

# SLCMAD Updates and Tax Increase Overview

SLC Council  
15 October 2024





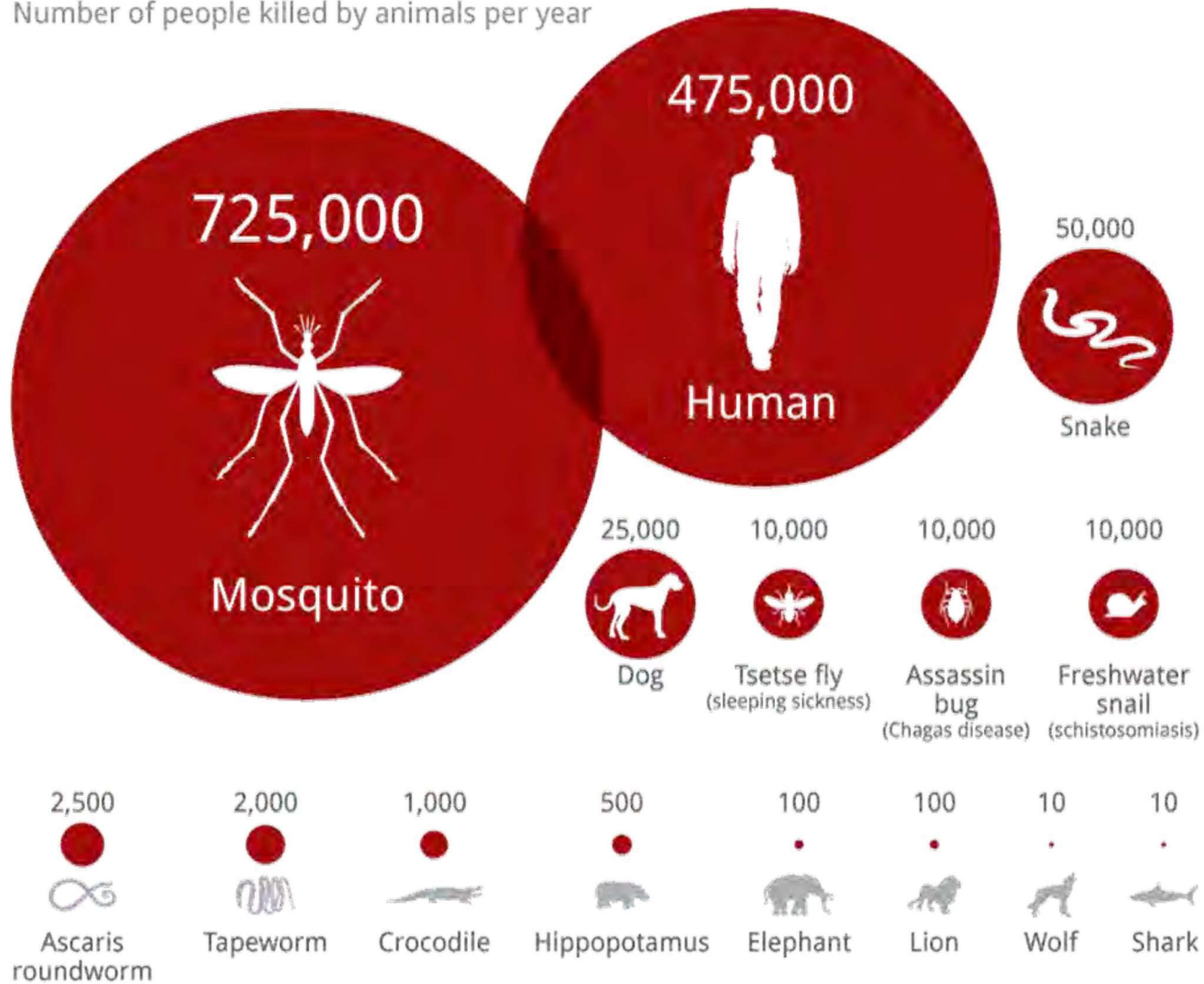
*Toxorhynchites rutilus  
septentrionalis*

A close-up photograph of two mosquitoes on human skin. The larger mosquito, *Toxorhynchites rutilus septentrionalis*, is positioned in the upper right, showing its iridescent blue and green body and long, dark legs. The smaller mosquito, *Aedes albopictus*, is in the lower left, appearing as a dark silhouette with distinct white markings on its legs. The skin's texture is clearly visible in the background.

