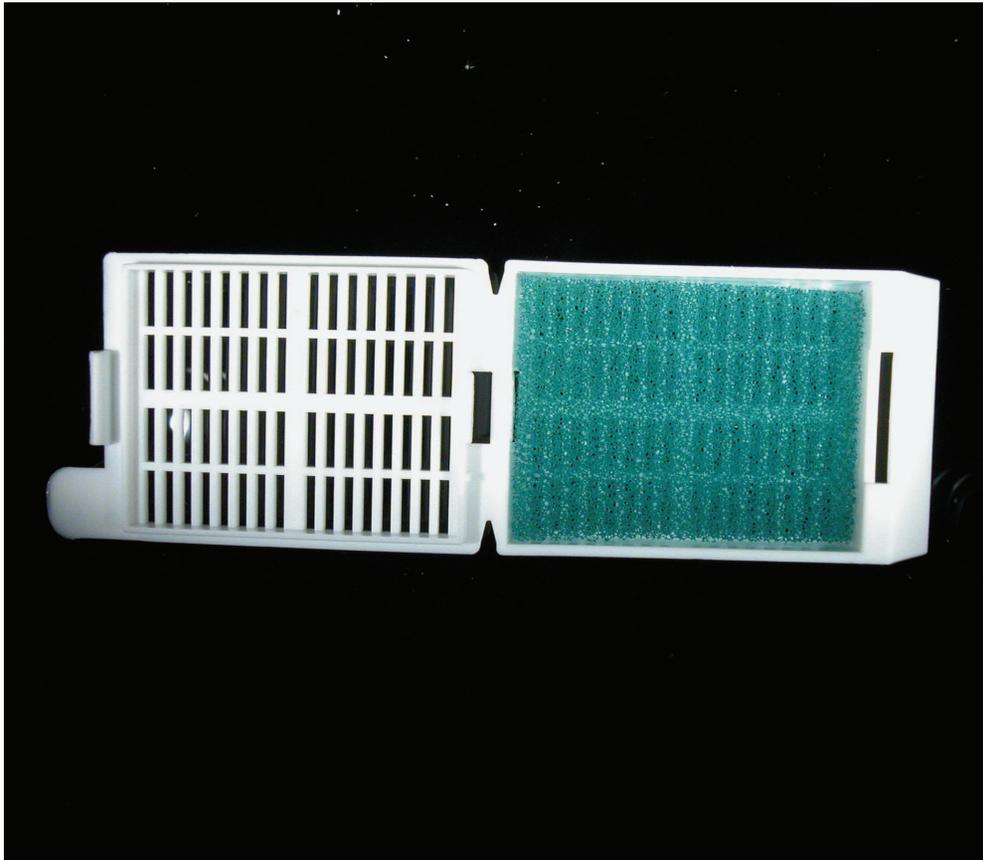
- Place directly into formalin
- Avoid crush artifact with forceps
- Ink or suture the margins of concern

Tiny Pieces

- Meshed cassette
 - Best option
 - Not for larger pieces
- Small tube
 - Please avoid

