

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

FY 2022-23 SCOPE OF WORK

PROJECT: 15

**Project Title**

Identification and Curation of Larval and Juvenile Fish

**Bureau of Reclamation Agreement Number:**

R19AP00058

**Reclamation Agreement Term:**

1 October 2019-30 September 2023

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*Note: Recovery Program FY22-23 scopes of work are drafted in May 2021. They often are revised before final Program approval and may subsequently be revised again in response to changing Program needs. Program participants also recognize the need and allow for some flexibility in scopes of work to accommodate new information (especially in nonnative fish management projects) and changing hydrological conditions.*

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**Lead Agency:**

Larval Fish Laboratory

**Principal Investigator:**

Kevin R. Bestgen, Principal Investigator-Project Manager

Larval Fish Laboratory

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Category:

- Ongoing project
- Ongoing-revised project
- Requested new project
- Unsolicited proposal

Expected Funding Source:

- Annual funds
- Capital funds
- Other *[explain]*

**Relationship to RIPRAP:**

General Recovery Program Support Action Plan

- V. Monitor populations and habitat and conduct research to support recovery actions (research, monitoring, and data management).
- V.A. Measure and document population and habitat parameters to determine status and biological response to recovery actions.
- V.B. Conduct research to acquire needed life history information.
- V.E. Provide for long-term care, cataloging, and accessibility of preserved specimens.

## UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

### **Study Background/Rationale and Hypotheses:**

This project supports Larval Fish Laboratory (LFL) taxonomic and analytical services for specific Recovery Program projects (Task 1, Taxonomic Services). Incidental taxonomic services and consultation on larval and juvenile fish taxonomy, sampling techniques, and collection handling are also provided, as needed and time allows, to Upper Colorado River Basin (UCRB) researchers.

The project also provides ongoing curation (maintenance and management) of the growing Upper Colorado River Basin (UCRB) portion of the LFL Collection. LFL currently maintains over 4,500,000 UCRB specimens in about 145,000 taxon-specific lots as voucher for Recovery Program and earlier and related UCRB investigations. These collections are an invaluable, long-term, historical resource for future reference and research. Some collections are over a quarter century old, dating back to 1976. New collections are cataloged and added to the LFL Collection as they are received or processed by LFL. As the holdings of the LFL Collection become better known, we expect use of UCRB collections will increase substantially, both within and outside the Recovery Program.

As part of the curatorial effort, we continue to pursue arrangements to help ensure collection permanency. In part through the efforts of the principal investigator, preliminary plans continue to develop for administratively and physically consolidating most of the university's Natural History Research Collections (including the LFL Collection) to provide better long-term recognition, support, and facilities for those collections as a functional unit of Colorado State University.

Accurate fish identifications and data production gained from specimen collections is an important part of Recovery Program efforts. Information produced from specimen identification and curation has supported Recovery Program activities since its inception.

### **Study Goals, Objectives, End Product(s):**

Goal: To provide taxonomic, curatorial, and statistical analysis services for various Recovery Program projects.

Objectives: Support Recovery Program researchers and our own laboratory staff by identifying, processing, cataloging, and curating preserved fish, or analyzing otoliths, in specifically designated sets of collections submitted to LFL under this project (Task 1), currently collections from:

- Project 22F, LFL—samples to assess Yampa and Middle-Green Colorado pikeminnow and razorback sucker larval abundance and samples collected in the White River.
- Project 158, Utah Division of Wildlife Resources and U. S. Fish and Wildlife Service, Vernal, Utah offices—samples associated with middle Green River baseflow monitoring and presence of early life stages of Colorado pikeminnow (Task 1b) and ISMP samples collected at the same time. We are not presently receiving funds for this project because the former analog, the backwater study, was suspended. In its place, Utah Division of Wildlife Resources is collecting large numbers of samples with many specimens as part of the base flow monitoring study, which first occurred in 2021. We will attempt as many samples as possible with the funding available, and may subsample some collections, to increase efficiency and save funding.
- Project 160, Utah Division of Wildlife Resources, Moab, Utah—samples associated with increased light-trap sampling in the lower Green River for age-0 razorback sucker (Task 1c).
- Project 161, Larval Fish Laboratory—Analyze otoliths of age-0 smallmouth bass from the Colorado River (Task 1d). Request no funding be sent in the near future, sample analysis not needed.

## UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

- Project 163, USFWS, Grand Junction, Colorado—Samples associated with Gunnison River fish community monitoring. This will include any small chub work from samples collected in Black Rocks.
- Project FR-164, USFWS, Vernal, Utah—Samples associated with Green River Larval Trigger Study Plan monitoring in floodplain wetlands in the Green River Basin.
- Project FR-165, UDWR, Vernal, Utah—Samples associated with Green River Larval Trigger Study Plan monitoring in Stewart Lake floodplain wetland.
- Project 127, 131, 163, and Yampa River pike abundance statistical analysis.

-Provide, as needed and time allows, incidental taxonomic services and consultation on taxonomy, collecting techniques, and collection handling to other Recovery Program projects and researchers (Task 1).

-Catalog and incorporate in the LFL Collection other preserved UCRB specimens deposited by Recovery Program projects and researchers (Task 2).

-Continue curation (maintenance and management) of all cataloged UCRB specimens in the LFL Collection (Task 2).

End Products—

Annual project reports.

Collection or analysis data for Project 22F, 158, 160, 163, FR-164, and FR-165 researchers.

Other determinations of specimen identity and data.

Cataloging and incorporation of taxonomic services project collections and other deposited UCRB fish collections in the LFL Collection.

Continued maintenance and management of, and access to, the cataloged collection of preserved fish which serve as voucher for Recovery Program investigations and provide a long-term resource for future Recovery Program and other public reference and research.

### **Study Area:**

The Recovery Program collections identified, processed, and curated by LFL were or will be collected from cool to warm-water reaches of the UCRB, generally exclusive of the San Juan River subbasin.

### **Study Methods/Approach:**

Taxonomic Services—We will identify preserved specimens (mostly larvae) or analyze otoliths collected and submitted by other Recovery Program projects specified above and process, catalog, and curate the fish collections as part of the LFL Collection. Limited incidental taxonomic services and related consultation for other Recovery Program projects and researchers also will be provided as needed and time allows.

Ongoing Curation—The LFL Collection will continue to serve as the depository for larval and other small fish from preserved Recovery Program collections. Methods for receiving, accessioning, cataloging, maintaining, and managing use of these preserved specimens are provided in our draft "Larval Fish Laboratory Collection Policies and Procedures Manual" (Appendix II, Snyder 1996), as adapted for our SPECIFY Collection Management System. We will respond to internal and external requests for collection information and use of specimens; Recovery Program approval will be required for any destructive use or transfer of endangered or rare species. We will continue our effort to ensure collection permanency, in part through planned consolidation of Colorado State University Natural History Research Collections.

## UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

### Task Description, Deliverables and Schedule :

Task 1: Taxonomic Services—As soon as possible after receipt, collections for Recovery Program projects listed below will be identified and otherwise processed, and as time allows, other incidentally requested taxonomic services and consultations.

1a: Collection identification, processing, and curation for Project 22F, includes final identification of Yampa, middle Green, and White River light trap and drift net samples.

1b: Collection identification, processing, and curation for Project 158, UDWR and USFWS backwater sampling in support of GREAT study. Original project suspended, no budget requested.

1c: Collection identification, processing, and curation for Project 160, lower Green River light trap and seine samples.

1d: Otolith analyses of age-0 smallmouth bass for Project 161. Study data collection not needed, no budget requested.

1e: Collection identification, processing, and curation for Project 163, Gunnison River monitoring, USFWS, Grand Junction.

1f: Collection identification, processing, and curation for Project FR-164, Larval Trigger Study Plan samples, USFWS, Vernal, Utah.

1g: Collection identification, processing, and curation for Project FR-165, Larval Trigger Study Plan samples, Stewart Lake, UDWR, Vernal, Utah.

1h: Statistical analysis assistance of data collected in the conduct of Projects 127, 131, and 163.

Funding was also received for a Yampa River northern pike abundance estimate in 2019, which may also occur in the future, but perhaps not in 2022-2023.

Task 2: Ongoing Curation—As needed throughout each fiscal year.

### Budget Summary:

FY		LFL
2022	\$	255,266.93
2023	\$	255,531.30
2024	\$	261,012.89
2025	\$	266,186.66
2026	\$	271,463.94
total	\$	1,309,462

### Reviewers:

NA

### References:

Snyder, D. E. 1996. Preserved larval and small-fish collections of the Upper Colorado River Basin: maintenance and cataloging of a valuable historical database. Final Report of the Larval Fish Laboratory, Colorado State University, to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, U.S. Fish and Wildlife Service, Denver, Colorado. (24 April 1996).