*Aedes albopictus*

## The World's Deadliest Animals

Number of people killed by animals per year





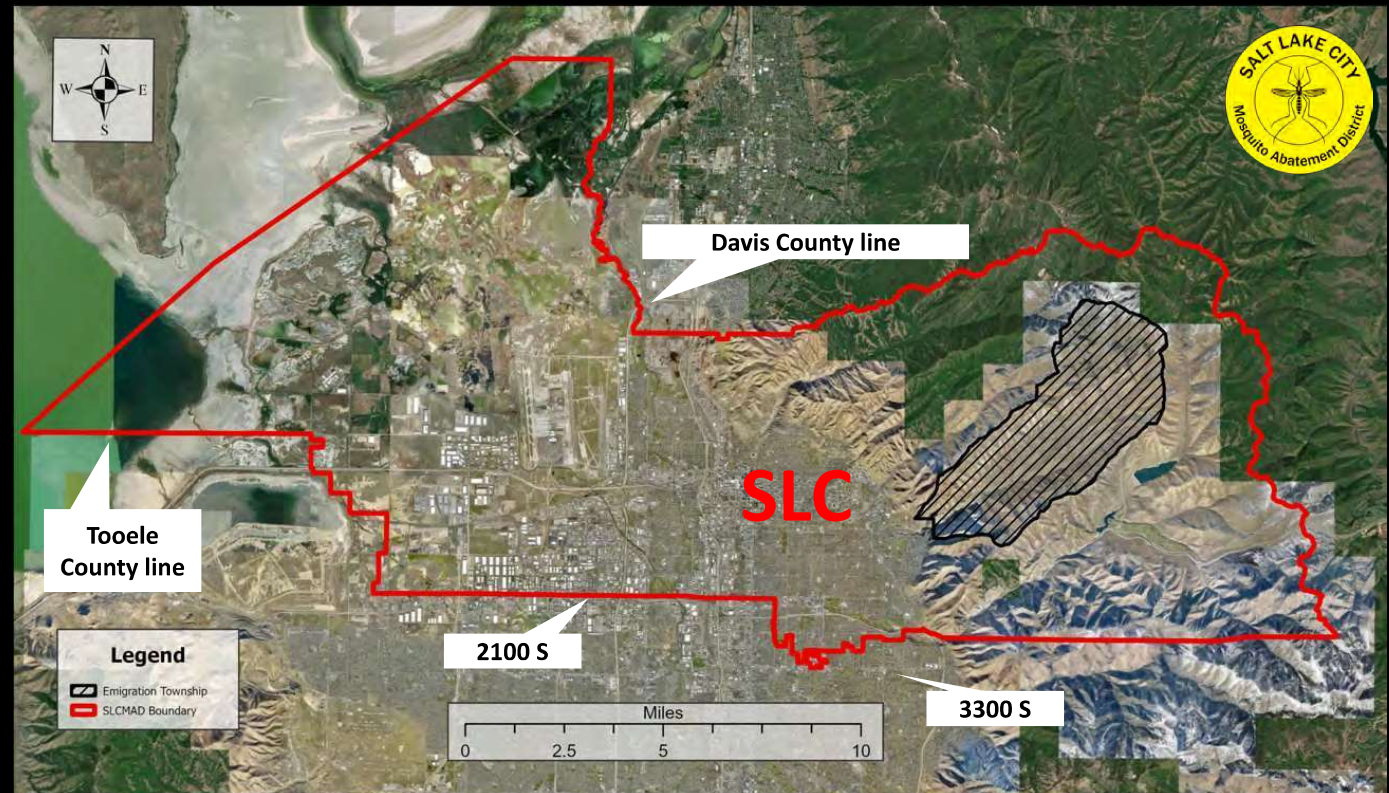
# SLCMAD

1923

Independent Tax  
Special District

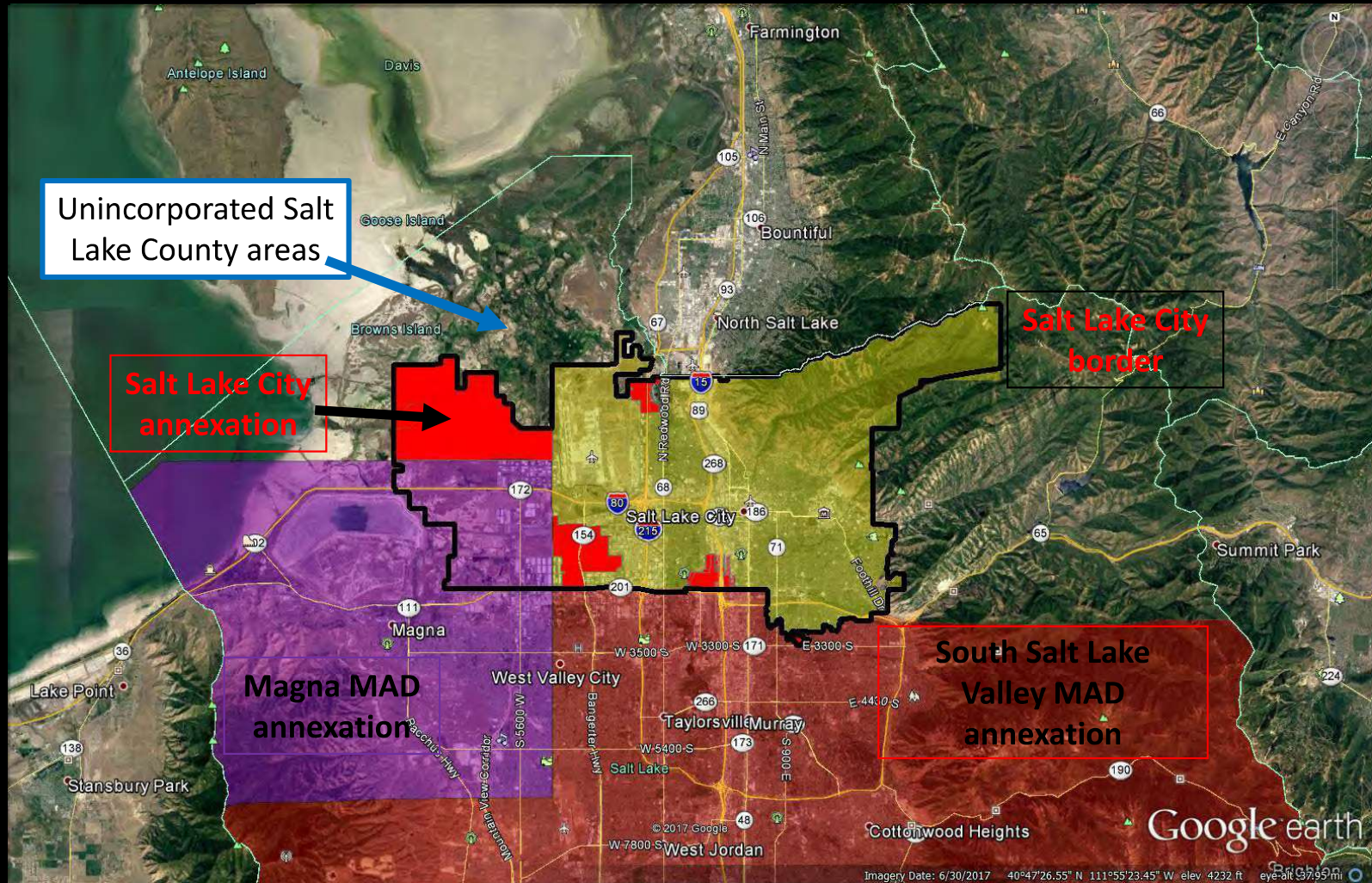
~180 miles<sup>2</sup>  
(Service Area)

