Preparing for the ACLAM Exam
Disclaimers

- This presentation is NOT endorsed by ACLAM
- This presentation does NOT represent the views of ACLAM
- These are just suggestions from my experience, study groups, and leaders in the field
- Most of the suggestions were gratefully received from others who went down this long, lonesome road before us...
Board Eligibility

- **Board Eligibility Requirements**
- Application: $200 (nonrefundable)
- If you are selected (become “board eligible”): $600 required to secure seat
- Three attempts, three years
  - Each attempt costs $600
  - Some exceptions made to extend the three attempts over more years, but rare and on case by case basis
Date of Exam

• A moveable feast 😊
• Based on the AVMA National Meeting
• In general: Two weeks before the Sunday of the AVMA Meeting = ACLAM board exam date
• Exam dates are posted on the ACLAM website
The Exam

- 2020: Fully electronic exam
- Details yet to be published
  - Multiple testing center sites?
  - Range of dates for the exam?
  - Two sections or one long exam?
  - Timed sections?
  - Lunch provided?
The Exam: Overview

• Represents expected knowledge of a NEWLY boarded LAM vet

• 350-380 multiple choice questions in two packets (morning and afternoon)
  – Advanced, step-down questions
  – Some basic questions

• Questions are with and without pictures

• Roughly 4 hours allowed for each packet

• Train towards a 10 hour day with brain FULL ON
KEEP CALM AND lets get Started
Basics: Know Your Enemy

• Following the [Role Delineation Document](https://example.com/RDD), the [ACLAM Test Template](https://example.com/ACLAM) will be used as the guideline to formulate your examination.

• **6 Domains** make up the exam:
  - Diseases 25%
  - Animal Care 24%
  - Research 20%
  - Regulatory 19%
  - Pain and Distress 10%
  - Education 2%
BASICS: Arm Yourself

• **ACLAM Certification Examination Reference List** (2018) – updated annually

• **Note that the ALL ACLAM Series Blue Books are heavily referenced and are considered core references**

• The examination questions are written from generally the same sources each year

• Journal articles used for the exam are typically those published within the last 5 years
BASICS: The Blue Book

• Lab Animal Med, 3rd Ed, Fox et al.
• A principal reference for the exam
• 2015
• A mere 1,708 pages
• Digital, Kindle, and hardcover paper formats available
• Can rent (!) or buy on Amazon, used and new
BASICS: References

- NRC Guide
- USDA AWA/AWR & Policies
- PHS Policy & HRE Act
- Percy and Barthold
- ACLAM BB: Anesthesia & Analgesia
- FASS Ag Guide
- NRC Occ Health Guide (Blue)
- CDC Biosafety in Microbiological and Biomedical Laboratories (BMBL)
- AVMA 2013 Guidelines-Euthanasia
BASICS: References

- ACLAM BB: Rat
- ACLAM BB: Mouse (4)
- ACLAM BB: NHP (2)
- ACLAM BB: Laboratory Rabbit, Guinea Pig, Hamster, and Other Rodents
- ACLAM BB: Planning and Designing Research Animal Facilities
- NRC: NHP Occ Health Guide (Tan)
- NRC: Mammals in Neuroscience and Behavioral Research (Red)
BASICS: AND MORE...

- Good Laboratory Practices
- Drug Enforcement Agency
- CITES
- Lacey Act
- International Air Transport Association (IATA)
- NIH rDNA Guidelines
BASICS: Journals

- Comparative Medicine
- JAALAS
- ILAR Journal
- JAVMA
BASICS: Ancillary Journals

• LabAnimal
• ALN Mag
• Lab Animal Science Professional
• Nature
Relevant Information

• **Organizations** – AALAS, AAALAC, NABR, FBR, NAL, ASLAP, ACLAM, ACAW

• **Industry** (JaxLabs, Harlan, CRL)
Relevant Information

• **Fellow Residents** – Study tips, mnemonics
• **Pathologists** – review of histology/gross lesions
• **Investigators** – equipment/behavioral tests

![Image: Keep Calm and Study On]
Training: The Early Years

Attend weekly Blue Book review!