**SUMMARY OF PROPOSED COSTS**

<b>Name of Servicing Agency:</b>	Colorado State University
<b>Project Name:</b>	Identification and curation of fishes, Project 15.

	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5		TOTAL
	10/1/2021		10/1/2022		10/2/2023		10/1/2024		10/1/2025		
	Through		Through		Through		Through		Through		
Enter the BEGINNING dates for each year ----->	9/30/2022		10/1/2023		9/30/2024		9/30/2025		9/30/2026		
Enter the ENDING dates for each year ----->											
<b>DIRECT LABOR AND FRINGE BENEFIT COSTS:</b>	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5		TOTAL
Direct Labor - Hourly	\$	166,090.05	\$	166,090.05	\$	169,411.85	\$	172,800.09	\$	176,256.09	\$ 850,648.14
Fringe Benefits - Hourly	\$	45,508.67	\$	45,508.67	\$	46,927.08	\$	47,865.63	\$	48,822.94	\$ 234,633.00
Subtotal of Direct Labor & Fringe Benefits:	\$	211,598.73	\$	211,598.73	\$	216,338.94	\$	220,665.72	\$	225,079.03	\$ 1,085,281.14
<b>OTHER DIRECT COSTS:</b>	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5		TOTAL
Materials and Supplies	\$	3,747.22	\$	3,747.22	\$	3,822.19	\$	3,898.62	\$	3,976.61	\$ 19,191.86
Travel Costs	\$	1,902.50	\$	2,127.50	\$	1,977.50	\$	1,977.50	\$	1,977.50	\$ 9,962.50
Equipment	\$	-	\$	-	\$	-	\$	-	\$	-	\$ -
Contractors	\$	-	\$	-	\$	-	\$	-	\$	-	\$ -
Subtotal of Other Direct Costs:	\$	5,649.72	\$	5,874.72	\$	5,799.69	\$	5,876.12	\$	5,954.11	\$ 29,154.36
<b>INDIRECT/OVERHEAD COSTS:</b>	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5		TOTAL
Subtotal of Labor and Other Direct Costs:	\$	217,248.45	\$	217,473.45	\$	222,138.63	\$	226,541.84	\$	231,033.14	
Total dollars exempt from indirect/overhead base:											
<Enter Description of Indirect/OH Cost #1>	17.50%	\$ 38,018.48	17.50%	\$ 38,057.85	17.50%	\$ 38,874.26	17.50%	\$ 39,644.82	17.50%	\$ 40,430.80	\$ 195,026.21
Total dollars exempt from indirect/overhead base:	\$	-	\$	-	\$	-	\$	-	\$	-	
<Enter Description of Indirect/OH Cost #2>			0.00%		0.00%		0.00%		0.00%		\$ -
Subtotal of Indirect/Overhead Costs:	\$	38,018.48	\$	38,057.85	\$	38,874.26	\$	39,644.82	\$	40,430.80	\$ 195,026.21
<b>GRAND TOTAL:</b>	\$	255,266.93	\$	255,531.30	\$	261,012.89	\$	266,186.66	\$	271,463.94	\$ 1,309,461.71