~240 miles<sup>2</sup>  
(Greater Boundary)





# Annexation Updates





13 full time staff (5 PhD's)  
~50 seasonals (interns/techs)



## SLCMAD Board of Trustees



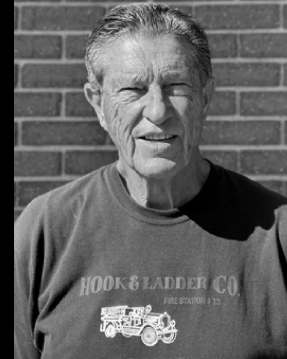
**Dr. Shireen Mooers**  
Board Chair (D6)  
Pediatrician



**Amanda Barth**  
Board Vice Chair (D7)  
Utah Rare Insect Coord.



**Luz Escamilla**  
District 1  
Utah State Senator



**Van Turner**  
District 2  
Businessman/Past Council



**Neil Vickers, PhD**  
District 6  
UoU Bio Professor

## Past Notable Board of Trustees



**Ray Uno**  
Judge



**Dr. Dagmar Vitek**  
Medical Director SLCHD



**Karen Okabe**  
Deputy Mayor SLCO



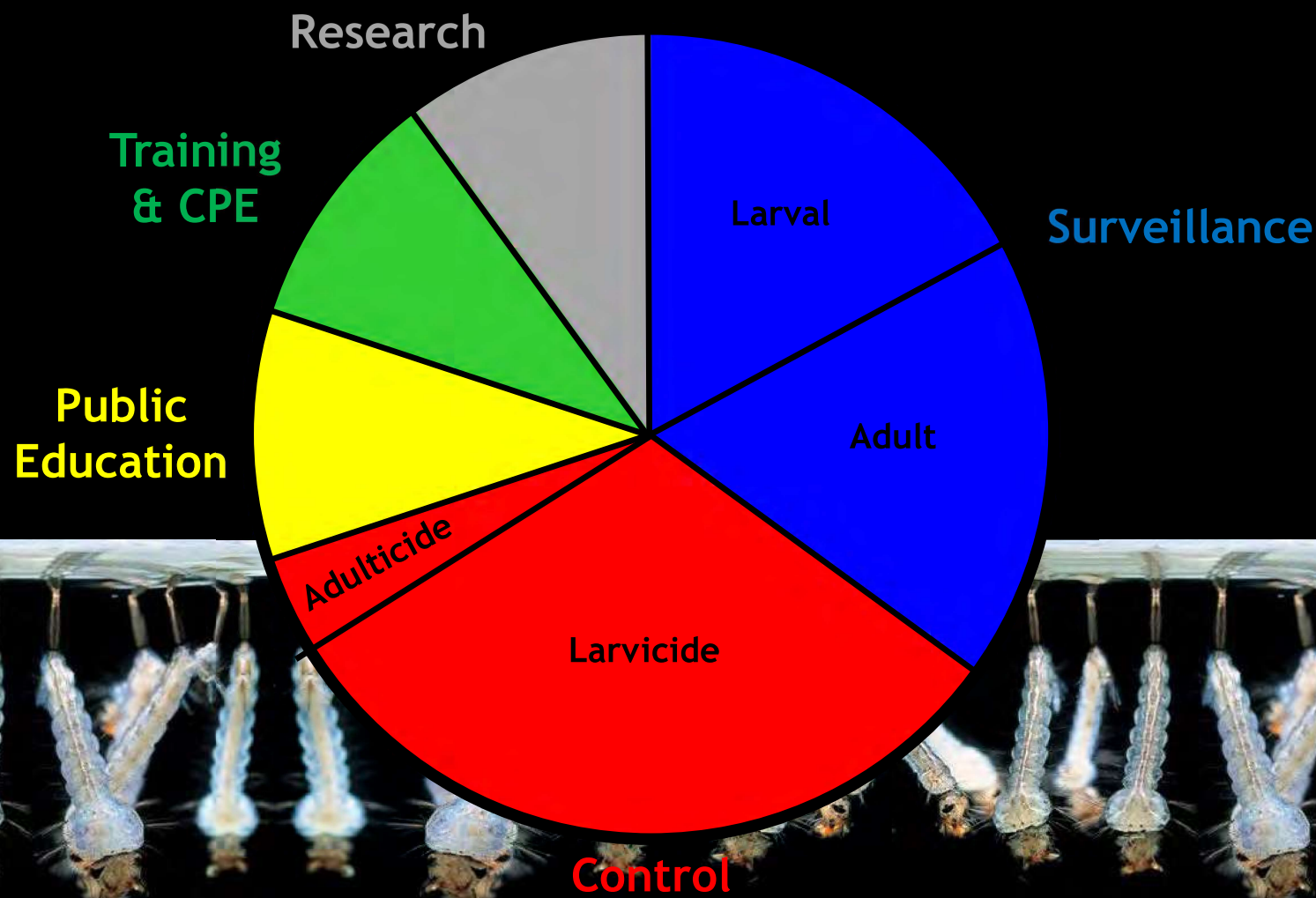
**Carlton Christensen**  
UTA, RDA, Past Council