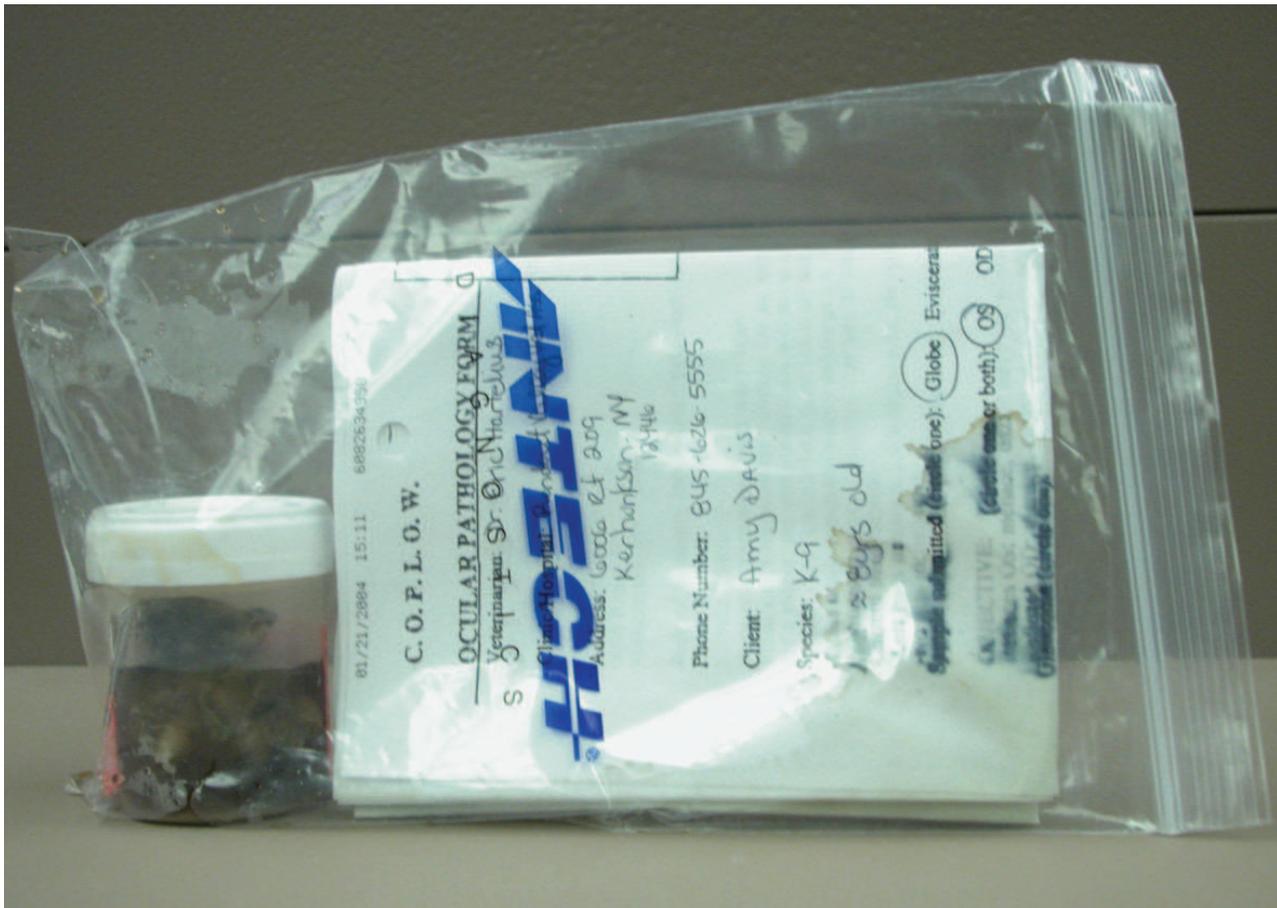


Avoid



The Container

- All containers leak, some more than others



Uh ohhh!

01/21/2004 15:11 6092634958 PAGE 03

C. O. P. [Redacted] Lab Use Only

OCULAR [Redacted]

Veterinarian [Redacted]

Clinic [Redacted]

Address [Redacted]

Phone [Redacted] 626 5555 Fax [Redacted]

Client: Amy Davis Patient: Deagan DAVIS

Species: K-9 Breed: Labrador Retriever

Age: 2 Years old Sex: (M, M, FS, F)

Sample submitted (circle one): Globe Evisceration Lid Other (specify):

