AVS 101
Orientation
Veterinary Medicine
2017
John Gay, DVM PhD DACVPM
Veterinary Clinical Sciences
Washington State University

Heading on down the trail
Snippy on Turtle Draw

Goal 1: Prompt you to begin thinking about the decision points in your career pathway
To make the best investments of your scarce time and money, you need to:
- Understand how the world you’re heading toward works
- Identify the information you need for better decisions
- Avoid narrow or mistaken views (remove blinders)

Know where the forks are:
• I M O just passively going along with the flow is dangerous!

When you come to a fork in the road, take it!
Yogi Berra
https://quoteinvestigator.com/2013/07/25/fork‐road/

Goal 2: Prompt you to do critical non-curricular stuff!
- This is a competitive pull
  – Success now requires exceeding the minimal requirements!
- Figure out how to maximize value to employers and to clients
  – This is not just passively getting the degree anymore!
- Develop financial literacy to the point of understanding:
  – time value of money, rule of 72
  – loan amortization
  – investing for retirement
  – living costs (cars, rent, food, . . .)

Remove your Blinders

What does it take to get into veterinary school?
http://www.vetmed.wsu.edu/
Find out the real scoop here: “Future Students”

Prerequisites, good grades in hard courses and more!

Admissions
- . . .
  • Academic Criteria
  • Non-cognitive Criteria
  • . . .
  • Class Statistics
  • . . .

Read all this stuff soon!

How do you get admitted?
Show evidence of leadership and of service
- As a professional, veterinarians are expected to be community leaders
Show “headspace”- high ability, good attitude, strong ethics
- Do well in hard capstone courses
- Transcripts evaluated for course difficulty and course load!
- Rigor of institution and of major is judged
- Good grades in rigorous upper division, capstone courses
Show evidence of resilience and of persistence
★ Strong finish is most important (good grades in tough upper division)
Be well rounded and communicate well
- Significant sales or service employment experience preferred
- Be prepared for behavioral interview questions
★ Narrow, poorly communicating 4.0 students are regularly rejected

Warning: Some of this is my opinion; official WSU CVM information is @ http://dvm.vetmed.wsu.edu/admissions/
Meet the required but limited prerequisites

**Physical & Biological Science Requirements**
- Biology with lab 8
- Inorganic chemistry with lab 8
- Organic chemistry with lab 4
- Genetics 3 - 4
- Biochemistry 3
- Physics with lab 4
- Statistics (methods) 3
- Algebra, Pre-calculus or higher 3

**General Education Requirements**
- English composition/communication 6
- Arts & humanities/social science/history 21

**Total SEMESTER credit hours** 64

The specific requirements are limited to enable students from diverse undergraduate programs to meet prerequisites

How good is good enough to get in?

Selected statistics from WSU class admitted in 2017

<table>
<thead>
<tr>
<th>Of 1,493 applicants, 133 admitted (9%)</th>
<th>Cumulative GPA</th>
<th>Science GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>3.67</td>
<td>3.64</td>
</tr>
<tr>
<td>Range</td>
<td>3.14 - 4.00</td>
<td>3.16 - 4.00</td>
</tr>
<tr>
<td>Above 3.2</td>
<td>95%</td>
<td>97%</td>
</tr>
</tbody>
</table>

VMCAS Overall – 7,076 applicants, 4,120 (58%) admitted

[On-line at http://dvm.vetmed.wsu.edu/admissions/class-statistics]

**Word to the Wise:** Work on a good ‘Plan B’; there is ~ 40% chance you will be doing it!

What classes are in the DVM curriculum?

- Vet Microscopic Anatomy
- Vet Anatomy I & 2
- Vet Cell Physiology
- Physiology
- Large Animal Surgery
- Immunology
- Theriogenology
- Small Animal Surgery
- Clinical Pathology
- Equine Medicine
- Parasitology
- Pharmacology
- Vet Toxicology
- Clinical Vet Pharmacology
- Public Health
- Epidemiology

151 Credit Hours (~19 / semester)

[http://dvm.vetmed.wsu.edu/general/curriculum/]

What does a DVM degree cost?