**LaVone Liddle**  
Judge



# Integrated Mosquito Management



# Surveillance

## PLOS NEGLECTED TROPICAL DISEASES

### OPEN ACCESS

**Citation:** Bibbs GS, Reissen N, Dewsnap MA, Sorensen RB, Faraji A, White GS (2024) Do it yourself: 3D-printed miniature CDC trap for adult mosquito (Diptera: Culicidae) surveillance. *PLoS Negl Trop Dis* 18(1): e0011899. <https://doi.org/10.1371/journal.pntd.0011899>

### RESEARCH ARTICLE

## Do it yourself: 3D-printed miniature CDC trap for adult mosquito (Diptera: Culicidae) surveillance

Christopher S. Bibbs<sup>1\*</sup>, Nadja Reissen, M. Andrew Dewsnap, R. Bradley Sorensen, Ary Faraji, Gregory S. White

*Journal of the American Mosquito Control Association*, 39(4):231–235, 2023  
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## DO IT YOURSELF: A MODERNIZED GRAVID TRAP DESIGN FOR MOSQUITO SURVEILLANCE

M. ANDREW DEWSNUP, THOMAS D. WIDMER, ELLA J. BRANHAM, ARY FARAJI, GREGORY S. WHITE AND CHRISTOPHER S. BIBBS<sup>1</sup>

## scientific reports

### OPEN Infrared light sensors permit rapid recording of wingbeat frequency and bioacoustic species identification of mosquitoes

Dongmin Kim<sup>1</sup>, Terry J. DeBriere<sup>2</sup>, Satish Cherukumalli<sup>3</sup>, Gregory S. White<sup>3</sup> & Nathan D. Burkett-Cadena<sup>1,2,3</sup>

### Trap Comparison for Surveillance of the Western Tree Hole Mosquito (Diptera: Culicidae)

Luis Fernando Chaves,<sup>1\*</sup> Nadja Reissen,<sup>2</sup> Gregory S. White,<sup>2</sup> Scott Gordon,<sup>3</sup> and Ary Faraji<sup>2,4</sup>

<sup>1</sup>Instituto Costarricense de Investigación y Enseñanza en Nutrición y Salud (INCIENSA), Tres Pinos, Cartago, Apartado 4-2250, Costa Rica, <sup>2</sup>Salt Lake City Mosquito Abatement District, 2215 North 2200 West, Salt Lake City, UT 84116, <sup>3</sup>Biogents AG, Wissenschaftsstr. 27 50665 Regensburg, Germany, and <sup>4</sup>Corresponding author: e-mail: [ary@slciemad.org](mailto:ary@slciemad.org)

Subject Editor: Phyllis Wountrub

Received: 5 November 2019; Editorial decision: 29 December 2019

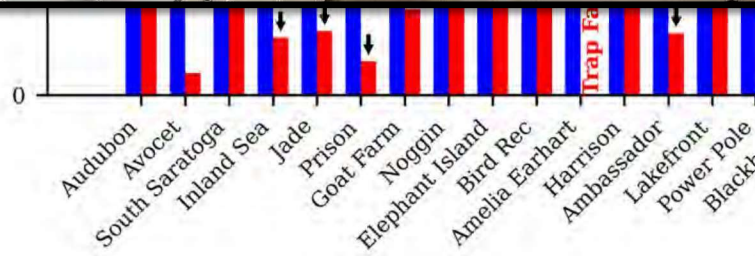
# Surveillance

CO2

14000

22 July 2024  
(Monday night)

Num Count  
3  
5,000  
10,000  
14,323





# Control - Urban

## Tree Hole Program



## Catch Basin Program



## Biological Control Program



# Control - Rural

The image is a screenshot of the Utah State Office of Education website. A large white rectangular box covers the majority of the page content. To the left of this box, the website's navigation and header are visible. The header includes the text "UtahState" and a navigation menu with "Home" and "Logan" (with a dropdown arrow). Below the header, the word "Aviation" is prominently displayed. Underneath, there is a paragraph of text that begins with "By College of Ag" and "To learn more about the Degree Informa". Further down, a button labeled "Degree Informa" is visible. Below the button, the word "Recommen" is partially visible. At the bottom left, the text "Degree Reco" is visible. A blue watermark with the text "https://onlyu.acad" is overlaid on the left side of the page. At the bottom of the page, a dark navigation bar contains the labels "CREDITS", "COURSE", and "COURSE OPTIONS". On the right side of the page, a portion of a white vehicle is visible against a cloudy sky background. A small play button icon is located at the bottom left of the white box.

UtahState

Home Logan ▾

## Aviation

By College of Ag

To learn more about the Degree Informa

degree's academic

some of these sugg

you have already m

[usu.edu/orientation](http://usu.edu/orientation)

Degree Informa

## Recommen

these courses are s

for 15-16 credits.