(Circle either both) OS OD

Disinfect (circle one): Yes No

Duration of problem: 2

Date of surgery: 1/26/04

Ophthalmic findings: See Attached

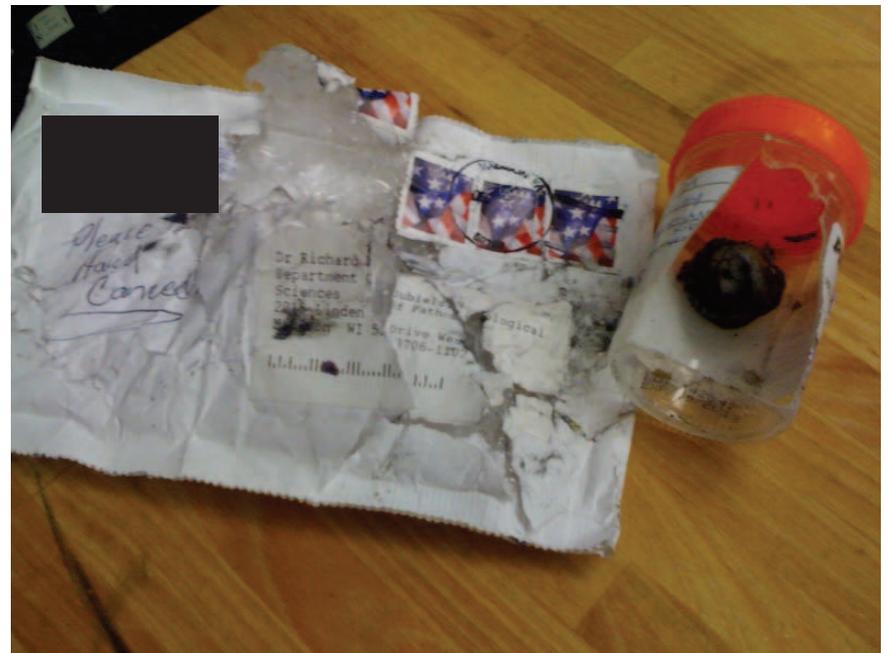
Focal lesions in the globe (indicate on tissue if possible, or with a drawing)

Physical exam findings:

Please submit the sample in 10% formalin and send the sample with a check made payable to the University of Wisconsin to the following address:

Dr. Richard Dubielzig
Department of Pathobiological Sciences
School of Veterinary Medicine
University of Wisconsin-Madison
2015 Linden Drive West
Madison, WI 53706-1102

Process at Vet School \$50	<input checked="" type="checkbox"/>
Process at Medical School \$65	<input type="checkbox"/>
Send extra slide (Add \$5)	<input type="checkbox"/>



Please Avoid



Container: wrong size!



Formalin Fixation

- Fix in 10% neutral buffered formalin
 - \geq 10:1 ratio
 - At **LEAST** enough to cover the top of the sample!
 - Ideally 48h before sectioning
- Once fixed...
 - Wrap in thoroughly **SOAKED** gauze once fixed
 - Cotton can be TOO absorbent...



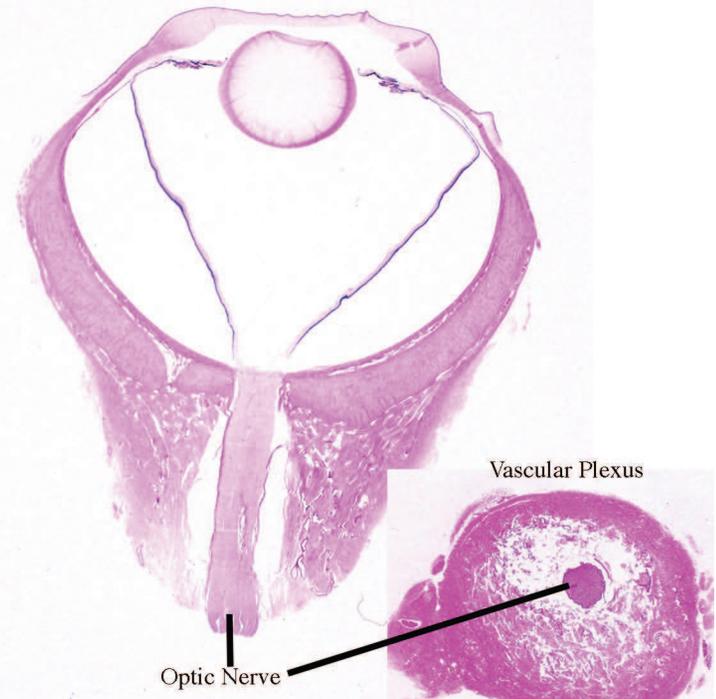
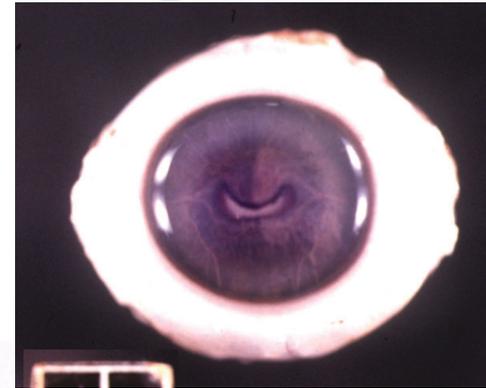
Other Fixatives: used mostly by zoos

