

Veterinary Workforce Landscape & Initiatives at Colorado State University



Sue VandeWoude, DVM

University Distinguished Professor and Dean, CVMBS

Report to Water Resources and Agriculture Review Committee

Sept 11, 2023



**COLLEGE OF VETERINARY MEDICINE
AND BIOMEDICAL SCIENCES
COLORADO STATE UNIVERSITY**

CSU College of Veterinary Medicine and Biomedical Sciences (CVMBS): DVM overview

- **Veterinary Classes began at Colorado Agricultural College in 1883**
- **More than 8000 graduate veterinarians**
- **138 students matriculated each fall from a pool of >4200 applicants**
- **Flagship programs in >25 veterinary specialties, renowned tertiary hospital**
- **~100 Interns and Residents**

U.S. News & World Report ranks CSU the nation's No. 2 vet school

24 Apr, 2023
By [Anne Manning](#)



CSU CVMBS: Beyond DVM

- **Two undergraduate degrees (~1000 students)**
- **Medical education program in conjunction with UC Denver**
- **~300 MS, PhD candidates**
- **World class research exceeding \$60M in expenditures: Infectious Diseases, Cancer, Neuroscience, Orthopedics, Rural Occupational Health, Translational Medicine, One Health, etc**



Veterinary Workforce: State of the Profession and CVMBS Initiatives

Review of the issues:

- **National and Colorado Veterinary Workforce Trends: General and Livestock/Rural**
- **Preparation of veterinary students for employment readiness and careers in primary care: Spectrum/Contextualized/Incremental Care**

Ongoing Colorado Initiatives, CSU CVMBS and other partners:

- Colorado Veterinary Education Loan Repayment Program (VELRP)
- Livestock and Veterinary Workforce Task Forces
 - Stakeholder, practitioner and student surveys in process
- DVM Curriculum Renewal, Livestock Curriculum,
- Veterinary Health Education Center: Increasing Class Size and Student Competency
- Veterinary Professional Associate (Wayne Jensen)



Veterinary Workforce: AVMA News 10.22

Survey among employers advertising open positions

HOME ▸ AVMA NEWS ▸ VETERINARIAN EMPLOYERS REQUIRE INNOVATIVE SOLUTIONS TO ATTRACT, RETAIN STAFF MEMBERS



Veterinarian employers require innovative solutions to attract, retain staff members

Mean income in 2022 for all veterinarians is \$136,837

By Malinda Larkin
October 25, 2022



Veterinary **unemployment rate dropped from 1.5% in 2021 to .5% in 2022**

Corporate job listings exceeded independently owned practices by 2-3 x

National average of **1.8 veterinary job openings per employer, national average of .6 jobs filled**

Avg **49 hours worked** per week (equine practitioner 58 hours/week)



Veterinary Workforce: BLS 9/23

Veterinarians



OOH HOME | OCCUPATION FINDER | OOH FAQ | HOW TO FIND A JOB | A-Z INDEX | OOH SITE MAP

OCCUPATIONAL OUTLOOK HANDBOOK

Job Outlook

“**Employment of veterinarians is projected to grow 20% from 2022-23**, much faster than the average for all occupations.”

“**About 5000 openings for veterinarians are projected each year, on average, over the decade...**”

- Summary
- What They Do
- Work Environment
- How to Become One
- Pay
- Job Outlook

Summary

Quick Facts: Veterinarians	
2022 Median Pay ?	\$103,260 per year \$49.64 per hour
Typical Entry-Level Education ?	Doctoral or professional degree
Work Experience in a Related Occupation ?	None
On-the-job Training ?	None
Number of Jobs, 2022 ?	89,500
Job Outlook, 2022-32 ?	20% (Much faster than average)
Employment Change, 2022-32 ?	17,700

Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Veterinarians, at <https://www.bls.gov/ooh/healthcare/veterinarians.htm> (visited September 06, 2023).