**SUMMARY OF DIRECT LABOR & FRINGE BENEFITS**

Enter Escalation Rates ----->	Yr 2 Escalation Rate	0.00%
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	Task # or Description	Position Title	Current Hourly Rate	YEAR 1					YEAR 2				
				10/1/2021		Through	9/30/2022		10/1/2022		Through	10/1/2023	
				# of Hours	Hourly Rate	Salary Cost	Fringe Rate	Fringe Cost	# of Hours	Hourly Rate	Salary Cost	Fringe Rate	Fringe Cost
1	1a	Principal investigator	\$ 52.79	220.0	\$ 52.79	\$ 11,613.80	27.40%	\$ 3,182.18	220.0	\$ 52.79	\$ 11,613.80	27.40%	\$ 3,182.18
2	1a	Senior technician	\$ 27.94	225.0	\$ 27.94	\$ 6,286.50	27.40%	\$ 1,722.50	225.0	\$ 27.94	\$ 6,286.50	27.40%	\$ 1,722.50
3	1a	Technician	\$ 15.00	285.0	\$ 15.00	\$ 4,275.00	27.40%	\$ 1,171.35	285.0	\$ 15.00	\$ 4,275.00	27.40%	\$ 1,171.35
4	1c	Principal investigator	\$ 52.79	240.0	\$ 52.79	\$ 12,669.60	27.40%	\$ 3,471.47	240.0	\$ 52.79	\$ 12,669.60	27.40%	\$ 3,471.47
5	1c	Senior technician	\$ 27.94	360.0	\$ 27.94	\$ 10,058.40	27.40%	\$ 2,756.00	360.0	\$ 27.94	\$ 10,058.40	27.40%	\$ 2,756.00
6	1c	Technician	\$ 15.00	280.0	\$ 15.00	\$ 4,200.00	27.40%	\$ 1,150.80	280.0	\$ 15.00	\$ 4,200.00	27.40%	\$ 1,150.80
7	1e	Principal investigator	\$ 52.79	265.0	\$ 52.79	\$ 13,989.35	27.40%	\$ 3,833.08	265.0	\$ 52.79	\$ 13,989.35	27.40%	\$ 3,833.08
8	1e	Senior technician	\$ 27.94	880.0	\$ 27.94	\$ 24,587.20	27.40%	\$ 6,736.89	880.0	\$ 27.94	\$ 24,587.20	27.40%	\$ 6,736.89
9	1e	Technician	\$ 15.00	1,255.0	\$ 15.00	\$ 18,825.00	27.40%	\$ 5,158.05	1,255.0	\$ 15.00	\$ 18,825.00	27.40%	\$ 5,158.05
10	1f	Principal investigator	\$ 52.79	180.0	\$ 52.79	\$ 9,502.20	27.40%	\$ 2,603.60	180.0	\$ 52.79	\$ 9,502.20	27.40%	\$ 2,603.60
11	1f	Senior technician	\$ 27.94	205.0	\$ 27.94	\$ 5,727.70	27.40%	\$ 1,569.39	205.0	\$ 27.94	\$ 5,727.70	27.40%	\$ 1,569.39
12	1f	Technician	\$ 15.00	210.0	\$ 15.00	\$ 3,150.00	27.40%	\$ 863.10	210.0	\$ 15.00	\$ 3,150.00	27.40%	\$ 863.10
13	1g	Principal investigator	\$ 52.79	190.0	\$ 52.79	\$ 10,030.10	27.40%	\$ 2,748.25	190.0	\$ 52.79	\$ 10,030.10	27.40%	\$ 2,748.25
14	1g	Senior technician	\$ 27.94	240.0	\$ 27.94	\$ 6,705.60	27.40%	\$ 1,837.33	240.0	\$ 27.94	\$ 6,705.60	27.40%	\$ 1,837.33
15	1g	Technician	\$ 15.00	210.0	\$ 15.00	\$ 3,150.00	27.40%	\$ 863.10	210.0	\$ 15.00	\$ 3,150.00	27.40%	\$ 863.10
16	1h	Principal investigator	\$ 52.79	96.0	\$ 52.79	\$ 5,067.84	27.40%	\$ 1,388.59	96.0	\$ 52.79	\$ 5,067.84	27.40%	\$ 1,388.59
17	1h	Technician	\$ 27.94	16.6	\$ 27.94	\$ 464.36	27.40%	\$ 127.24	16.6	\$ 27.94	\$ 464.36	27.40%	\$ 127.24
18	2	Principal investigator	\$ 52.79	160.0	\$ 52.79	\$ 8,446.40	27.40%	\$ 2,314.31	160.0	\$ 52.79	\$ 8,446.40	27.40%	\$ 2,314.31
19	2	Senior technician	\$ 27.94	150.0	\$ 27.94	\$ 4,191.00	27.40%	\$ 1,148.33	150.0	\$ 27.94	\$ 4,191.00	27.40%	\$ 1,148.33
20	2	Technician	\$ 15.00	210.0	\$ 15.00	\$ 3,150.00	27.40%	\$ 863.10	210.0	\$ 15.00	\$ 3,150.00	27.40%	\$ 863.10
21			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
22			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
23			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
24			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
25			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
26			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
27			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
28			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
29			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
30			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
31			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
				<b>5,877.62</b>		<b>\$ 166,090.05</b>		<b>\$ 45,508.67</b>	<b>5,877.62</b>		<b>\$ 166,090.05</b>		<b>\$ 45,508.67</b>