1. Degree Reco

Classes. If a cl

look for a p n

2. General Educ

needed to gra

Degree Reco

https://onlyu.acad

CREDITS COURSE

COURSE OPTIONS

Joel B


Clint Hoffman

# Grants

CDC Funded

2023-2028


\$1,013,794

 **COLORADO STATE UNIVERSITY** | NEWS FROM THE COLLEGE OF VETERINARY MEDICINE AND BIOMEDICAL SCIENCES

SOURCE  
Thursday, October 10

News CSU Magazines Impact Magazine CVMBS Website Calendar Suggest a Story


CSU, partners land \$8.75M for center on vector-borne diseases like West Nile virus

 **COLORADO STATE UNIVERSITY** | ROCKIES AND HIGH PLAINS VECTOR-BORNE DISEASES CENTER

ABOUT RAHP VEC TRAINING PROJECTS RESOURCES CONTACT


Investigators

Directors




**Brian Foy, Ph.D.**  
RaHP VEC Co-Director/Co-Principal Investigator  
Professor, Colorado State University

[About Dr. Foy](#)  
Brian brings extensive experience in field entomology and testing novel strategies for vector control of domestic arboviral vectors. As the program co-director, Dr. Foy is involved in all aspects of RaHP VEC.  
[Foy Lab Website](#)  
[Current Activities](#)



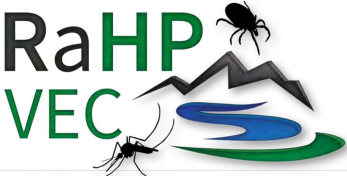
**Arj Faraji, Ph.D., BCE**  
Executive Director, Salt Lake City Mosquito Abatement District (SLCMAD)

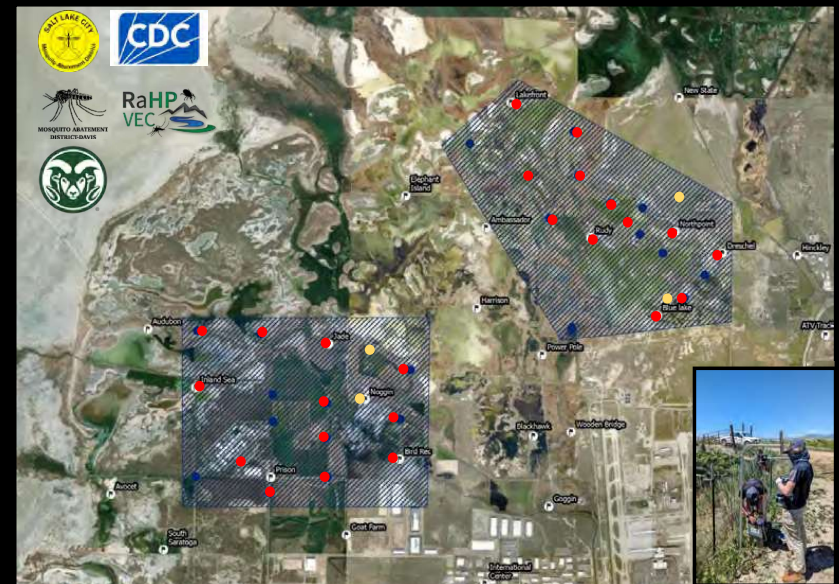
[About Dr. Faraji](#)  
Arj has over 20 years of experience in vector management, including surveillance, various forms of adult and larval control, and conducting vector training workshops. He applies this programmatic knowledge and perspective across RaHP VEC activities.  
[Current Activities](#)



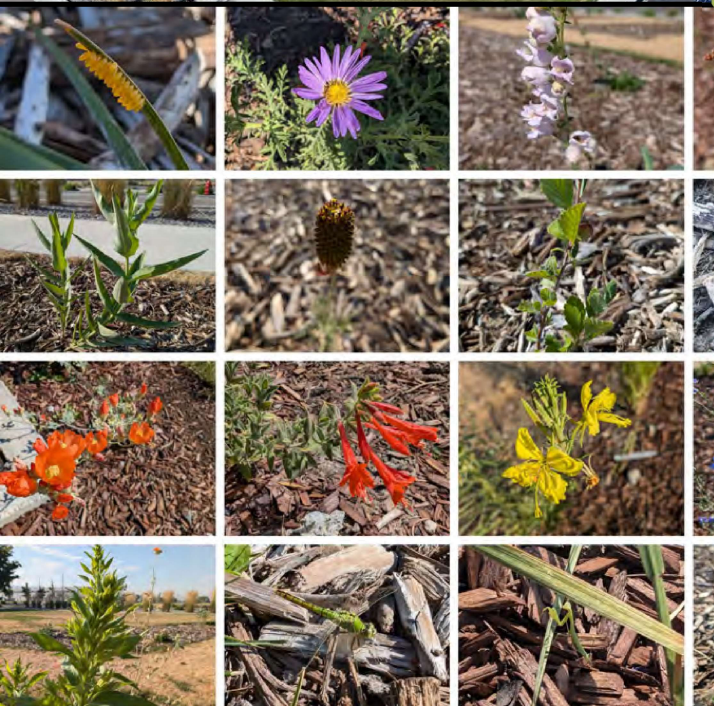
**Greg White, Ph.D.**  
Assistant Director, Salt Lake City Mosquito Abatement District (SLCMAD)

[About Dr. White](#)  
Greg has worked in the field of vector control for over 15 years. He has experience in mosquito and arbovirus surveillance, insecticide resistance management, evaluating insecticide applications, filth fly and biting midge management, and performing vector control in multiple states.  
[Current Activities](#)









Community garden: \$3,195  
Pollinator garden: 390 native plants

## Pollinator Habitat and Community Garden







North Central  
**IPM**  
Center



This project was funded in part by the USDA  
National Institute of Food and Agriculture, through  
the Western Integrated Pest Management Center.