CVMBBS 2022 graduates: Highly employed



2022 AVMA Survey of Graduating Veterinary Students
Colorado State University

60% response rate (86 responses)

On average, graduates received 3.3 offers (most commonly a graduate rec'd 2 offers)

98% had accepted a position by date of survey, 84% got their first choice

35% going on to further education (intern, residency, other graduate programs)

31 in private practice were offered median salary of \$120K

68% rec'd signing bonus, mean \$15500

21 rec'd moving stipend, mean \$4700

Most had standard benefits (vacation, health care, CE, etc)

Median hours per week 45, 98% anticipated at least 48 weeks per year

Median Debt \$231,000 for those with loans, \$165,000 overall

Median age 28





Livestock/Rural Veterinary Shortage: A National Crisis

ANIMALS

There's a shortage of vets to treat farm animals. Pandemic pets are partly to blame

December 19, 2022 · 5:00 AM ET

SCOTT NEUMAN



<https://www.npr.org/2022/12/19/1143391007/veterinarian-shortage-family-pet-farm-animals>



Highlights of the Veterinary Shortage Survey of Colorado Cattlemen Association Membership



**COLORADO
CATTLEMEN'S
ASSOCIATION**
Advancing the Legacy

Summary of Responses from CCA members, March 2023:

Outstanding response representing more than **54 CO counties**

40.3%: veterinary service needs are not being met

56.5%: veterinary shortage is affecting livestock health as well as economic costs to livestock production.

81.5%: the availability of veterinary services will become more challenging

66.9%: located 20 miles or more from a veterinarian



Erin Karney, CCA Executive VP
Keith Roehr, Chair, CCA Animal Health and Welfare Committee

Comments:

“Emergency care is overwhelmingly not available to those in rural areas. Most times a true emergency will result in animal death.”

“Many vets are on the verge of retirement..care is about to become even more difficult.”

“The shortage of veterinarians affects current veterinarians..[they] are spread thin, with no back-up and no time off, and many are leaving the field.”



Highlights of the Veterinary Shortage Survey of Colorado Cattlemen Association Membership

Conclusions of CCA Shortage Survey:

Rural Colorado is in a crisis when it comes to the availability of veterinarians and...the problem is only going to get worse.

Livestock producers are willing to get creative on determining solutions for addressing this crisis.

Options vary from recruitment of new veterinarians as well as looking at services that could be provided by a certified individual or technician to relieve the demands on the existing veterinarians.

Colorado Cattlemen's Association Policy on Rural Veterinarian Shortage

Monday Jan 30th, 2023 242 Views Line on Agriculture





Is CSU Admitting the Right Students ?

Applicant/Admit: With a Career Goal in Large Animal/Livestock

Large Animal Exclusive – Livestock, Horses

Mixed Practice – 80% Large / 20% Small

Year	Applicant - % of pool	Admit - % of Class
2016	35%	35%
2017	36%	32%
2018	34%	32%
2019	34%	38%
2020	31%	28%
2021	31%	35%
2022	33%	35%

DVM Applicant Stats - Comparison

effective: 10.06.22

Demographics	Class of 2027	Class of 2026
1stG	28%	28%
Rural	29%	33%
Goal: Large Ani/Livestock	35%	33%

Tracks selected by students

Year	General	Large	Small	Total	% general	% large	% small
2016	34	31	66	131	26.0%	23.7%	50.4%
2017	41	18	84	143	28.7%	12.6%	58.7%
2018	36	46	58	140	25.7%	32.9%	41.4%
2019	43	31	78	152	28.3%	20.4%	51.3%
2020	56	36	67	159	35.2%	22.6%	42.1%
2021	44	24	90	158	27.8%	15.2%	57.0%
2022	52	30	76	158	32.9%	19.0%	48.1%
2023	41	31	81	153	26.8%	20.3%	52.9%
2024	43	27	86	156	27.6%	17.3%	55.1%

****1/3 CVMBS admitted students interested in Livestock (~46/yr)**

****~30% admitted students rural and first generation (~41/yr)**

****significant proportion of students track in large/mixed animal (70 in '24)**

CVMBBS 2022 graduates entering livestock/large animal



2022 AVMA Survey of Graduating Veterinary Students
Colorado State University

Q13. What type of employment or advanced education have you accepted?
(Among those who accepted a position)