**SUMMARY OF DIRECT LABOR & FRINGE BENEFITS**

Yr 3 Escalation Rate	2.00%
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Yr 4 Escalation Rate	2.00%
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	Task # or Description	Position Title	Current Hourly Rate	YEAR 3					YEAR 4				
				10/2/2023		Through	9/30/2024		10/1/2024		Through	9/30/2025	
				# of Hours	Hourly Rate	Salary Cost	Fringe Rate	Fringe Cost	# of Hours	Hourly Rate	Salary Cost	Fringe Rate	Fringe Cost
1	1a	Principal investigator	\$ 52.79	220.0	\$ 53.85	\$ 11,846.08	27.70%	\$ 3,281.36	220.0	\$ 54.92	\$ 12,083.00	27.70%	\$ 3,346.99
2	1a	Senior technician	\$ 27.94	225.0	\$ 28.50	\$ 6,412.23	27.70%	\$ 1,776.19	225.0	\$ 29.07	\$ 6,540.47	27.70%	\$ 1,811.71
3	1a	Technician	\$ 15.00	285.0	\$ 15.30	\$ 4,360.50	27.70%	\$ 1,207.86	285.0	\$ 15.61	\$ 4,447.71	27.70%	\$ 1,232.02
4	1c	Principal investigator	\$ 52.79	240.0	\$ 53.85	\$ 12,922.99	27.70%	\$ 3,579.67	240.0	\$ 54.92	\$ 13,181.45	27.70%	\$ 3,651.26
5	1c	Senior technician	\$ 27.94	360.0	\$ 28.50	\$ 10,259.57	27.70%	\$ 2,841.90	360.0	\$ 29.07	\$ 10,464.76	27.70%	\$ 2,898.74
6	1c	Technician	\$ 15.00	280.0	\$ 15.30	\$ 4,284.00	27.70%	\$ 1,186.67	280.0	\$ 15.61	\$ 4,369.68	27.70%	\$ 1,210.40
7	1e	Principal investigator	\$ 52.79	265.0	\$ 53.85	\$ 14,269.14	27.70%	\$ 3,952.55	265.0	\$ 54.92	\$ 14,554.52	27.70%	\$ 4,031.60
8	1e	Senior technician	\$ 27.94	880.0	\$ 28.50	\$ 25,078.94	27.70%	\$ 6,946.87	880.0	\$ 29.07	\$ 25,580.52	27.70%	\$ 7,085.80
9	1e	Technician	\$ 15.00	1,255.0	\$ 15.30	\$ 19,201.50	27.70%	\$ 5,318.82	1,255.0	\$ 15.61	\$ 19,585.53	27.70%	\$ 5,425.19
10	1f	Principal investigator	\$ 52.79	180.0	\$ 53.85	\$ 9,692.24	27.70%	\$ 2,684.75	180.0	\$ 54.92	\$ 9,886.09	27.70%	\$ 2,738.45
11	1f	Senior technician	\$ 27.94	205.0	\$ 28.50	\$ 5,842.25	27.70%	\$ 1,618.30	205.0	\$ 29.07	\$ 5,959.10	27.70%	\$ 1,650.67
12	1f	Technician	\$ 15.00	210.0	\$ 15.30	\$ 3,213.00	27.70%	\$ 890.00	210.0	\$ 15.61	\$ 3,277.26	27.70%	\$ 907.80
13	1g	Principal investigator	\$ 52.79	190.0	\$ 53.85	\$ 10,230.70	27.70%	\$ 2,833.90	190.0	\$ 54.92	\$ 10,435.32	27.70%	\$ 2,890.58
14	1g	Senior technician	\$ 27.94	240.0	\$ 28.50	\$ 6,839.71	27.70%	\$ 1,894.60	240.0	\$ 29.07	\$ 6,976.51	27.70%	\$ 1,932.49
15	1g	Technician	\$ 15.00	210.0	\$ 15.30	\$ 3,213.00	27.70%	\$ 890.00	210.0	\$ 15.61	\$ 3,277.26	27.70%	\$ 907.80
16	1h	Principal investigator	\$ 52.79	96.0	\$ 53.85	\$ 5,169.20	27.70%	\$ 1,431.87	96.0	\$ 54.92	\$ 5,272.58	27.70%	\$ 1,460.50
17	1h	Technician	\$ 27.94	16.6	\$ 28.50	\$ 473.65	27.70%	\$ 131.20	16.6	\$ 29.07	\$ 483.12	27.70%	\$ 133.83
18	2	Principal investigator	\$ 52.79	160.0	\$ 53.85	\$ 8,615.33	27.70%	\$ 2,386.45	160.0	\$ 54.92	\$ 8,787.63	27.70%	\$ 2,434.17
19	2	Senior technician	\$ 27.94	150.0	\$ 28.50	\$ 4,274.82	27.70%	\$ 1,184.13	150.0	\$ 29.07	\$ 4,360.32	27.70%	\$ 1,207.81
20	2	Technician	\$ 15.00	210.0	\$ 15.30	\$ 3,213.00	27.70%	\$ 890.00	210.0	\$ 15.61	\$ 3,277.26	27.70%	\$ 907.80
21			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
22			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
23			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
24			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
25			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
26			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
27			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
28			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
29			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
30			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
31			\$ -	-	\$ -	\$ -	0.00%	\$ -	-	\$ -	\$ -	0.00%	\$ -
				<b>5,877.62</b>		<b>\$ 169,411.85</b>		<b>\$ 46,927.08</b>	<b>5,877.62</b>		<b>\$ 172,800.09</b>		<b>\$ 47,865.63</b>