4 years, usually beyond undergraduate degree

Annual in-state expenses:
- $25,934 annual tuition
- $1,232 books
- $11,356 room & board
- $3,542 travel & misc

**$ 42,064 per year**
~$174,000 Total
~$104,000 minimum

[http://dvm.vetmed.wsu.edu/finances/cost-of-attendance]

Follow your dreams -- but know where your dreams are leading you!

(Jeff Haden 4/26/11)
**DVM Student Debt:** The Elephant in the Room!

2017 AAVMC New Graduate Debt:
- 18% graduate debt free
- $156K AAVMC median debt
- 7% owed > $300K

2017 WSU New Graduate Debt:
- $136K mean total debt
- $124K DVM debt, all students
- $ 12K undergrad, all students

Source: AAVMC Annual Data Report 2016-17

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**What does the average DVM make?**

All DVM’s
$42.68 / hr
$88,770 / yr (Median)
2,080 hrs / yr

Range depends on:
- Employee vs. Owner
- Geographic area
- Individual competency
- Species focus

http://www.bls.gov/oes/current/oes_stru.htm
http://www.onetonline.org/find/

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**Use BLS Occupational Employment Statistics to compare a DVM career to Plan B careers**

17-2141 M: Mechanical Engineers

<table>
<thead>
<tr>
<th>Percentile</th>
<th>10th</th>
<th>25th</th>
<th>Median</th>
<th>75th</th>
<th>90th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage R1</td>
<td>$29,640</td>
<td>$36,170</td>
<td>$40,450</td>
<td>$45,150</td>
<td>$55,150</td>
</tr>
</tbody>
</table>

Typical starting wage:
- $34,790

Source: http://www.bls.gov/oes/current/oes_stru.htm

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**Thumb Rule:** What do you have to bring in to be worth a $90,000 salary? (Or why vets charge so much)

"Fee setting: A look at margins" (M. Heinke, DVM Newsmagazine 2/1/10)

- 8 hrs / d x 5 d / wk x 50 wks / yr = 2,000 hrs/yr + 2 wk vacation
- Small animal gross practice income needed per DVM:
  - 4 x salary to cover salary plus clinic overhead (overhead = 75% of gross practice income)
    - Need $360k gross practice income for $90k annual salary
    - If ~50% of time is billable => $360 per hr professional fee (not including lab fees, pharmaceuticals)
- Ambulatory-only LA practice gross:
  - 2 x salary to cover salary plus overhead, no clinic (overhead = 50% of gross practice income)
    - 2 x salary = $180,000, so 50% time is billable => $180 per hr professional fee

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**Why is student debt such a big deal?**

Applying some ‘thumb rules:’
- Employees net ~75% of their gross salary
  - $90,000 salary => $67,500 net take home
- If debt = first year salary (1:1), at 6.8% interest, 10 year payback:
  - 3% annual salary increase, loan payments are:
    - 13% of salary
    - 17% of net take home

Why don’t employers pay more?
- First, employees cost employer ~25% more than their gross salary (benefit contributions, taxes)
  - $90,000 salary => $113,000 employer cost

Wells Fargo Student Loan Debt Calculator
http://www.wellsfargo.com/student/planning/calculators/debt

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**These ‘Thumb Rule’ ratios are similar to those of other professional service businesses**

<table>
<thead>
<tr>
<th>Profession</th>
<th>Billing to Salary Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attorney</td>
<td>5 to 7</td>
</tr>
<tr>
<td>Accountant</td>
<td>4 to 5</td>
</tr>
<tr>
<td>Business Consultant</td>
<td>4 to 5</td>
</tr>
<tr>
<td>Clinic-based veterinarian</td>
<td>4 to 5</td>
</tr>
<tr>
<td>Industrial Designer</td>
<td>3.5 to 4</td>
</tr>
<tr>
<td>Consulting Engineer</td>
<td>3 to 10</td>
</tr>
<tr>
<td>Architect</td>
<td>2.5 to 3.5</td>
</tr>
<tr>
<td>Interior Designer</td>
<td>2.5 to 3.5</td>
</tr>
<tr>
<td>Ambulatory-only veterinarian</td>
<td>2</td>
</tr>
</tbody>
</table>