	N	%
Food animal practice (predominant)	2	2.5%
Mixed practice (at least 25% companion and 25% food or equine)	9	11.4%
Companion animal practice (predominant)	2	2.5%
Companion animal practice (exclusive)	32	40.5%
Equine practice	3	3.8%
Clinical Practice Total	48	60.8%
Federal Government (civil service)	1	1.3%
Public or Corporate Total	1	1.3%
PhD (Doctor of Philosophy)	1	1.3%
Internship (Private or Academic)	24	30.4%
Residency Program	3	3.8%
Combined residency/PhD program	2	2.5%
Advanced Education Total	30	38.0%
Total	79	100.0%

Of 48 accepting offers in clinical practice:

2.5% food animal (2)

11.4% mixed (9)

3.8% equine (3)

29.1% (14 of 48) going into practice in large animal

Primary reason for accepting offers:

1. Mentorship (77%)
2. Location (64%)
3. People (57%)
4. Wellbeing (56%)
5. Work hours (52%),
6. Compensation (45.5%)

Of those with positions, 17.8% (14 of 79) of accepted positions were large animal/mixed practice



Summary: Workforce

**Multiple sources point to veterinary workforce shortages nationally
Colorado rural/livestock shortage situation is critical**

CSU is:

Admitting students interested in livestock

Admitting rural/first generation students

Students are taking large animal/mixed animal curricula

HOWEVER we are limited in how many students we can admit and train

In 2022, 30% of graduates entering practice immediately entered food animal, mixed animal, equine

HOWEVER actual numbers are SMALL relative to documented need



Contextualized/Incremental/Spectrum of Care Preparing 'day one' ready DVMs for primary practice

HOME ▸ AVMA NEWS ▸ HOD REQUESTS SPECTRUM OF CARE RESOURCES



HOD requests spectrum of care resources

Delegates say communication, recordkeeping, education key to assisting clients in making decisions for their animals

By Malinda Larkin
August 08, 2023

Share:



Tweet

Like 0

Share

'Spectrum of care' emerges as a veterinary approach

Delegates ask the AVMA for guidance on how to put it into practice

July 21, 2023 (published)

By [Jennifer Fiala](#)

<https://www.avma.org/news/hod-requests-spectrum-care-resources>

<https://www.aavmc.org/the-spectrum-of-care-initiative/>



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The Spectrum of Care Initiative



SPECTRUM OF CARE INITIATIVE

The AAVMC's Spectrum of Care Initiative: Developing strategies for veterinary educators to prepare graduates to practice across the spectrum



What is Spectrum of Care?

- Veterinary care is becoming **less affordable and more specialized**
- Spectrum of Care/Incremental Care/Contextualized care considers the **wide range of care options veterinarians can provide**
- An array of options is necessary to provide care to all clients and pets
- **Requires partnership** among AVMA, State Boards, AAVMC—and veterinary colleges



(Similar to General Practice Physician training wrt MD specialists)

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2023 APPLICATION

The 2023 Veterinary Education Loan Repayment Program application will close December 31, 2023.

[Apply Now](#)

VETERINARY EDUCATION LOAN REPAYMENT PROGRAM

[Signed into law](#) in 2017, the Veterinary Education Loan Repayment Program paves the way for veterinarians to work in rural communities where large and small animals – and their owners – need professional services. The Veterinary Education Loan Repayment Program council selects up to six qualified veterinary applicants to participate in the program.

The Veterinary Education Loan Repayment Program is part of a national effort to address veterinary shortages in rural areas. Applicants may also be eligible for funding through the National Institute of Food and Agriculture's [Veterinary Medicine Loan Repayment Program](#) or [Veterinary Services Grant Program](#).

REPAYMENT AMOUNTS

Selected veterinarians are eligible for the following loan repayment amounts (up to \$90,000) based on length of participation in the program. Finalists will be required to provide additional financial information.

- Upon completion of six months of veterinary service, up to \$15,000
- Upon completion of two years of veterinary service, up to an additional \$20,000
- Upon completion of three years of veterinary service, up to an additional \$25,000
- Upon completion of fourth years of veterinary service, up to an additional \$30,000

Are you a Colorado veterinarian looking for support repaying your veterinary loans?