Western  
**IPM**  
Center



UTAH DEPARTMENT  
**UDC**  
OF CORRECTIONS



## USCF Grant Project:

- Mosquito Education and Outreach program
- Least Chub fish rearing program



2023 Western IPM Center: \$26,515  
2024 Western IPM Center: \$35,823  
2024 EOJC Legislative Session: \$51,000  
2024 Regional IPM Centers: \$18,000



**Mosquito Attract and Kill Device (MAKD)**  
**\$38,400**



This project was funded in part by the USDA National Institute of Food and Agriculture, through the Western Integrated Pest Management Center.

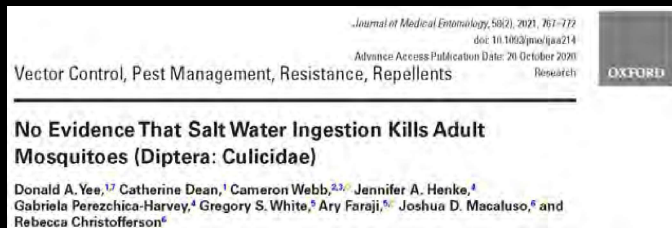
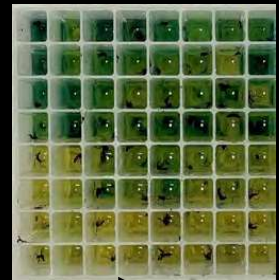


**Teton County Weed & Pest  
Wyoming**





# Research Projects



**Bennioncenter**  
THE UNIVERSITY OF UTAH



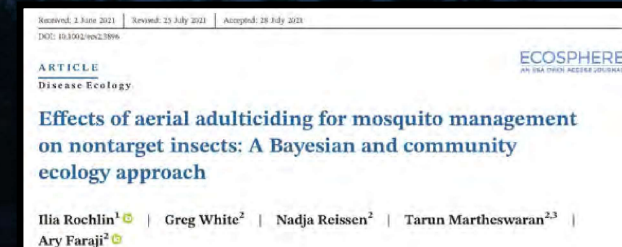
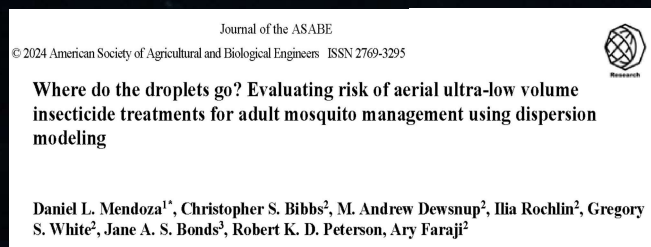
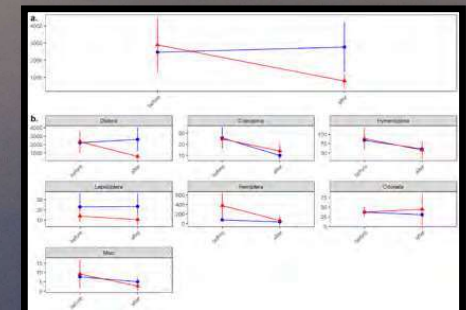
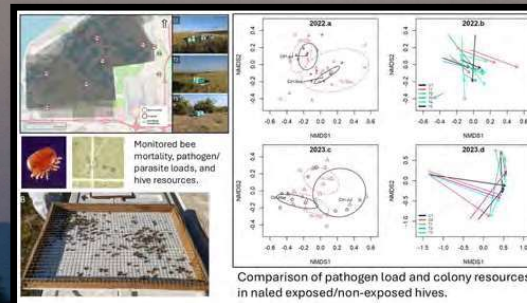
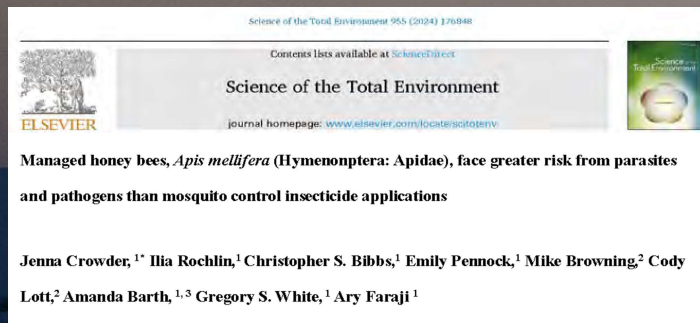
# Research Projects

Non-target impact studies

Modeling/drift/deposition



Dr. Daniel Mendoza





# Tax Increase Purpose

Consumer Price Index and Inflation

Shorter tax increase cycles & smaller %

Enhancement of aerial operations

Phase II construction



# Tax Revenue, New Growth, CPI

Year	Tax Revenue	New Growth	% New Growth	% Wasatch Front CPI	Difference
2022	\$6,621,359	\$83,355	2.23	9.6	-7.37
2023	\$6,819,257	\$197,898	2.99	3.8	-0.81
2024	\$7,029,062	\$209,805	3.08	3.8	-0.72
		Total	8.3	17.2	-8.9

2021-2023: 6.6% New Growth & 19.4% CPI (-12.8%)