• Read the chapter **ahead** of time
• Cross reference material (back chapters w/ species)
• Learn classic images
Training: The early years

Attend Journal Club!

• **Comparative Medicine, JAALAS**

• Read article, title page/abstract, introduction,

• Take key notes/write mock questions

• Look at photos from a question point of view

• Organize NOW, not your study year

• Consider select ILAR issues (esp. ones with single topics in one journal)
Training: The early years

Attend seminars!

- BRING YOUR BLUE BOOK
  - Write in references and notes alongside text

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Pseudotuberculosis (Corynebacteriosis)

- *Corynebacterium kutscheri* - gram-positive bacillus that can infect mice, rats, GP

*Note the multiple foci of abscessation, peripheral haemorrhage and consolidation in the lung*
Training: The early years

- Attend conferences and courses:
  - CLASS/POLA
  - Charles River Short Course
  - PRIM&R IACUC Conference
  - AALAS & APV
  - Workshop & Symposium on Laboratory Animal Diseases, BRL (Chicago IL)
  - Lab Animal Medicine and Pathology Seminar, WRPRC (Madison WI)
  - Workshop in Laboratory Animal Medicine (WLAM), NCSU (Raleigh NC)
Training: The early years

• Seek varied, on the job experiences
• Much to be said for experience gained during residency
• Prepare your spouse/family about time constraints in your study year (kiss your weekends goodbye...)
Get your head in the game...

- What other primates routinely have twins...?
- Marmosets!
- *Callathrix jachus*!
- Eusocial behavior!
- Fathers assist in rearing young!
- USDA Group 1!
- 1.6 ft\(^2\) and 20” high!
- Guide Group 1, 1.5 kg/2.1 ft\(^2\)/30” high!
Think About a Paper...

KEEP CALM AND ....yeah i got nothing...
What is this?
The most important advice for the early years....

• Plan your project and get it DONE
• Follow ACLAM guidelines
• Pick something SIMPLE with easy data collection
• Consider a back up
• Publish early – submit 13 months before exam date and prepare for at least a 6 month process
• This is NOT a PhD thesis!
Evaluating Progress

• **Mock Boards**
  – Use to measure individual progress
  – Aim for >62% just before real exam
  – TERRIFIC tool to condition you for the real test

• **Old mock board exams**

• **BB questions**

• **Practice quizzes**
Making Factoids Stick
One size does not fit all

• Whatever works:
  – Read
  – Outlines
  – Note-cards
  – Charts
  – Pictures
  – Mock Board book
  – Journal book
  – Voice recordings

• Always have something with you to read
Meta-Cognitive Note Taking

- © 2012 Stephen Carroll & Melissa Ganus
- Published model of success
- Emphasizes **hand written notes** as the tool to make lasting neural connections
- Built in study breaks make the difference
- 30 min, 2 min break, 30 min, 1 hour break: repeat
Getting Organized: The Year Before the Exam

- Did you get your paper done yet?? Accepted??
- Set a review and note taking schedule
- Primary and Secondary References
- Balance with slides
- **Prime the family:** It’s only for a few months and then it’s over!

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Practice Tests (~4 hrs)
#1 (initial) – June 14
#2 – July 13
#3 – July 22

x 8 weeks = approx. 72 hrs minimum
Addit. hrs w/ practice tests, week of studying
Don’t forget...

• Start to become familiar with numbers
  – Floor space, cage heights, temps, humidity, gestations, etc.

• Some things you may overlook:
  – ARENA IACUC Guidebook
  – Silverman IACUC Handbook
  – JAX handbook/website
  – Cost and Rate Setting Analysis Guide
  – AAALAC accreditation requirements
  – AALAS tech certification requirements
Don’t forget...

