



Educational Challenges and Opportunities in Food Supply Veterinary Medicine: Recruitment, Retention, and Educational Programs

Large Herd Dairy Production Medicine Training Consortium

Dr. Terry W. Lehenbauer



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and Research Center*

March 11, 2012



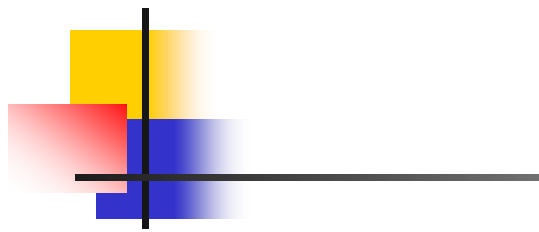
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Taking a closer look at the VMTRC





UCD SVM

240 miles

VMTRC





Reflections from the past – the 1970's * (Dean Emeritus Bennie Osburn)

- “As the area surrounding Davis began to shift away from animal agriculture to other types of farming enterprises, the School initiated planning efforts to establish a satellite teaching and research program in the central valley focused on livestock health and **large (herd) production issues.**”

* <http://www.vetmed.ucdavis.edu/about/reflections.cfm#>

Reflections from the past –

the 1980's * (Dean Emeritus Bennie Osburn)

- “The Veterinary Medical Teaching and Research Center (VMTRC) in Tulare officially opened **(1983)**, bringing service to dairy producers and providing a hands-on educational experience for our students in herd health and production management practices.”