Colorado veterinarians have access to several programs that assist with veterinary education loan repayment while also assisting communities in need. There has been a nationwide shortage of large animal veterinarians in rural areas since 2003; the intent of these programs is to strengthen the nation's animal health infrastructure with particular emphasis on rural areas that lack food animal veterinarians. Each year, USDA provides a list of designated **veterinary services shortage situations** based on the recommendation of the Colorado State Veterinarian's Office. Veterinarians interested in receiving funding to work in a shortage area can contact the [Colorado State Veterinarian's Office](#) to request their area be designated as a shortage area.

Are you a community or organization looking for resources on grant funding? [Click here.](#)

PLEASE NOTE: These are not CVMA programs and CVMA does not provide funding for these programs. The information provided on this page is available only for educational purposes. Please contact the program administrator for more information about these programs.

Click the links below to navigate between the programs listed on this page:

[Colorado Veterinary Education Loan Repayment Program \(VELRP\)](#)

[USDA Veterinary Medicine Loan Repayment Program \(VMLRP\)](#)

[Public Service Loan Forgiveness \(PSLF\)](#)



<https://www.colovma.org/services/veterinary-education-loan-repayment-program/>

<https://www.colovma.org/veterinary-services-funding-programs/>



Taskforce on Colorado Rural Veterinary Workforce Crisis

Convenor:

Chancellor Tony Frank

Members:

CSU, CVMA, CCA, CLA,
others

Analysis:

One Health Institute, COA,
CVMBS

Goals:

Identify drivers of livestock veterinary workforce gaps; project current and 5-20 year needs for livestock veterinarians, as well as necessary skill sets for day 1 graduates; identify potential solutions

Outstanding Questions:

- *What is the current and projected 5-year need for rural veterinarians in Colorado?*
- *What skill sets are required for successful rural veterinary practitioners?*
- *What are current and future cultural, economic, and societal trends that new graduates need to be prepared to manage?*
- *What factors limit employment of new veterinary graduates in rural areas?*
- *What solutions are implied by these findings?*

Livestock Workforce Surveys

Partnership among task force and CSU CVMBS and College of Agriculture on behalf of CSU task for to assess livestock/rural veterinary shortages

Goal: **Identify drivers and extent of livestock shortage and suggest education and training and other practical solutions.** Final project completion estimated spring/summer 2024

Survey 1: Colorado Rural and Livestock producers and veterinarians

*Responses being collected now through end of September

*Over 175 responses to date

*Preliminary results available October; Final results and report available Summer 2024.

Survey 2: Veterinary students to assess career choice influences; under construction for delivery this fall

*Outcomes to assess reasons students 'drop out' of livestock/rural career track



Catie Cramer

Assistant Professor

Animal Sciences

College of Agricultural Sciences

Animal Sciences Building, Room

Phone: 970-491-6493

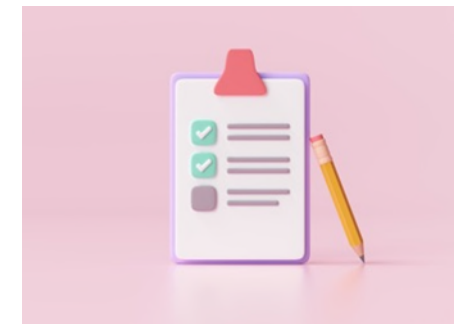
Email: catie.cramer@colostate.edu

Education:

Ph D, University of Wisconsin-Madison; Dairy Science

MS, University of Wisconsin-Madison; Dairy Science

BS, Colorado State University; Animal Science



Colorado Veterinary Shortage/Workforce Policy Analysis



ANIMAL-HUMAN POLICY CENTER
COLORADO STATE UNIVERSITY

Partnership among CSU Animal Human Policy Center and stakeholders from government, private practice, non-profit sector, and academia.

Goal: **Assess CO veterinary professionals' perspectives** on Colorado veterinary shortage/workforce challenges, impacts on specific sectors, and **support for programs and solutions to guide policy discussions**



Rebecca Niemic,
Director

Survey 1: Colorado veterinarians, technicians, and practice owners/managers to assess workforce characteristics, area-specific challenges, and support policy solutions