# Aerial Operations Enhancement

Fixed wing operation in Ogden

Antiquated aircraft

Multiple transfer points

Helicopter increases accuracy, efficiency, and efficacy



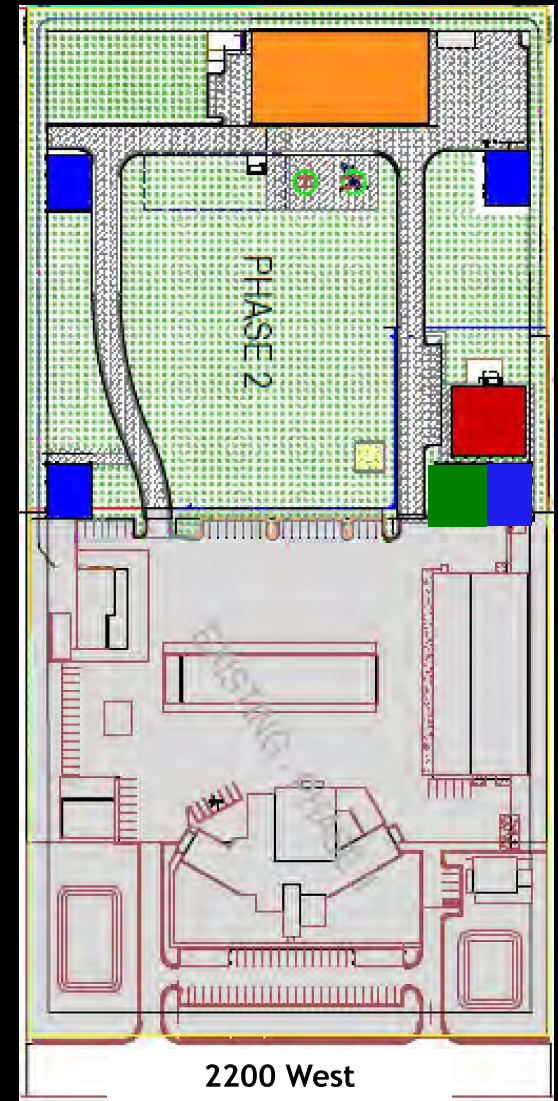
# Phase II Construction

Additional Laboratory/Insectary

4 Adult Bioassay Cages (ABC's)

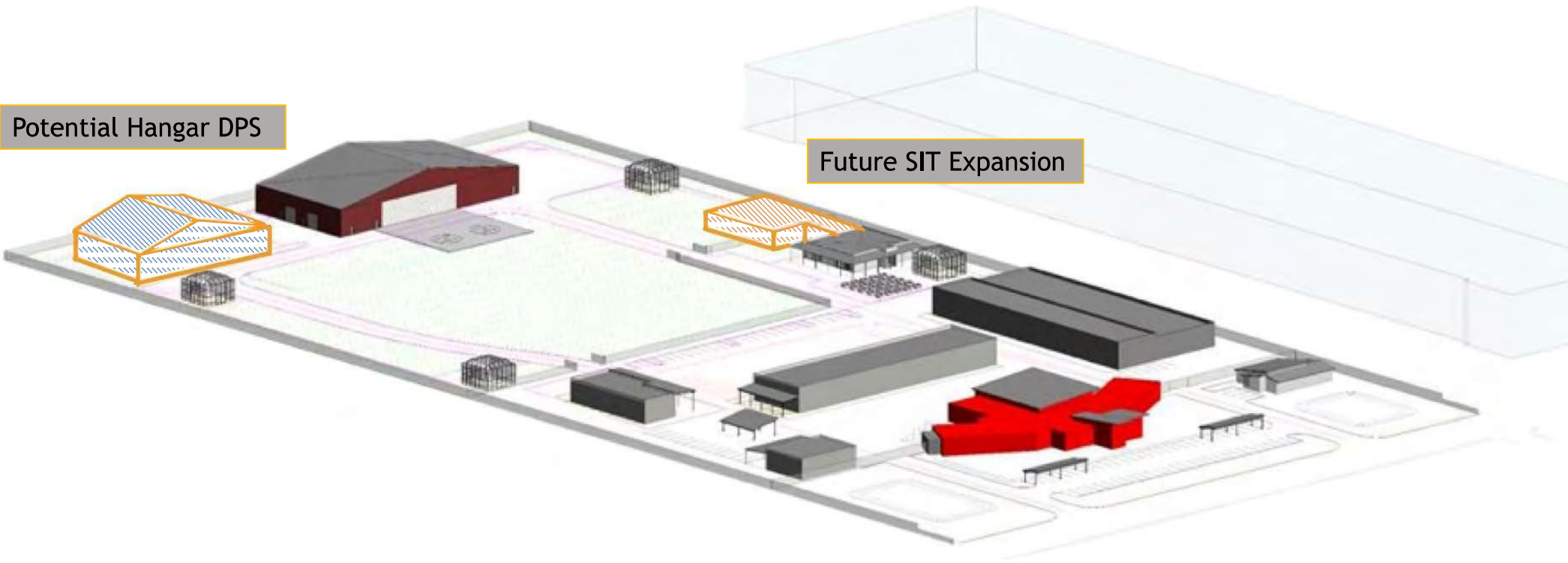
25 Larval Bioassay Vaults (LBV's)

