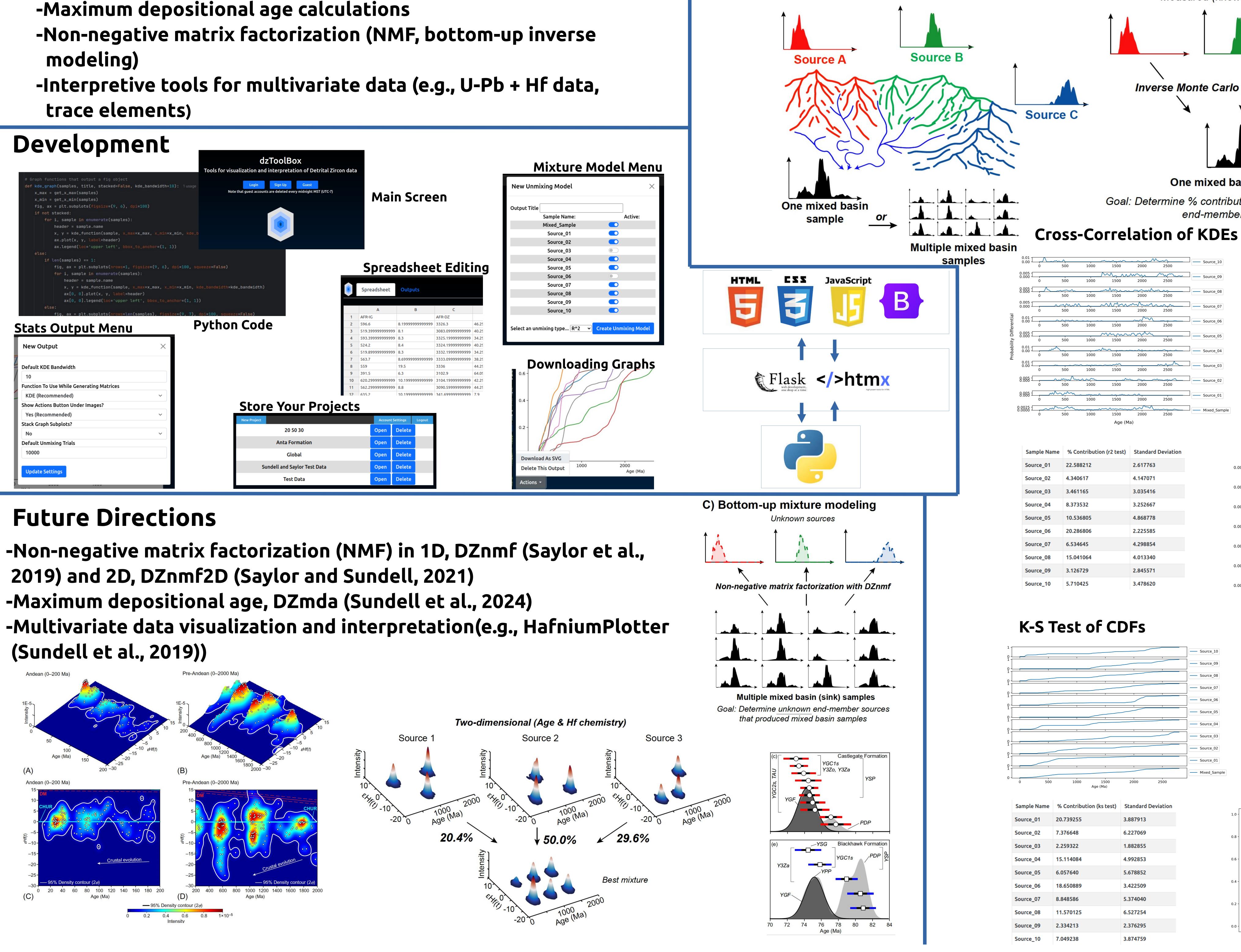
Ryan Nielsen^{1*}, Kurt Sundell¹, Joel Saylor²