*Survey was closed on September 1st and received 736 responses

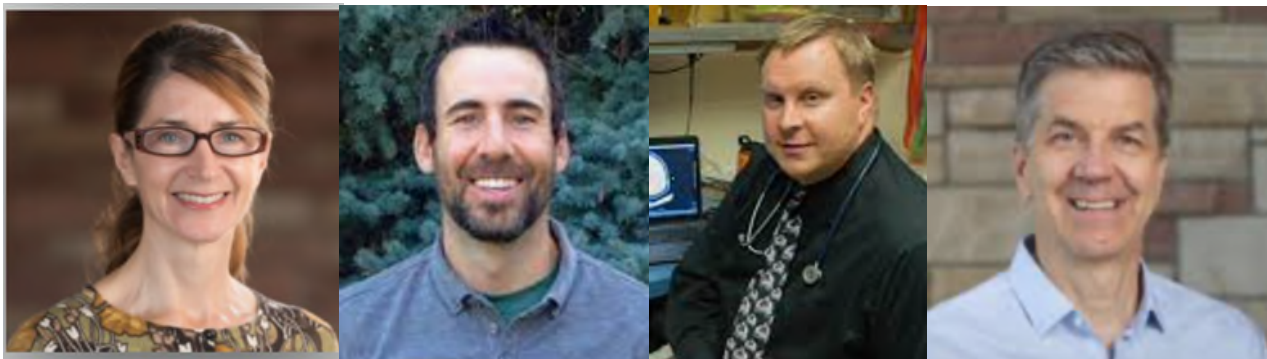
*Draft results anticipated by end of September

Survey 2: General and underserved sectors of the pet-owning public will be targeted to assess access to care. Anticipated distribution in October.



CVMBBS DVM Curriculum Renewal Goals

- **More and earlier clinical exposure/skill acquisition/clinical relevance: Day One Ready**
- Guided, inquiry-based approach to stimulate application of knowledge
- Roadmap for successful progression through the curriculum
- Growth mindset
- Sense of community/professional identity
- Development of new teaching methods/skills and professional development efforts



Melinda Frye, DVM, PhD, Assoc Dean Vet Academic & Student Affairs

Andrew West, PhD, Asst Dean of Teaching and Learning

Matt Johnston, VMD, Co-Chair Curriculum Renewal Task Force

Paul Avery, VMD, PhD, Co-Chair Curriculum Renewal Task Force



CVMBBS Livestock Clinical Education Renewal

- Engage with regional to expand **externship experiences**, **enhance livestock hospital services**, and **catalog client needs**
- Recruit a livestock epidemiologist, and **planning additional future hires**
- **Expand veterinary extension positions** in Colorado
- **Consult with regional veterinary schools** regarding approaches to mitigate livestock veterinary shortage
- **Implement educational strategies** to enhance student placement in rural communities.



Curriculum Renewal Drives New Programs and Facilities

Faculty Fora, Focus Groups, Surveys, Votes, Feedback, Content Creation
May 2022 Qualtrix Survey: 96-98% Approval/Approval Minor Modifications

Working groups, Meetings, Coaching,
curriculum content development

2016 2017 2018 2019 2020 2021 2022 2023 2026



↑
Realization
of need for
curriculum
renewal

↑
**Consideration of
new
facility to
accommodate
needs**

↑
Implementation



October, 2022, CSU BOG approval of Program Plan
August, 2023, CSU BOG approval of Finance Plan