Tulare Campus – Aerial View



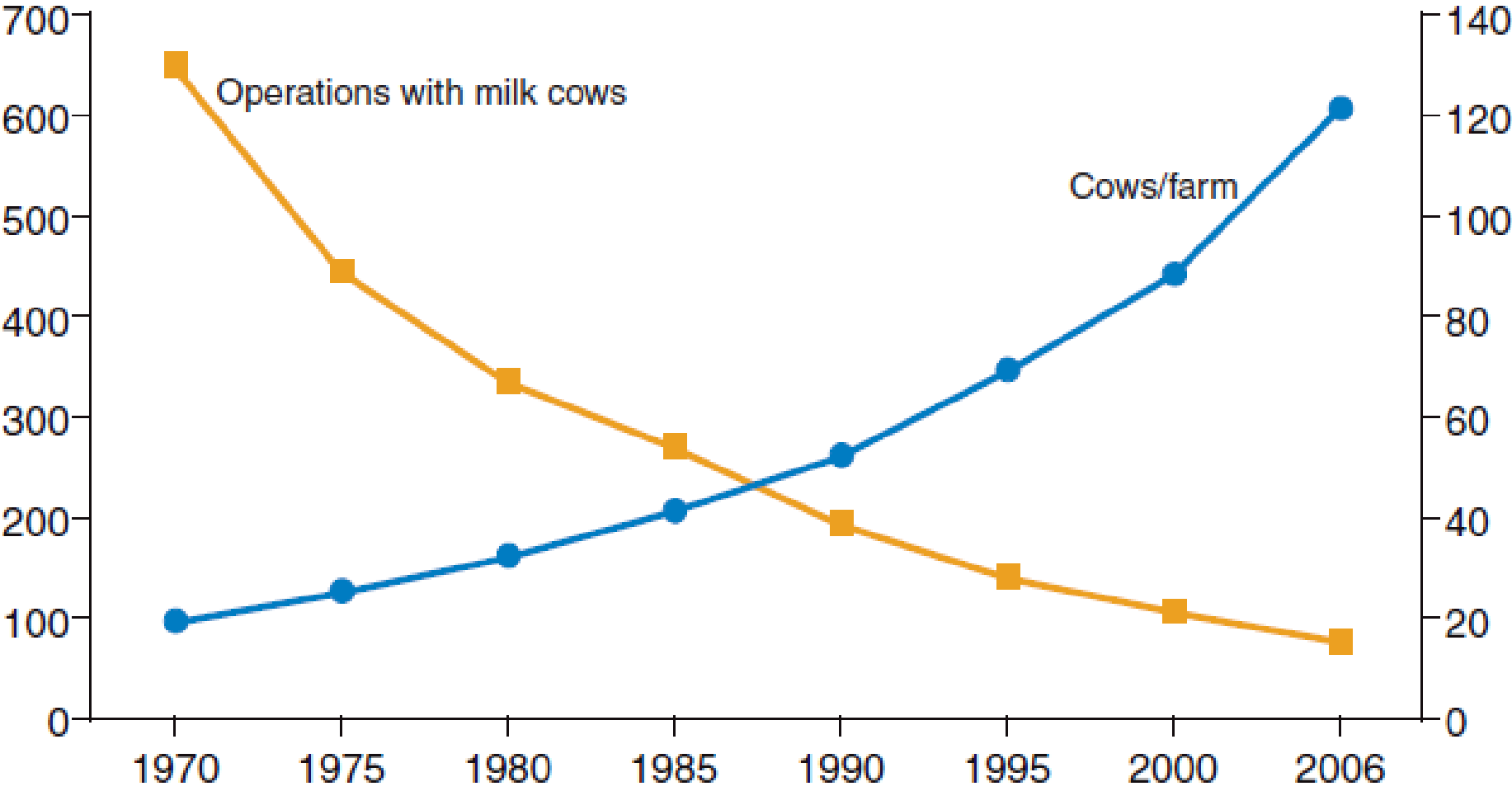
Trends in the dairy industry



The number of dairy farms is declining, while average size is growing

Number of farms (1,000)

Cows per farm



Source: USDA, NASS.

Number of Milk Cow Operations, Percent of Inventory, and Percent of Milk Production by Size Group – United States: 2010 and 2011

Herds with $\geq 1,000$ cows = 50.3% of milk production

	Operations		Percent of inventory		Percent of production	
	2010	2011	2010	2011	2010	2011
Head	(number)	(number)	(percent)	(percent)	(percent)	(percent)
1-29	20,000	19,400	1.7	1.6	1.1	1
30-49	10,800	10,100	4.7	4.3	3.5	3.2
50-99	15,800	14,800	12.2	11.2	10.6	9.4
100-199	8,600	8,300	12.3	11.9	11.3	10.9
200-499	3,950	4,000	12.5	12.5	12.6	12.6
500-999	1,670	1,650	12.4	12.3	12.7	12.6
1,000-1,999	920	950	13.3	13.7	15.5	15.7
2,000+	760	800	30.9	32.5	32.7	34.6
Total	62,500	60,000	100	100	100	100



California / Tulare County

2010 Dairy Statistics

Category	California	Tulare County
Number of Dairies	1,715	311
Number of Dairy Cows	1.85 million	502,395
Average Herd Size	1,083	1,615
Milk Production	40.4 billion lbs.	10.9 billion lbs.
U.S. Milk Production Ranking	1	1
% of US Total Milk Production	21%	5.7%
# Processing & Mfg. Plants	140	13
2010 Milk & Cream Sales	\$5.9 billion	\$1.6 billion

From: *2010 California Dept of Food & Agriculture – California Dairy Statistics*
2009 Tulare County Farm Bureau Ag Facts

Large dairy herds in California





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Healthy Cows

Productive Herds

Confident Consumers



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■ Faculty & Clinicians

■ [Sharif Aly](#)

Assistant Professor of Epidemiology and Biostatistics

■ [John Champagne](#)

Service Chief & Dairy Production Medicine Clinician

■ [James Cullor](#)

Professor & Director of Dairy Food Safety Laboratory

■ [Alistair Kenyon](#)

Dairy Production Medicine Clinician

■ [Terry Lehenbauer](#)

Associate Professor and Director

■ [Heidi Rossow](#)

Assistant Professor of Ruminant Nutrition

■ [Noelia Silva Del Rio](#)

Dairy Herd Health Extension Veterinarian

Dairy Production Medicine (DPM)



Student Training



Class of '2011' (125)





Dairy production medicine training at the VMTRC

- Learning Objectives include these areas:
 - Animal welfare
 - Nutrition
 - Milk quality
 - Reproduction
 - Herd management
 - Disease management
 - On-farm food safety

Dairy production medicine clinical training

- Maintain and enhance the “hands-on” approach



VMTRC Core Herd Program

Dairy Production Medicine - Tulare Service

	2006-07	2007-08	2008-09	2009-10	2010-11
Number of Core Herds					
Calf Ranch	4	4	2	2	1
Dairy Farms	9	7	13	13	13
Private Practice Consulting Herds	-	-	3	4	3
# of Animals Under Care					
Calf Ranch	95,000	99,000	87,000	87,000	80,000
Dairy Farms	46,650	38,750	46,350	38,950	45,950
Private Practice Consulting Herds	-	-	8,000	11,200	8,200
Total Animal #'s:	141,650	137,750	141,350	137,150	134,150