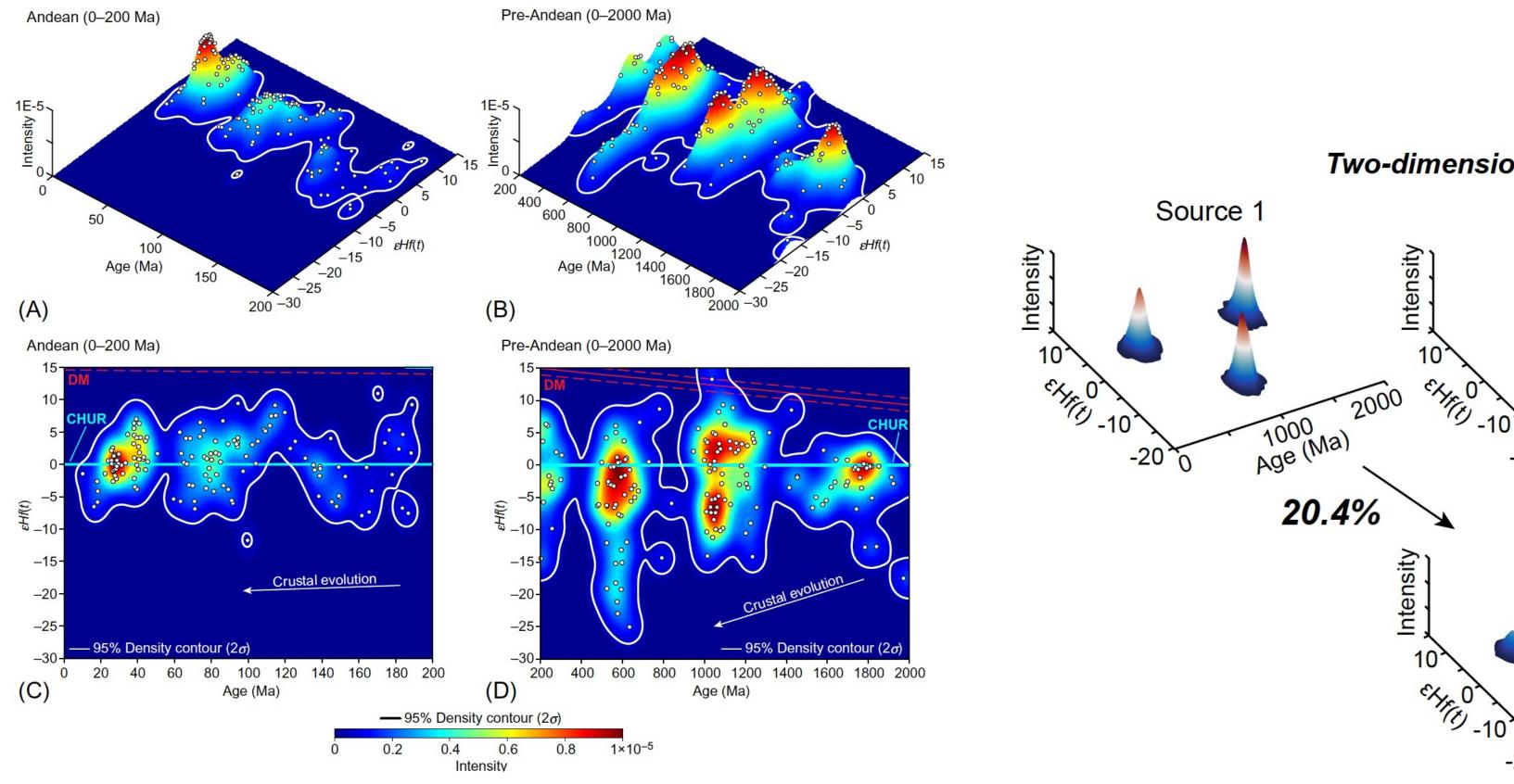
Overview

-Detrital zircon (DZ) geochronology ever increasing in popularity -Analytical tools have been developed for DZ data; however, there is no web-based software suite that includes both data visualization and interpretive tools for DZ geochronology -DZtoolbox is a web app that provides free access to DZ analysis tools -Current capabilities include:

- -Quantitative comparison for U-Pb age distributions (similarity, likeness, Kolmogorov-Smirnov (KS) test, Kuiper test, and Cross-correlation)
- -Multidimensional scaling (MDS)
- -Forward (top-down) sediment mixture modeling
- -The application design is expandable, with future plans to include -Maximum depositional age calculations
 - modeling)
 - trace elements)



2019) and 2D, DZnmf2D (Saylor and Sundell, 2021)



DZtoolbox.com, a web app for quantitative detrital geochronology analysis

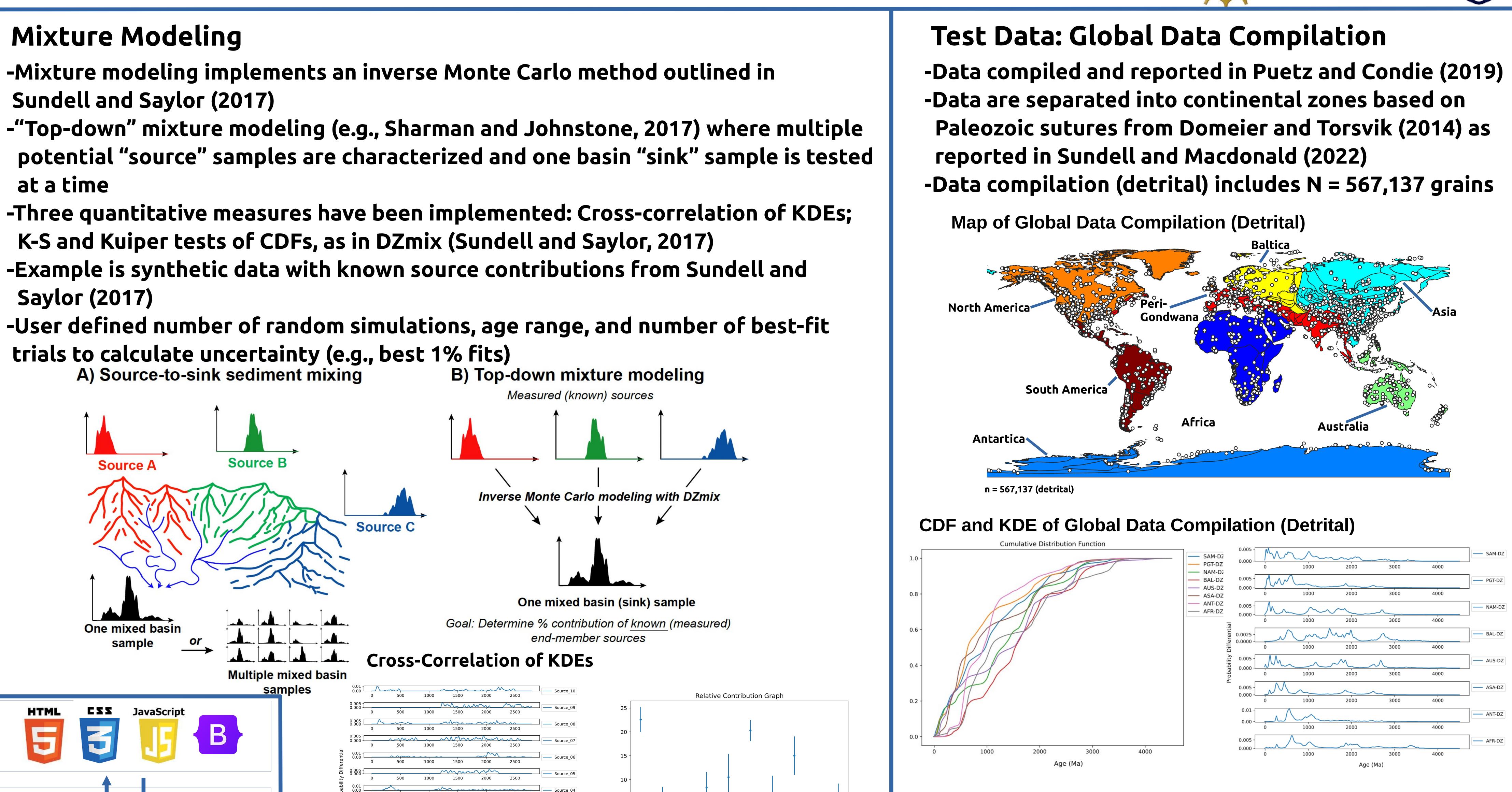
¹Idaho State University

²Univerity of British Columbia

*nielrya4@isu.edu

New Unm	ixing Model		×
utput Title			
-	Sample Name:	Active	:
	Mixed_Sample		
	Source_01		
	Source_02		
	Source_03		
	Source_04		
	Source_05		
	Source_06		
	Source_07		
	Source_08		
	Source_09		
	Source_10		
elect an unr	nixing type R^2	✓ Create Unmixing N	Nodel

- Mixture Modeling
- Sundell and Saylor (2017)
- at a time
- K-S and Kuiper tests of CDFs, as in DZmix (Sundell and Saylor, 2017)
- Saylor (2017)
- trials to calculate uncertainty (e.g., best 1% fits) A) Source-to-sink sediment mixing