↑
Curriculum
Renewal
Committee
Two .5-.75FTE
faculty hired

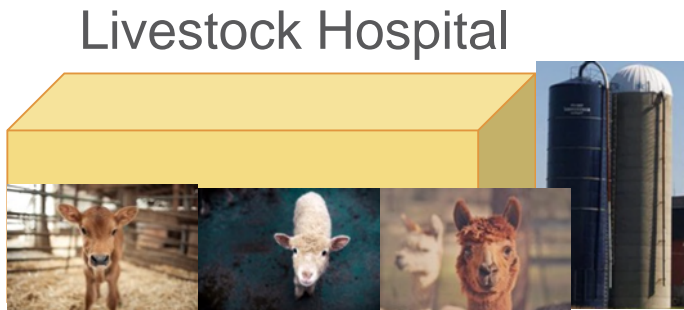
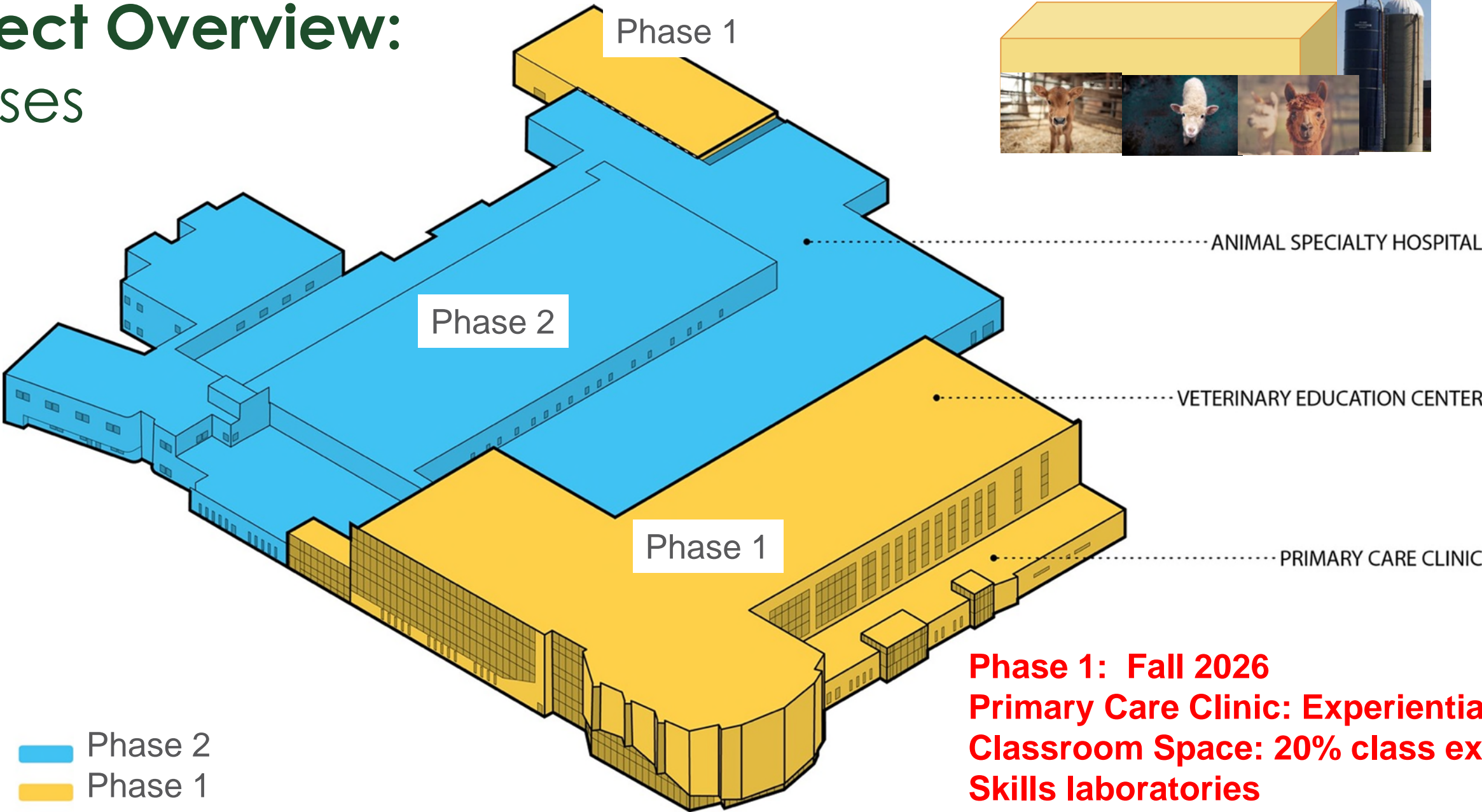
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Discussions begin:
Competency-
Based Veterinary
Education

Modernizing facilities to align with education

- Construction of Primary Care Center (PCC), Veterinary Education Center (VEC), and Livestock Hospital **to support experiential learning** and **expand access to care/spectrum of care training**
- Veterinary Education Center classroom construction for DVM years on and two on South Campus to accommodates **student enrollment growth by 20%**
- Livestock Hospital (Phase 1) and Animal Specialty Hospital (Phase 2) provide modern, WELL- and LEED-certified facilities **to accommodate 21st century veterinary medical care, education, and scholarship**