**SUMMARY OF DIRECT LABOR & FRINGE BENEFITS**

Yr 5 Escalation Rate	2.00%
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				YEAR 5					Total Salary Cost	Total Fringe Cost	Total Labor Cost
				10/1/2025		Through	9/30/2026				
Task # or Description	Position Title	Current Hourly Rate	# of Hours	Hourly Rate	Salary Cost	Fringe Rate	Fringe Cost				
1	1a	Principal investigator	\$ 52.79	220.0	\$ 56.02	\$ 12,324.66	27.70%	\$ 3,413.93	\$ 59,481.33	\$ 16,406.65	\$ 75,887.98
2	1a	Senior technician	\$ 27.94	225.0	\$ 29.65	\$ 6,671.28	27.70%	\$ 1,847.95	\$ 32,196.99	\$ 8,880.85	\$ 41,077.84
3	1a	Technician	\$ 15.00	285.0	\$ 15.92	\$ 4,536.66	27.70%	\$ 1,256.66	\$ 21,894.87	\$ 6,039.23	\$ 27,934.10
4	1c	Principal investigator	\$ 52.79	240.0	\$ 56.02	\$ 13,445.08	27.70%	\$ 3,724.29	\$ 64,888.72	\$ 17,898.16	\$ 82,786.88
5	1c	Senior technician	\$ 27.94	360.0	\$ 29.65	\$ 10,674.05	27.70%	\$ 2,956.71	\$ 51,515.18	\$ 14,209.35	\$ 65,724.54
6	1c	Technician	\$ 15.00	280.0	\$ 15.92	\$ 4,457.07	27.70%	\$ 1,234.61	\$ 21,510.75	\$ 5,933.28	\$ 27,444.03
7	1e	Principal investigator	\$ 52.79	265.0	\$ 56.02	\$ 14,845.61	27.70%	\$ 4,112.23	\$ 71,647.97	\$ 19,762.55	\$ 91,410.52
8	1e	Senior technician	\$ 27.94	880.0	\$ 29.65	\$ 26,092.13	27.70%	\$ 7,227.52	\$ 125,926.00	\$ 34,733.98	\$ 160,659.98
9	1e	Technician	\$ 15.00	1,255.0	\$ 15.92	\$ 19,977.24	27.70%	\$ 5,533.70	\$ 96,414.27	\$ 26,593.80	\$ 123,008.07
10	1f	Principal investigator	\$ 52.79	180.0	\$ 56.02	\$ 10,083.81	27.70%	\$ 2,793.22	\$ 48,666.54	\$ 13,423.62	\$ 62,090.16
11	1f	Senior technician	\$ 27.94	205.0	\$ 29.65	\$ 6,078.28	27.70%	\$ 1,683.68	\$ 29,335.03	\$ 8,091.44	\$ 37,426.47
12	1f	Technician	\$ 15.00	210.0	\$ 15.92	\$ 3,342.81	27.70%	\$ 925.96	\$ 16,133.07	\$ 4,449.96	\$ 20,583.02
13	1g	Principal investigator	\$ 52.79	190.0	\$ 56.02	\$ 10,644.02	27.70%	\$ 2,948.39	\$ 51,370.24	\$ 14,169.38	\$ 65,539.62
14	1g	Senior technician	\$ 27.94	240.0	\$ 29.65	\$ 7,116.04	27.70%	\$ 1,971.14	\$ 34,343.45	\$ 9,472.90	\$ 43,816.36
15	1g	Technician	\$ 15.00	210.0	\$ 15.92	\$ 3,342.81	27.70%	\$ 925.96	\$ 16,133.07	\$ 4,449.96	\$ 20,583.02
16	1h	Principal investigator	\$ 52.79	96.0	\$ 56.02	\$ 5,378.03	27.70%	\$ 1,489.71	\$ 25,955.49	\$ 7,159.26	\$ 33,114.75
17	1h	Technician	\$ 27.94	16.6	\$ 29.65	\$ 492.79	27.70%	\$ 136.50	\$ 2,378.28	\$ 656.00	\$ 3,034.28
18	2	Principal investigator	\$ 52.79	160.0	\$ 56.02	\$ 8,963.39	27.70%	\$ 2,482.86	\$ 43,259.15	\$ 11,932.11	\$ 55,191.26
19	2	Senior technician	\$ 27.94	150.0	\$ 29.65	\$ 4,447.52	27.70%	\$ 1,231.96	\$ 21,464.66	\$ 5,920.56	\$ 27,385.22
20	2	Technician	\$ 15.00	210.0	\$ 15.92	\$ 3,342.81	27.70%	\$ 925.96	\$ 16,133.07	\$ 4,449.96	\$ 20,583.02
21			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
22			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
23			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
24			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
25			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
26			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
27			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
28			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
29			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
30			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
31			\$ -	-	\$ -	\$ -	0.00%	\$ -	\$ -	\$ -	\$ -
				<b>5,877.62</b>		<b>\$ 176,256.09</b>		<b>\$ 48,822.94</b>	<b>\$ 850,648.14</b>	<b>\$ 234,633.00</b>	<b>\$ 1,085,281.14</b>