SAM-DZ 1.00

PGT-DZ 0.6

NAM-DZ 0.37

BAL-DZ 0.1

AUS-DZ 0.24

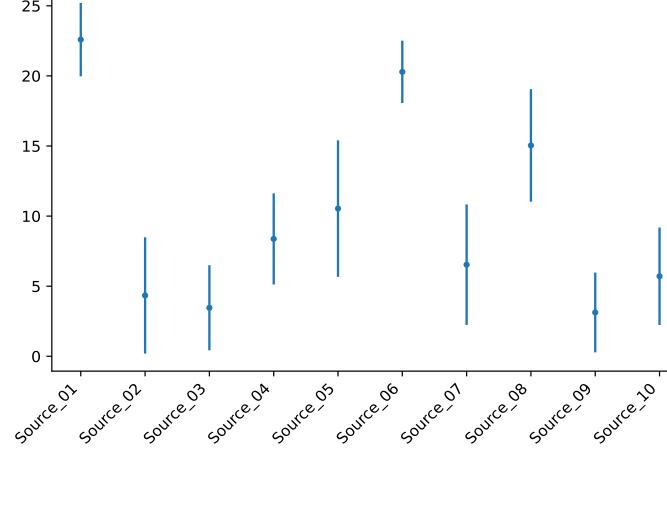
ASA-DZ 0.2

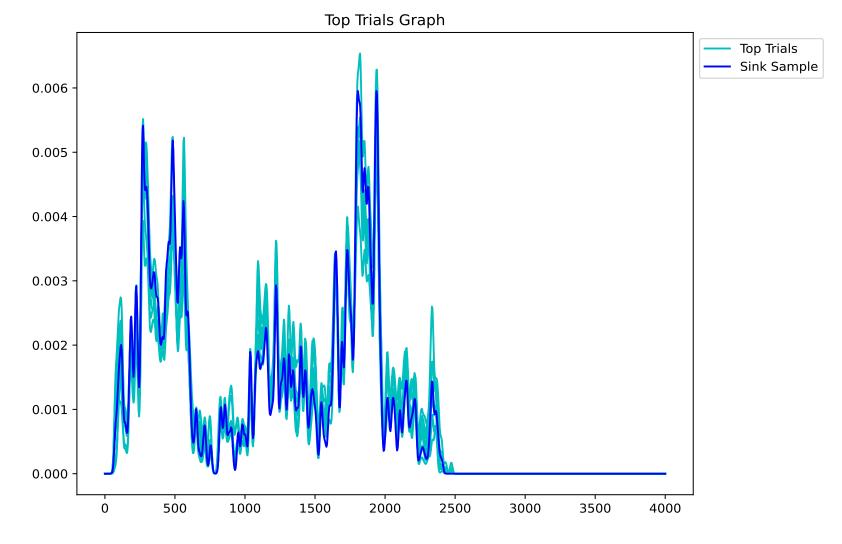
ANT-DZ 0.39

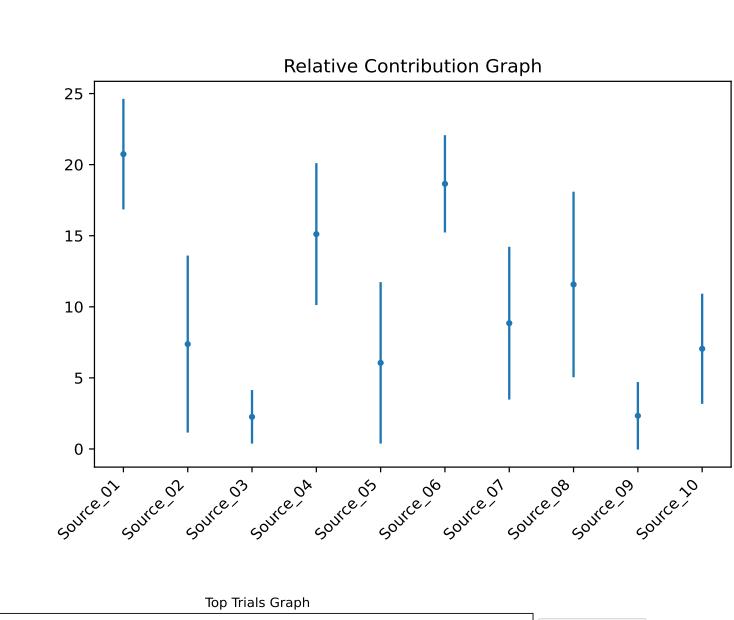
AFR-DZ 0.26

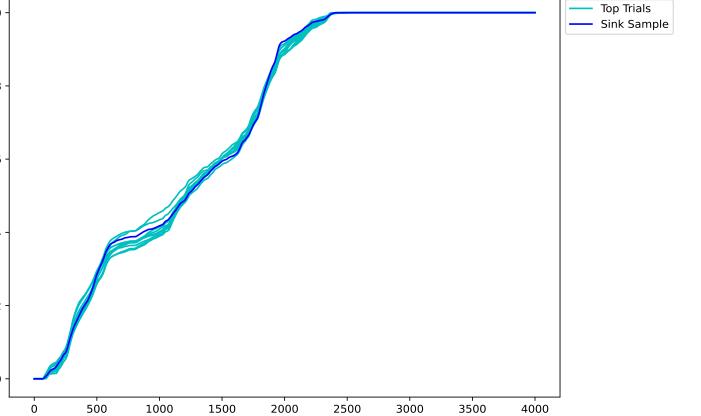
References

e Name	% Contribution (r2 test)	Standard Deviation
_01	22.588212	2.617763
_02	4.340617	4.147071
_03	3.461165	3.035416
_04	8.373532	3.252667
_05	10.536805	4.868778
_06	20.286806	2.225585
_07	6.534645	4.298854
_08	15.041064	4.013340
_09	3.126729	2.845571
_10	5.710425	3.478620