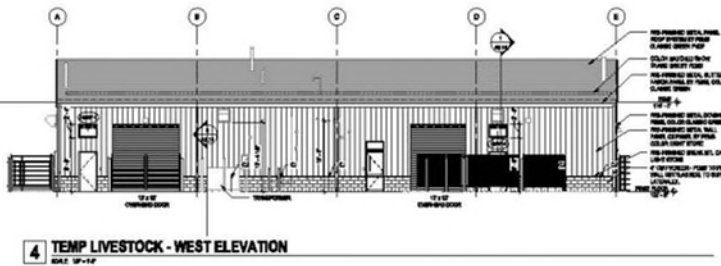
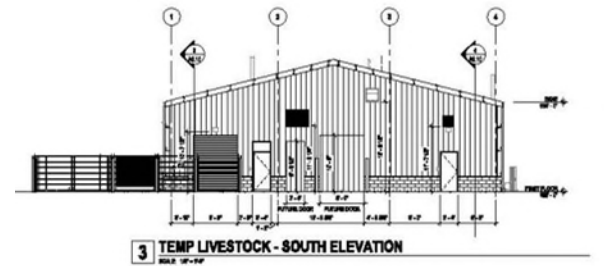
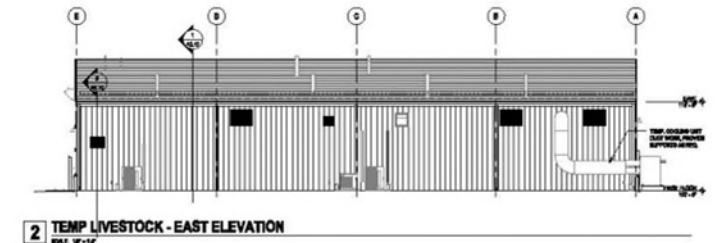
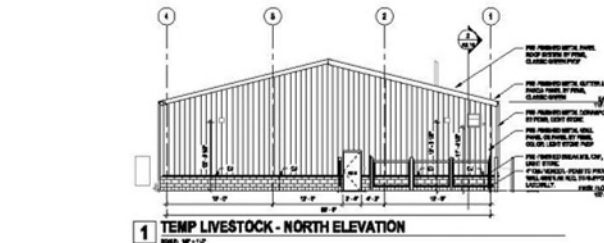


Project Overview: Phases



Phase 1: Fall 2026
Primary Care Clinic: Experiential Learning
Classroom Space: 20% class expansion
Skills laboratories
New Livestock Hospital

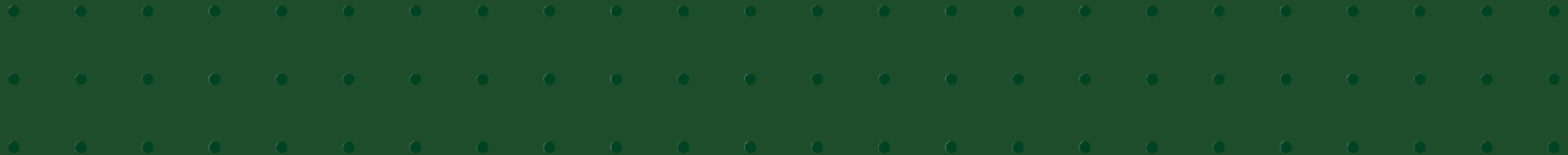
Temporary Livestock Hospital, August 2023





THE FUTURE OF VETERINARY MEDICINE STARTS HERE!

The Veterinary Health and Education Complex will advance animal healthcare through integrated education, clinical practice, and research.





Summary: Initiatives to Address Workforce

Ongoing analysis of state of Colorado Veterinary Workforce and potential policy solutions (draft report Nov 2023)

Ongoing analysis of rural/livestock veterinary crisis with potential educational, economic, workforce solutions (draft report Nov 23, Final report Spring 2024)

Increasing class size 20% starting in 2026

Emphasizing experiential learning, spectrum of care training, clinician readiness with new curriculum

Veterinary Health and Education Complex Phase 1



Next up: Wayne Jensen, Professor, CVMBS: Veterinary Professional Associate

Thank you



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COLORADO STATE UNIVERSITY