What are new DVM’s paid?
Average 2013 starting salaries, high to low, rounded

<table>
<thead>
<tr>
<th>Employment Type</th>
<th>% of New Graduates</th>
<th>Ave Salary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Animal excl</td>
<td>2%</td>
<td>$77,000</td>
</tr>
<tr>
<td>Companion excl</td>
<td>30%</td>
<td>$70,000</td>
</tr>
<tr>
<td>Companion pred</td>
<td>7%</td>
<td>$68,000</td>
</tr>
<tr>
<td>Food Animal pred</td>
<td>3%</td>
<td>$67,000</td>
</tr>
<tr>
<td>Mixed</td>
<td>9%</td>
<td>$64,000</td>
</tr>
<tr>
<td>Uniformed Services</td>
<td>2%</td>
<td>$63,000</td>
</tr>
<tr>
<td>Equine</td>
<td>2%</td>
<td>$47,000</td>
</tr>
<tr>
<td>Advanced Study</td>
<td>44%</td>
<td>$30,000</td>
</tr>
</tbody>
</table>

Managing your starting salary: debt ratio is why gaining financial literacy is so important

On average practice owners have more net income than employed practitioners

<table>
<thead>
<tr>
<th>Practice Type</th>
<th>Owner Net Income</th>
<th>Associate Net Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Animal excl</td>
<td>$127,000</td>
<td>$72,000</td>
</tr>
<tr>
<td>Food Animal pred</td>
<td>$100,000</td>
<td>$71,000</td>
</tr>
<tr>
<td>Mixed</td>
<td>$104,000</td>
<td>$75,000</td>
</tr>
<tr>
<td>Companion pred</td>
<td>$105,000</td>
<td>$77,000</td>
</tr>
<tr>
<td>Companion excl</td>
<td>$133,000</td>
<td>$87,000</td>
</tr>
<tr>
<td>Equine</td>
<td>$120,000</td>
<td>$71,000</td>
</tr>
<tr>
<td><strong>50th percentile overall</strong></td>
<td>$120,000 (43%)</td>
<td>$84,000</td>
</tr>
</tbody>
</table>

Can you go back home to practice?

Can you go back home to practice?

<table>
<thead>
<tr>
<th>State</th>
<th>Practitioner Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>MT</td>
<td>Companion Exclusive (&gt;90% small animal – cats, dogs, bird)</td>
</tr>
<tr>
<td>WA</td>
<td>Companion Predominant (&gt; 50%, &lt; 90% small animal)</td>
</tr>
<tr>
<td>39%</td>
<td>10%</td>
</tr>
<tr>
<td>2%</td>
<td>4%</td>
</tr>
<tr>
<td>1%</td>
<td>Equine Predominant (&gt; 50%, &lt; 90% equine)</td>
</tr>
<tr>
<td>2%</td>
<td>Food Animal Exclusive (&gt; 90% food animal)</td>
</tr>
<tr>
<td>15%</td>
<td>Mixed (&gt;25% SA &amp; &gt; 25% FA but less than 50% of above)</td>
</tr>
<tr>
<td>1,278</td>
<td>Total AVMA member private practitioners</td>
</tr>
</tbody>
</table>
Even ‘mixed’ practitioners are really small animal and ‘food animal’ are really dairy

<table>
<thead>
<tr>
<th>Practice Type</th>
<th>Species mix by median time spent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Animal exclusive</td>
<td>95% dairy, 5% beef</td>
</tr>
<tr>
<td>Food Animal predominate</td>
<td>62% dairy, 24% beef, 5% horses, 4% dogs, 2% cats</td>
</tr>
<tr>
<td>Mixed</td>
<td>29% dogs, 17% cats, 15% bovine, 12% horses</td>
</tr>
<tr>
<td>Companion predominate</td>
<td>52% dogs, 35% cats, 5% horses</td>
</tr>
<tr>
<td>Companion exclusive</td>
<td>60% dogs, 37% cats, 2% other, 1% birds</td>
</tr>
<tr>
<td>Equine</td>
<td>100% equine</td>
</tr>
</tbody>
</table>

AVMA Report on Veterinary Compensation, 2011

Dairy work back home?