- Davidson's solution
 - Should be fixed for no longer than 48 hours
 - Rinse and place in formalin for shipping
 - Excellent tissue rigidity maintains shape of globe
 - Good tissue penetration

- ~~• Bouin's:~~

- ~~– Flammable when dried!~~

Pop Quiz: Whose eye is it?

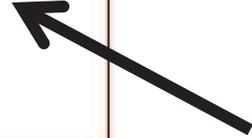




The New Form

- On-line form:
 - <http://www.vetmed.wisc.edu/pbs/dubielzig/pages/coplow/submissionforms.html>
 - Fillable and printable forms
- Regular and oversized (horse) globes
- Printable labels for mailing
- Soon to be electronic submissions

COPLOW Submissions <small>(Form VS-6-4 • Rev. 2013.02)</small>		For COPLOW Lab Use Only	
Comparative Ocular Pathology Laboratory of Wisconsin (COPLOW) Dr. Richard R. Dubielzig, Director Department of Pathobiological Science School of Veterinary Medicine		Trimmed: Lens: Vitreous: Retina: Optic Nerve: Other: Morphology: Size: Tissue Kept: Cut by:	
 University of Wisconsin Zoological Museum Laura A. Halverson Monahan Curator of Collections Department of Zoology			



For Office Use Only!

Guidelines: See preparation and submission guidelines on the COPLOW website at <http://www.vetmed.wisc.edu/coplow>.
Submission: Fix tissue in 10% formalin or Davidson's fixative, package it in leakproof packaging, and send it with this form to:
COPLOW • 2015 Linden Dr. #3308 • Madison, WI 53706-1102
Drawings: Please indicate location of lesions on the "Ocular Drawing Form" and submit it with the specimen.
Payment: Please include a check payable to "University of Wisconsin"; otherwise we will bill you.
Questions: phone (608)263-4958 • fax (608)441-2154 • e-mail coplowfellow@svm.vetmed.wisc.edu

Submitter		Return results by	Specimen	
Veterinarian			Common	<input type="radio"/> dog <input type="radio"/> horse
Contact Person <i>(if not the vet)</i>			Name	<input type="radio"/> cat <input type="radio"/> other <i>tell→</i>
Clinic, Zoo, Hospital, Etc.			Genus/Species <i>(if exotic)</i>	
Address			Breed(s), if app. <i>("Mixed" is OK.)</i>	
E-Mail		<input type="checkbox"/>	Age	___ yrs. ___ mos. ___ wks. ___ days
Phone			Sex	<input type="radio"/> F <input type="radio"/> M <input type="radio"/> unk
Fax		<input type="checkbox"/>	Fix	<input type="radio"/> spay <input type="radio"/> neuter <input type="radio"/> intact <input type="radio"/> unk
Owner's Name <i>(first, last)</i>			Sample	<input type="checkbox"/> globe <input type="checkbox"/> lid <input type="checkbox"/> eviscer'n <input type="checkbox"/> other <i>tell↓</i>
Animal's Name			Sent	<input type="checkbox"/> cornea <input type="checkbox"/> TEL <input type="checkbox"/> exenter'n
			Eye	<input type="radio"/> OS <input type="radio"/> OD <input type="radio"/> OU <input type="radio"/> unk <input type="radio"/> other <i>tell→</i>
			Prev. RD# <i>(if any)</i>	Eye Color