On-farm clinical training



Vet Student Clinical Rotations

Clinical Rotations	AY 05/06		AY 06/07		AY 07/08		AY 08/09		AY 09/10		AY 10/11	
	UCD	Non-UCD	UCD	Non-UCD	UCD	Non-UCD	UCD	Non-UCD	UCD	Non-UCD	UCD	Non-UCD
< 1 Week	1		1									
1-Week			1	1								
2-Week	5	15	7	10	9	5	7	6	15	6	10	7
3-Week	1	4		2		13	1	5		7	2	2
4-Week	7	9	4	14	1	2		11	6		3	4
8-Week	2		4		2		4		6		8	
Sub Total	16	28	17	27	12	20	12	22	27	13	23	13
AY Totals	44		44		32		34		40		36	
Total Teaching Weeks	135		146		95		120		135		138	

Dairy Production Medicine Training





3-YEAR RESIDENCY Specialists in Dairy Production Medicine

(includes MPVM graduate professional degree)



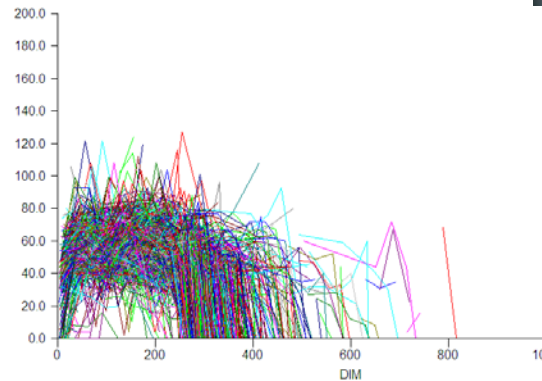
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- **Dairy Production Medicine Residency**
 - Specialty board(s) for which residents in DPM are trained:
 - American Board of Veterinary Practitioners – Dairy Practice
 - **First of 4 dairy residency programs in US approved by ABVP**
 - American College of Veterinary Preventive Medicine

Research



$$Y_{ijk} = X_{ijk} \beta + V_k^{cow} + U_{jk}^{lactation} + e_{ijk}$$

A vision for dairy production medicine



Implementing a future national center concept in veterinary education for the dairy industry

H. Fred Troutt, VMD, PhD, DACVN, and Bennie I. Osburn, DVM, PhD, DACVP

1290 Views: Commentary

JAVMA, Vol 232, No. 9, May 1, 2008

- The profession needs to focus resources on the development of **species specialists**
- Need to include focus on **the animal population** and **associated management** as it relates to health
- **Food Animal Production Medicine Consortium: 1989 - 2000**

Perspectives in Professional Education

Veterinary schools and the profession: a search for bearings in the new century

Robert R. Marshak, DVM, DACVIM

1234 Views: Perspectives in Professional Education

JAVMA, Vol 227, No. 8, October 15, 2005

- “A school’s geographic location, regional demographic trends, changing agriculture, and other factors determine the **size and quality of clinical case material** for teaching and research. In this respect schools differ greatly.”

Perspectives in Professional Education

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Robert R. Marshak, DVM, DACVIM

1234 Views: Perspectives in Professional Education

JAVMA, Vol 227, No. 8, October 15, 2005

- “Since the Pew report, pressure has been building to reorient curriculums away from students’ general professional education toward **earlier specialization**. Formal elective tracks are seen by some as an efficient way to prepare students to satisfy unmet societal needs, particularly in agriculture, public health, ecosystem health, and biomedical science.*”

* Eyre P, Nielsen NO, Bellamy JEC. Serving society first: a time for change in veterinary medicine. *J Am Vet Med Assoc* 2004; 225:40-41.



AAVMC Governmental Affairs Agenda 112th Congress – Second Session

- Appropriation Recommendations for FY 2013
 - USDA - **Regional Centers of Excellence**
 - **2008 Farm Bill** included establishment of new regional centers of excellence in food systems
 - “A **regional center of excellence** shall be composed of one or more colleges and universities (including land-grant institutions, schools of forestry, **schools of veterinary medicine**, or Land Grant Institutions) to focus on species specific diseases.”



Implementation of USDA's Regional Centers of Excellence

- **Although authorized in the 2008 Farm Bill, Congress has not yet provided an appropriation for this program as of FY 2012.**



Implementation of USDA's Regional Centers of Excellence

- AAVMC includes the following among the core attributes and activities for a center of excellence:
 - Ensure coordination and cost-effectiveness by **reducing duplicative efforts** regarding research, teaching, and extension
 - **Leverage available resources** by utilizing public/private partnerships among industry, higher education, and the Federal Government

Potential for industry support



Dairy Production Medicine – training future generations of dairy cattle health professionals





<http://www.vmtrc.ucdavis.edu/>