Helicopter Hangar





# Phase II Construction



# Financial Advisor Forecasting



Salt Lake Mosquito Abatement District

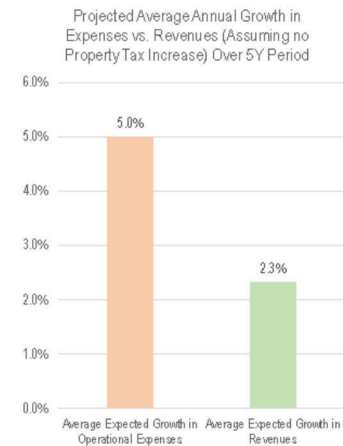
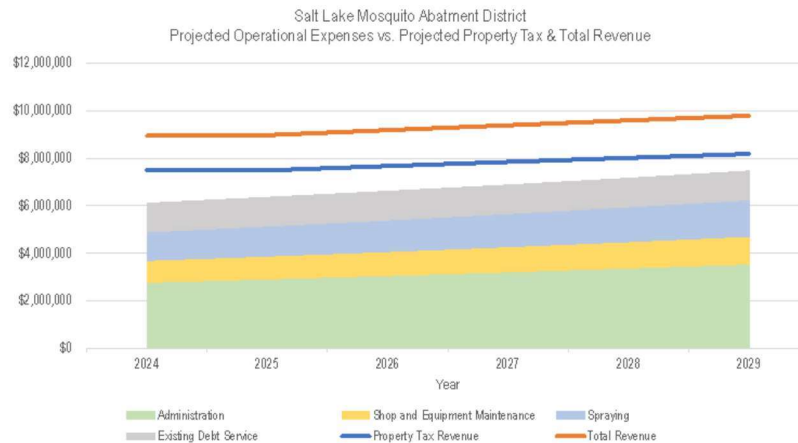
Zions Public Finance, Inc.



April 2024

## Operational Considerations

Funds are well managed, yet Salt Lake Mosquito Abatement District (SLMAD) would likely require a future property tax increase regardless of its future capital program as new growth tapers.



ZIONS PUBLIC FINANCE, INC.



# Scenario Analysis

Tools to achieve the vision.

Strong Fund Balance

Beneficial Interest  
Income Environment

Specific Debt Tools

Salt Lake Mosquito Abatement District Scenario Analysis	Scenario 1 - Hold Funds @ PTIF, Bond for Needed Amount, Hold Interest @PTIF	Scenario 2 - Expend All Funds @ PTIF, Bond for Remaining Amount	Scenario 3 - Hold Funds @ PTIF, Bond for Needed Amount, Deploy Interest Income to SLMAD Fund	Scenario 4 - Hybrid of 2 & 3	Scenario 5 - Hold Funds @PTIF, Bond for Needed Amount, Deploy Interest Income to SLMAD Fund, Tax Increase fixed at 19.5%
Amount from PTIF Expended (\$)	\$0	\$9,000,000	\$0	\$4,500,000	\$0
New Bond Amount (\$)	\$20,000,000	\$12,000,000	\$20,000,000	\$16,000,000	\$20,000,000
Projected Tax Rate Without Increase	0.0001590	0.0001590	0.0001590	0.0001590	0.0001590
Projected Tax Rate With Increase	0.0001923	0.0001789	0.0001875	0.0001829	0.0001900
Change in Levy	0.0000333	0.0000199	0.0000285	0.0000239	0.0000310
Property Tax Rate Increase (%)	20.95%	12.50%	17.90%	15.00%	19.50%
Calculated Annual Tax Impact on \$400,000 Primary Residence (\$)	\$10.29	\$7.13	\$9.15	\$8.06	\$9.75
Calculated Annual Tax Impact on \$400,000 Primary Residence (%)	29.4%	20.4%	26.2%	23.1%	26.2%
Calculated Monthly Tax Impact on \$400,000 Primary Residence (\$)	\$0.86	\$0.59	\$0.76	\$0.67	\$0.81
New Principal and Interest Expense	\$1,534,485	\$920,691	\$1,534,485	\$1,227,588	\$1,534,485
New Revenue from Property Tax Increase	\$2,058,489	\$1,425,799	\$1,830,118	\$1,612,978	\$1,949,919
Net New Revenue	\$524,004	\$505,098	\$295,633	\$385,390	\$415,434
<b>Interest Income Scenarios</b>					
Avg. Ann. Interest Income Earnings on \$9M @ PTIF Assuming Rates Unchanged, No Compounding	\$495,000	\$0	\$495,000	\$247,500	\$495,000
Avg. Ann. Interest Income Earnings on \$9M @PTIF Assuming ZPF/SLMAD Scenario, No Compounding	\$368,571	\$0	\$368,571	\$187,500	\$332,100
Avg. Ann. Interest Income Earnings on \$9M @ PTIF Assuming Fed Dots, Income Reinvested, No Compounding	\$242,143	\$0	\$242,143	\$121,071	\$242,143
Total Interest Income Earnings @ PTIF Assuming Rates Unchanged, No Compounding	\$10,395,000	\$0	\$10,395,000	\$5,197,500	\$10,395,000
Total Interest Income Earnings @ PTIF Assuming ZPF/SLMAD Scenario, No Compounding	\$7,740,000	\$0	\$7,740,000	\$3,937,500	\$7,740,000
Total Interest Income Earnings @ PTIF Assuming Fed Dots, No Compounding	\$5,085,000	\$0	\$5,085,000	\$2,542,500	\$5,085,000

Legend Recommended Scenario



ZIONS PUBLIC FINANCE, INC.

# Projected Annual Property Taxes

	Current 2024 Rate (0.000147)	~Proposed 2025 Rate (0.000176)	Price Increase
<b>\$623,900 House</b> (\$343,145 taxable value)	<b>\$50.44 year</b> (\$4.20 month)	<b>\$60.39 year</b> (\$5.03 month)	<b>\$9.95</b> (\$0.83 month)
<b>\$1,000,000 Business</b>	<b>\$147.00 year</b> (\$12.25 month)	<b>\$176.00 year</b> (\$16.67 month)	<b>\$29.00</b> (\$2.42 month)