• Statistics, epidemiology, and management techniques
• Grants
• BIRDS
The Final Year
Study Group

• If you’re not in one, form one
• If you build it they will come!
• Accountability
• Try to limit those that call in; interactive studying works better in person
• Laboratory Animal Boards Study Group (LABSG)

• Boarded people have not forgotten about you, use them if needed
Final Year: Study Year

• Summer—hunt & gather
  – Collect your material together and get it organized
• September- January
  – Cover everything
• February-May
  – Cover it again
• May-June
  – New schedule
• Test Day
Final Year: Study Year

• **Study Schedule**
  – Make one early for the year
  – Adjust the one from the previous year’s group
  – Stick to it
  – Make another one for yourself (the last 6-8 weeks)
  – **Have faith in your schedules**
Final Year: Study Year

- End group study 4-6 weeks before the exam – follow “individual schedule”
- Last 6 weeks—major solo crackdown, quiz each other if studying together, isolate yourself from all distractions.
- Get work and family support and “go underground”
The last 6-8 weeks

• Make and **stick** to your own schedule
• Avoid distraction, don’t lose momentum
  – Auto bill pay for regular payments
• Balance time on with time off
• Just Say NO
• **Activity, sleep, nutrition, study**

Yes, you can have a life ..but not yet.
The last 6-8 weeks

- *Don’t read journals:* read abstracts & background
- *Know pictures,* unusual species
- 2 reference rule
- **Numbers:** Floor space, cage heights, temps, humidity, gestations, etc.
- Review your personal notebooks, flash cards, charts
- Blue Book, Blue Book, Blue Book
- Mock exams, mock exams, mock exams
Reality Check

• There are limits: I will never know it all
• There are possibilities: I know more than I think I do
• There is the present: I’m a great vet and this is just another exam
• There is a future: Whether or not I pass, I will still have a job
Game plan for the exam

- Take the day or night off before the exam (maybe even a few days!)
- Leave your study material at home/in hotel
- Have a nice meal the night before & relax
- Plan something fun immediately afterward

Possible setting: 2020
The Exam

• On day of exam, bring:
  – Government ID
  – Three digit ID (assigned by ACLAM)
  – Dress in removable layers to accommodate temperature fluctuations at site
  – HVAC and human noises: recommend earplugs
  – A full night’s rest
  – Practical attitude
  – Courage!
The Exam

• Enter with confidence, stay confident
• Brain dump: write down factoids on back of test
• **Take breaks** to avoid fatigue
• BREATHE
• Do not study/discuss/check answers at lunch
• Know What You Know—you know a lot
• Go with your gut
• Take Your Best Guess And Move On
• **Unless You Are 100% Sure You Selected The Wrong Answer, Do Not Change It**
The Exam

• Read the questions CAREFULLY
  – Mock board exams should help to prepare you for this
  – Circle what the question is asking

• Cover the answer choices, give it your best guess, and then see if your answer is among the choices

• Review the questions and your chosen answers before submitting the exam
After the Exam

• **NO ONE FEELS GOOD AFTER A BOARD EXAM: EVER.**
• Unwind – quiet time alone ...or join your colleagues for dinner and beverages and blow off some steam
• Still depressed? Write down all the questions you remember (do not share with others). Next year’s test will have at least 20% of the questions from your test... but you won’t be there...
ACLAM’s Passing Standard

• Angoff Modified Technique
• A group of ACLAM Diplomates, chosen to represent the spectrum of activities in our specialty, serves as a subject matter expert group in a peer review session to evaluate the examination
• Evaluates each item on the examination by estimating the percentage of the minimally acceptable candidate group that would answer the question correctly.
• These estimates, which the panelists make independently, are then combined across all panelists and questions, the result of which represented the minimally acceptable score.
Results

• Sunday of AVMA National Meeting the Board meets
• Cut score: historically ~66%
• Results emailed Mon-Wed
Recap

• Train as you fight
• Emphasize repetition
• Stamina
• Time on with time off
• Some studying is better than none at all
• Help your feeble brain: write it down
• Study with a buddy
Questions

KEEP CALM AND ASK ME ANYTHING
Weblinks

• ACLAM Test Template: https://www.aclam.org/certification/application-and-study-tools
• Reference List: https://www.aclam.org/certification/application-and-study-tools
• RDD: https://www.aclam.org/certification/application-and-study-tools
• Board Eligibility Requirements: https://www.aclam.org/certification/requirements
• Laboratory Animal Boards Study Group: http://www.labsg.org/
• ACLAM FAQ: https://www.aclam.org/certification/certification-faqs