# SUMMARY OF MATERIALS AND SUPPLIES

## SUMMARY OF MATERIALS, SUPPLIES, AND SERVICES

Yr 2 Escalation Rate	0.00%
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	Task # or Description	Item Description	Rationale for Proposed Cost	Year 1			Year 2		
				Unit Price	Unit Quantity	Subtotal	Unit Price	Unit Quantity	Subtotal
1	1a	jars and vials	0.5	\$ 85.11	10	\$ 851.06	\$ 85.11	10	\$ 851.06
2	1a	preservative	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 9.36	10	\$ 93.62	\$ 9.36	10	\$ 93.62
3	1c	jars and vials	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 85.11	3	\$ 255.32	\$ 85.11	3	\$ 255.32
4	1c	preservative	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 9.36	8	\$ 74.89	\$ 9.36	8	\$ 74.89
5	1e	jars and vials	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 85.11	16	\$ 1,361.70	\$ 85.11	16	\$ 1,361.70
6	1e	preservative	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 9.36	18	\$ 168.51	\$ 9.36	18	\$ 168.51
7	1f	jars and vials	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 85.11	2	\$ 170.21	\$ 85.11	2	\$ 170.21
8	1f	preservative	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 9.36	6	\$ 56.17	\$ 9.36	6	\$ 56.17
9	1g	jars and vials	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 85.11	2	\$ 170.21	\$ 85.11	2	\$ 170.21
10	1g	preservative	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 9.36	6	\$ 56.17	\$ 9.36	6	\$ 56.17
11	2	jars and vials	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 85.11	3	\$ 255.32	\$ 85.11	3	\$ 255.32
12	2	preservative	Based on previous experience & SOWs funded through BOR contract R14AP00001 and RP1900058	\$ 9.36	25	\$ 234.04	\$ 9.36	25	\$ 234.04
13				\$ -	0	\$ -	\$ -	0	\$ -
14				\$ -	0	\$ -	\$ -	0	\$ -
15				\$ -	0	\$ -	\$ -	0	\$ -
16				\$ -	0	\$ -	\$ -	0	\$ -
17				\$ -	0	\$ -	\$ -	0	\$ -
<b>TOTAL:</b>						<b>\$ 3,747.22</b>			<b>\$ 3,747.22</b>