Medical Observations and Findings <i>(where relevant)</i>	
Ophthalmic Findings	Glaucoma <input type="radio"/> yes <input type="radio"/> no <input type="radio"/> unk
	Duration of Problem <input type="radio"/> <i>tell→</i> <input type="radio"/> unk
	Date of Surgery mo. day yr.
General Medical Conditions	Reason for Euthanasia
	Time from Death to Fixation

Calculation of Service Fee (Check all that apply. *Note: COPLOW is motivated to add to our collection of exotics with substantially reduced fees for valuable specimens. If you have negotiated such a discount, indicate it below.*)

<input type="checkbox"/> tissue analysis\$100	<input type="checkbox"/> cytology\$40	<input type="checkbox"/> negotiated discount minus \$.....
<input type="checkbox"/> small-animal globe analysis\$110	<input type="checkbox"/> immunohistochemistry stains @ \$75 \$.....	
<input type="checkbox"/> large-animal globe analysis\$120	<input type="checkbox"/> slide review\$25	
<input type="checkbox"/> 2nd globe, same animal\$20	<input type="checkbox"/> slides requested @ \$10 \$.....	Total Due (add all above) \$.....

The Form

- Please fill out the whole form
 - Veterinarian & Clinic Name
 - Species, breed, age, sex of animal
 - Your phone number, fax number, or email
 - **HISTORY! HISTORY! HISTORY!**
 - Trauma? What kind?
 - Blue Eye?
 - Prior Surgery or Biopsy?
 - Duration of problem?
 - Systemic signs?
 - Focal lesions?

Old and incomplete form

C. O. P. L. O. W.
OCULAR PATHOLOGY FORM

Lab Use Only

Veterin [redacted]
Clinic/ [redacted]
Address [redacted]

Phone Number [redacted] Fax Number [redacted]
Client [redacted] Patient [redacted]
Species: *feline* Breed: *Himalayan*
Age: *10yrs* Sex: (MC, M, FS, F)

Sample submitted (circle one): Globe Evisceration Lid Other (specify):
(circle one or both): OS OD

Glaucoma (circle one): Yes No

Duration of problem: *at least 1 month*

Date of surgery: *1/8/04*

Ophthalmic findings: ?

Focal lesions in the globe (indicate on tissue if possible, or with a drawing) ?

Physical exam findings:

Please submit the sample in 10% formalin and send the sample with a check made payable to the University of Wisconsin to the following address:

Dr. Richard Delmore
Department of Pathobiological Sciences
School of Veterinary Medicine
University of Wisconsin-Madison
2015 Linden Drive West
Madison, WI 53706-1102

Process at Veterinary [redacted]
[redacted]
[redacted]

with C.O.P.L.O.W. form and -15

Shipping

- Regular mail, FedEx, UPS
- Secure lid
- Tape = BAD, Parafilm = GOOD
- Place paperwork in SEPARATE BAG
 - Or in paperwork pouch of ‘fancy’ bags
- Keep from freezing
 - Can cause severe artifact in sections
 - Add 1:10 alcohol



Madison, WI



Date of surgery: 4/15/04

Ophthalmic findings:

buphthalmia, lens subluxn, Ca

Focal lesions in the globe (indicate on tissue if possible)

-bopht

Physical exam findings:

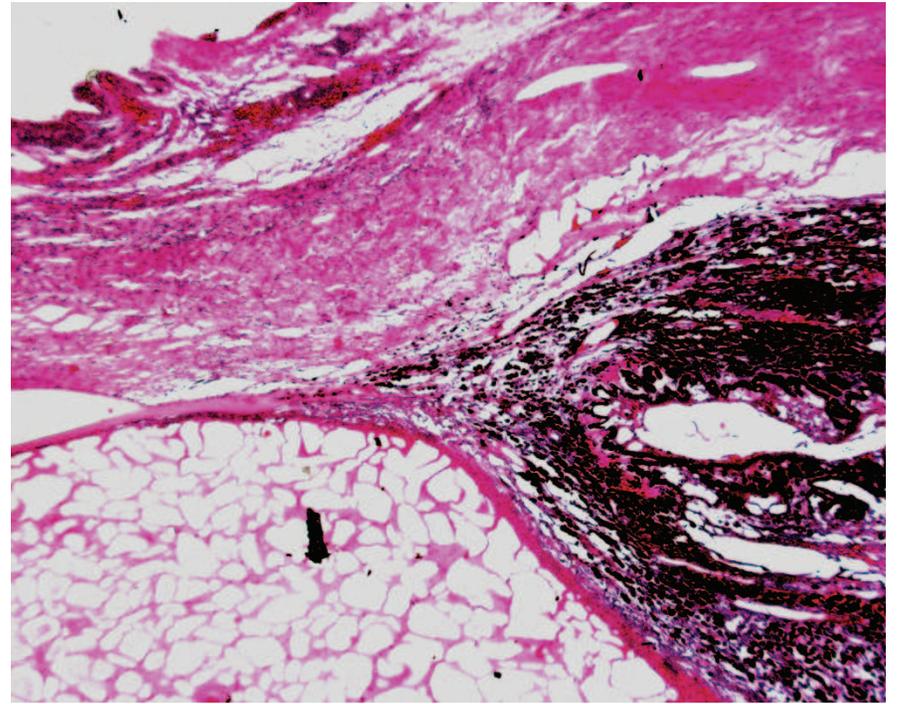
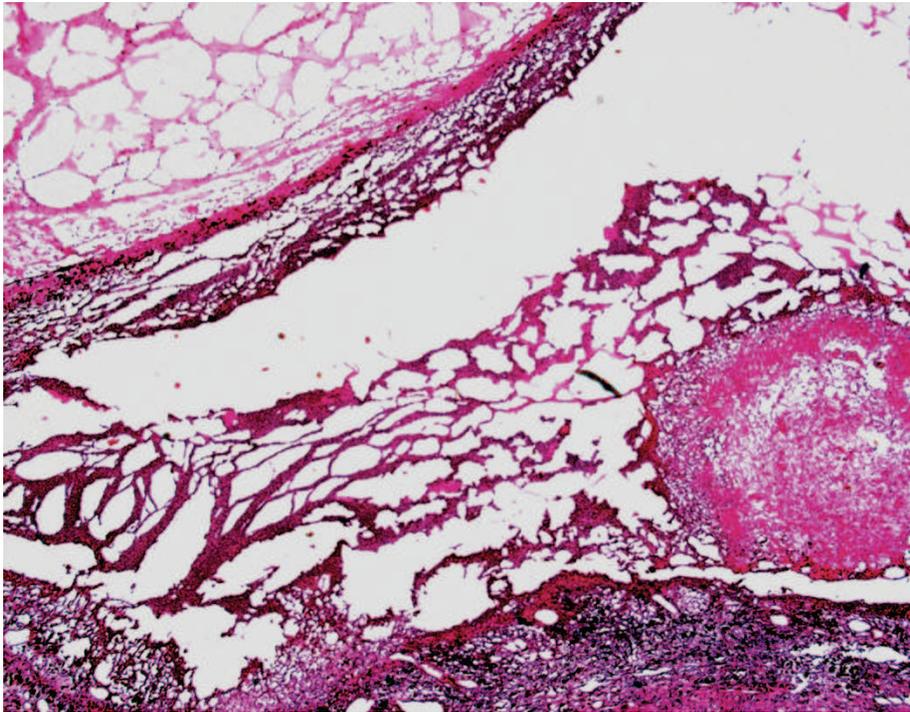
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Dr. Richard Dubielzig
Department of Pathobiological Sciences
School of Veterinary Medicine
University of Wisconsin-Madison
2015 Linden Drive West
Madison, WI 53706-1102