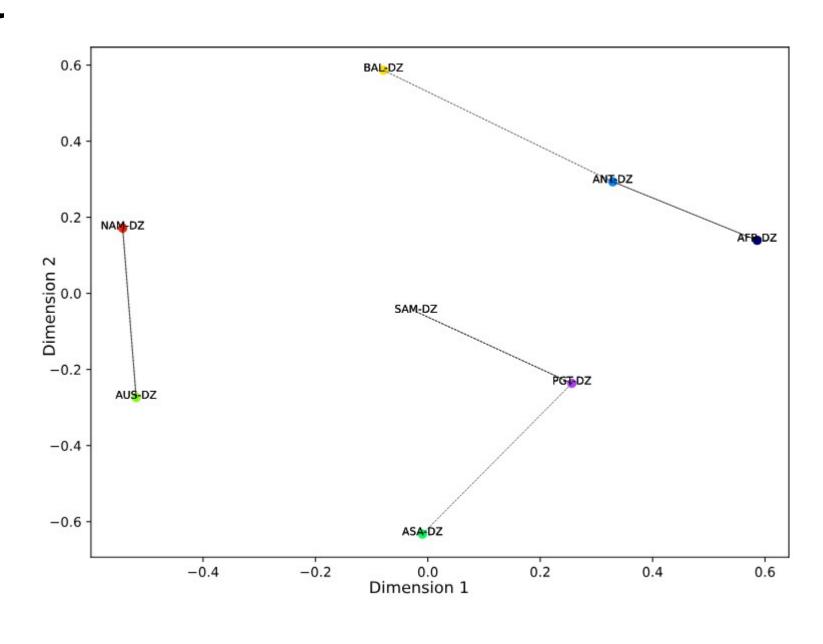


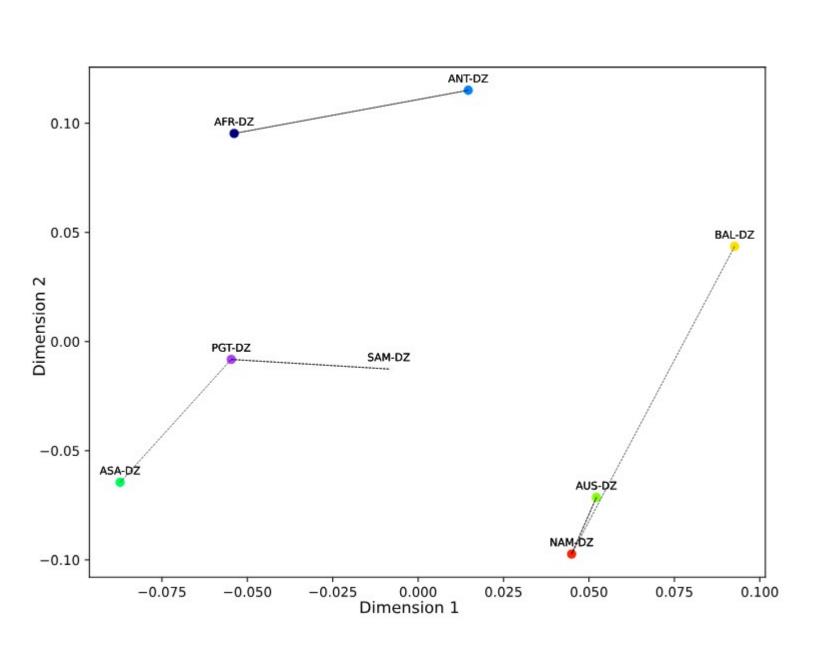
Cross-Correlation Matrix and MDS Plot

M-DZ	PGT-DZ	NAM-DZ	BAL-DZ	AUS-DZ	ASA-DZ	ANT-DZ	AFR-DZ
0	0.60	0.37	0.19	0.24	0.22	0.39	0.26
0	1.00	0.17	0.16	0.20	0.36	0.41	0.36
7	0.17	1.00	0.20	0.39	0.08	0.07	0.02
9	0.16	0.20	1.00	0.13	0.04	0.33	0.22
4	0.20	0.39	0.13	1.00	0.28	0.06	0.02
2	0.36	0.08	0.04	0.28	1.00	0.08	0.06
9	0.41	0.07	0.33	0.06	0.08	1.00	0.48
6	0.36	0.02	0.22	0.02	0.06	0.48	1.00

Similarity Matrix and MDS Plot

	SAM-DZ	PGT-DZ	NAM-DZ	BAL-DZ	AUS-DZ	ASA-DZ	ANT-DZ	AFR-DZ
SAM-DZ	1.00	0.95	0.92	0.86	0.90	0.88	0.87	0.89
PGT-DZ	0.95	1.00	0.87	0.83	0.88	0.93	0.88	0.88
NAM-DZ	0.92	0.87	1.00	0.88	0.93	0.84	0.79	0.79
BAL-DZ	0.86	0.83	0.88	1.00	0.86	0.80	0.87	0.87
AUS-DZ	0.90	0.88	0.93	0.86	1.00	0.89	0.79	0.80
ASA-DZ	0.88	0.93	0.84	0.80	0.89	1.00	0.81	0.83
ANT-DZ	0.87	0.88	0.79	0.87	0.79	0.81	1.00	0.90
AFR-DZ	0.89	0.88	0.79	0.87	0.80	0.83	0.90	1.00





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