# SUMMARY OF MATERIALS AND SUPPLIES

## SUMMARY OF MATERIALS, SUPPLIES, AND SERVICES

Yr 3 Escalation Rate	2.00%	Yr 4 Escalation Rate	2.00%	Yr 5 Escalation Rate	2.00%
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	Task # or Description	Item Description	Year 3			Year 4			Year 5			
			Unit Price	Unit Quantity	Subtotal	Unit Price	Unit Quantity	Subtotal	Unit Price	Unit Quantity	Subtotal	
1	1a	jars and vials	\$ 86.81	10	\$ 868.09	\$ 88.54	10	\$ 885.45	\$ 90.32	10	\$ 903.16	
2	1a	preservative	\$ 9.55	10	\$ 95.49	\$ 9.74	10	\$ 97.40	\$ 9.93	10	\$ 99.35	
3	1c	jars and vials	\$ 86.81	3	\$ 260.43	\$ 88.54	3	\$ 265.63	\$ 90.32	3	\$ 270.95	
4	1c	preservative	\$ 9.55	8	\$ 76.39	\$ 9.74	8	\$ 77.92	\$ 9.93	8	\$ 79.48	
5	1e	jars and vials	\$ 86.81	16	\$ 1,388.94	\$ 88.54	16	\$ 1,416.71	\$ 90.32	16	\$ 1,445.05	
6	1e	preservative	\$ 9.55	18	\$ 171.88	\$ 9.74	18	\$ 175.32	\$ 9.93	18	\$ 178.82	
7	1f	jars and vials	\$ 86.81	2	\$ 173.62	\$ 88.54	2	\$ 177.09	\$ 90.32	2	\$ 180.63	
8	1f	preservative	\$ 9.55	6	\$ 57.29	\$ 9.74	6	\$ 58.44	\$ 9.93	6	\$ 59.61	
9	1g	jars and vials	\$ 86.81	2	\$ 173.62	\$ 88.54	2	\$ 177.09	\$ 90.32	2	\$ 180.63	
10	1g	preservative	\$ 9.55	6	\$ 57.29	\$ 9.74	6	\$ 58.44	\$ 9.93	6	\$ 59.61	
11	2	jars and vials	\$ 86.81	3	\$ 260.43	\$ 88.54	3	\$ 265.63	\$ 90.32	3	\$ 270.95	
12	2	preservative	\$ 9.55	25	\$ 238.72	\$ 9.74	25	\$ 243.50	\$ 9.93	25	\$ 248.37	
13			\$ -	0	\$ -	\$ -	0	\$ -	\$ -	0	\$ -	
14			\$ -	0	\$ -	\$ -	0	\$ -	\$ -	0	\$ -	
15			\$ -	0	\$ -	\$ -	0	\$ -	\$ -	0	\$ -	
16			\$ -	0	\$ -	\$ -	0	\$ -	\$ -	0	\$ -	
17			\$ -	0	\$ -	\$ -	0	\$ -	\$ -	0	\$ -	
					<b>\$ 3,822.19</b>				<b>\$ 3,898.62</b>			

# SUMMARY OF MATERIALS AND SUPPLIES

## SUMMARY OF MATERIALS, SUPPLIES AND SERVICES

	<b>Task # or Description</b>	<b>Item Description</b>	<b>TOTAL</b>
<b>1</b>	1a	jars and vials	\$ 4,358.82
<b>2</b>	1a	preservative	\$ 479.48
<b>3</b>	1c	jars and vials	\$ 1,307.65
<b>4</b>	1c	preservative	\$ 383.57
<b>5</b>	1e	jars and vials	\$ 6,974.10
<b>6</b>	1e	preservative	\$ 863.04
<b>7</b>	1f	jars and vials	\$ 871.76
<b>8</b>	1f	preservative	\$ 287.68
<b>9</b>	1g	jars and vials	\$ 871.76
<b>10</b>	1g	preservative	\$ 287.68
<b>11</b>	2	jars and vials	\$ 1,307.65
<b>12</b>	2	preservative	\$ 1,198.67
<b>13</b>			\$ -
<b>14</b>			\$ -
<b>15</b>			\$ -
<b>16</b>			\$ -
<b>17</b>			\$ -
			<b>\$ 19,191.86</b>