Clarify your family value priorities and understand the practice economics for your species interest early in your decision process!

1 dot = 2,000 calved cows
~9 million head of dairy cows

What’s unique about Food Supply Veterinary practice compared to small animal practice?

Small Animal Practice
Dairy Practice

Besides small animal practice being indoors out of the weather, cleaner, smaller critters, . . . .

Food Supply Veterinary Medicine is focused on prevention

Prevention economics beat cure economics most of the time

Management and nutrition are at the root of most herd disease problems

• To understand how to prevent these problems, you must understand the specific management system
• Even true for mixed practitioners dealing with people “returning to the land”

PPM

Bad Management overwhelms the Best Vaccine every time!
With increasing herd size, what the veterinarian does changes

- Livestock are produced on fewer but larger farms – 6% of livestock operations produce 73% of livestock sales
- Become less of a "doer" and more of a trainer of the "doer," who is a farm employee
  - Involved in employee selection, training and monitoring
  - Traditional feedlot veterinarian role
- Develop farm-specific standardized operating protocols (SOP) that are executed by employees
  - More consistent practices in critical areas
  - Better preventive practices reduce treatment needs
- Fewer veterinarians are covering more cows
  - Midwest – small dairy herds: 1 vet to ~6,000 cows
  - New Mexico – large dairy herds: 1 vet to 20,000+ cows

To become a FSV, major in animal science, production track!

- Learn the basic food supply system components well
  - Soils, crops, animals, environment, farm input and food supply chains
- Take all ruminate nutrition that you can
  - Feed is ~50% of production costs!
- Take all reproductive physiology that you can
  - % calf crop is largest profit factor!
  - Learn to palpate and to do AI
- Take applied agricultural economics and ag business courses
  - Learn production accounting systems and data analysis
  - Become an Excel maven
  - FSVM is a business-to-business service!
- Learn human resources (employee management)
  - You will teach them to do most of the traditional 'hands-on' care
- Take the capstone farm management courses

Aim to become a excellent manager or herdsman!

Why applied animal science / farm management?

- Most disease problems involve nutrition and management
- Important decisions always involve economics and risk
  - Anyone not understanding economics of alternatives is much less useful to producers
- Much allied industry "competition" has this academic background

Veterinary herd production medicine texts contain much animal science and production management

Field and Taylor, 5th ed.

Why settle for average, anyway?

- Depends on:
  - Practice Ownership
  - Management
  - Specialization
  - Industry
  - Experience
  - Location
  - Hustle
  - ?

1 in 10 DVM's
$77.44 / hr
$161,000/yr
(top 10%)
2,080 hrs

What is the student to do?

Segue – Buddy, the family dog

Flossing

Packed for college

Veterinary herd production medicine

Chenoweth & Sanderson "Beef Practice"  
Risco & Melendez "Dairy Production Medicine"

http://www.bls.gov/oes/current/oes291131.htm
1 in 10 owners and 1 in 10 associates have these incomes:

<table>
<thead>
<tr>
<th>Practice Type</th>
<th>90% Owner Net Income</th>
<th>90% Associate Net Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Animal excl</td>
<td>$400,000</td>
<td>$105,000</td>
</tr>
<tr>
<td>Food Animal pred</td>
<td>$259,000</td>
<td>$111,000</td>
</tr>
<tr>
<td>Mixed</td>
<td>$240,000</td>
<td>$105,000</td>
</tr>
<tr>
<td>Companion pred</td>
<td>$292,000</td>
<td>$110,000</td>
</tr>
<tr>
<td>Companion excl</td>
<td>$310,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>Equine</td>
<td>$275,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>90th percentile</td>
<td>$300,000</td>
<td>$136,000</td>
</tr>
<tr>
<td>Overall</td>
<td>$120,000</td>
<td>$ 84,000</td>
</tr>
</tbody>
</table>

Table 15, AVMA Report on Veterinary Compensation, 2015

Obtaining a 90th percentile starting salary eases your debt management problems considerably

<table>
<thead>
<tr>
<th>2008 to 2013 data Employment Type</th>
<th>Median Starting Salary</th>
<th>90th Percentile Increase</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Animal excl</td>
<td>$71,000</td>
<td>$16,000</td>
<td>23%</td>
</tr>
<tr>
<td>Companion excl</td>
<td>$68,000</td>
<td>$17,000</td>
<td>25%</td>
</tr>
<tr>
<td>Companion pred</td>
<td>$66,000</td>
<td>$21,000</td>
<td>32%</td>
</tr>
<tr>
<td>Food Animal pred</td>
<td>$63,000</td>
<td>$14,000</td>
<td>22%</td>
</tr>
<tr>
<td>Mixed</td>
<td>$61,000</td>
<td>$15,000</td>
<td>24%</td>
</tr>
<tr>
<td>Equine</td>
<td>$34,000</td>
<td>$31,000</td>
<td>91%</td>
</tr>
</tbody>
</table>

How to be worth a $100K starting salary?

Know your industry completely inside and out:
- Be qualified to work as a manager or herdsman
- Have selected “practice ready” skills and knowledge
- Maximize your learning (time is your most scarce resource)
  - Use university teaching and learning services and websites

Outside of class:
- Spend at least one summer as hired labor on a 2,000+ cow operation
- Join Toastmasters to improve your verbal communication
- Practice leadership skills in student clubs
- Learn Agricultural Spanish
- Regularly scan trade magazines and websites (e.g., Ag Web, Beef Blog, Drover’s, Hoard’s)

Deliberate practice, deliberate practice — 50+ hours to gain minimal competence in a new skill

Cite: Bill Coplin’s 10 Skill Sets:
- Taking Responsibility
- Developing Physical Skills
- Communicating Verbally
- Communicating in Writing
- Working Directly with People
- Influencing People
- Gathering Information
- Using Quantitative Skills
- Asking and Answering the Right Questions
- Solving Problems

http://billcoplin.org/10_things_employers_want_you_to_learn_in_college/

Develop critical “soft” skills, which are not major parts of most degrees

Standout by investing in those important literacies that are not part of the professional curriculum

- Communication literacy
- Economic literacy
- Financial literacy
- Information literacy
- Marketing and Salesmanship literacy
- Sell successfully
- Quantitative literacy
- Statistical literacy
- Critical Thinking and Decision Making

Determine what success means to you and target it

Harness the power of your own intrinsic (internal) motivation by establishing your:
- Autonomy (chart your course)
- Mastery (competence, flow)
- Purpose (service)

20 min / night, 6 nights a week for 6 weeks = 1 credit (50 min/session x 15 sessions)
Invest 300 hours to become subject expert in ~5 years

Deborah A. Olson, PhD
Listen to Richard St. John: “8 to be great” keys to success

http://www.ted.com/speakers/richard_st_john

The veterinarians who do the best economically are paradigm-changing entrepreneurs

- Emphasize:
  - Those services purchased more by good managers than by bad
    - (Conventional practice is the opposite!)
  - Old services delivered more cheaply
- Capture an old market:
  - Solve problems preventing service consumption
- Create a new market:
  - New value-added service using new technology
- Entrepreneurship
  - Develop new business models
  - Learn marketing; the profession doesn’t market itself well
- Change is constant!

Schumpeter’s free-market “creative destruction” process