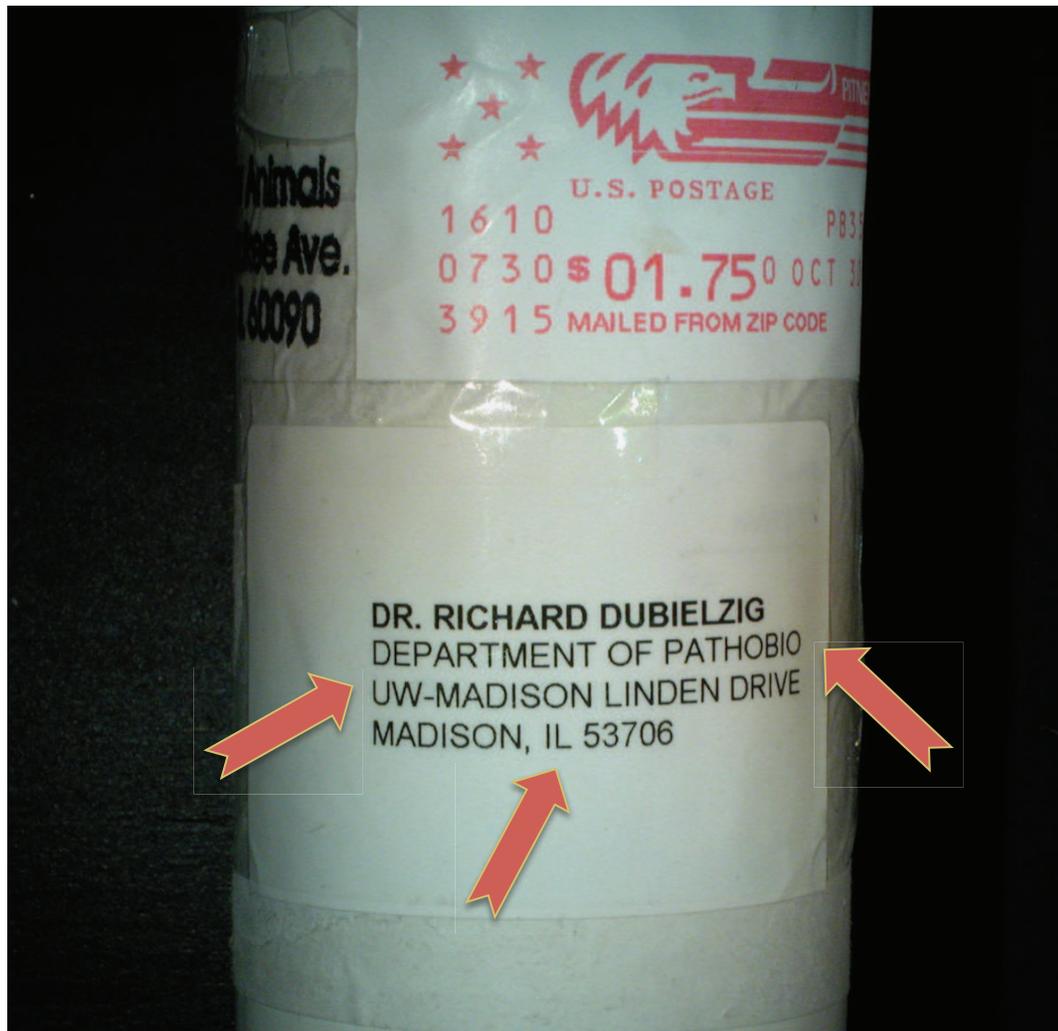
web@COPLW/pathform.md.nf

STORAGE 2

Freeze Artifact



Send sample to the right place!



We' ll take care of the rest!



Special Thanks

- Dr. Dubielzig
- Dr. Leandro Teixeira
- Dr. Chuck Schobert
- Kate Lieber
- All of you!

Questions?

