

# JESSICA L. BLACK

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## EDUCATION

<b>University of Colorado</b>	<b><i>PhD Geological Sciences</i></b>	<b>Boulder, CO</b>
August 2008	Dissertation: Investigating Holocene climate change in Iceland using diatoms as a proxy for a fluctuating Holocene ice cap margin in glacial lake Hvítárvatn. Thesis advisor: Dr. Gifford H. Miller.	
<b>University of Maine</b>	<b><i>MS Quaternary and Climate Studies</i></b>	<b>Orono, ME</b>
May 2001	Thesis: Can a Little Ice Age signal be found in the Southern Alps of New Zealand? Thesis advisor: Dr. George H. Denton (National Academy of Sciences).	
<b>Wellesley College</b>	<b><i>BA Geology</i></b>	<b>Wellesley, MA</b>
December 1998	Awarded First Year Academic Distinction and Howard Hughes Minority Scholarship for Undergraduate Research. Research Advisor: Dr. Mary Allen. Geology Advisor: Dr. Margaret D. Thompson.	
<b>University of St Andrews</b>	<b><i>BS in Geography (physical emphasis)</i></b>	<b>St Andrews, Scotland</b>
May 1998	Senior Thesis: Geographic and climatological analysis of four glaciers in the North Cascades National Park, Washington, USA. Thesis Advisors: Dr. Colin K. Ballantyne, Dr. Jack Jarvis, Jon Riedel (NOCA).	

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## ACADEMIC POSITIONS

<b>July 2016 – Present</b>	<b>Director, Center for Indigenous Health, Culture &amp; the Environment at Heritage University</b>	<b>Toppenish, WA</b>
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**Mission:** The Center for Indigenous Health, Culture & the Environment at Heritage University supports sustained community-based research and development, building regional and global partnerships to empower indigenous peoples.

<b>July 2021 – Present</b>	<b>Professor of Environmental Science &amp; Studies</b>	<b>Toppenish, WA</b>
<i>Science Department, College of Arts and Sciences, Heritage University</i>		

Course development and instruction for undergraduate level classes, advising Environmental Science and Studies (ESS) majors, grant writing, community partnership development, STEM outreach.

Classes Taught:	PHSC 121/L	Principles of Geology/Lab	3/1 credits
	PHSC 321/L	Environmental Geology/ Lab	3/1 credits
	ENSC 101/L	Introduction to Environmental Science/Lab	3/1 credits
	ENSC 102/L	Introduction to Environmental Science II/Lab	3/1 credits
	ENSC 365/L	People of the Big River Field Class/Lab	3/1 credits
	ENSC 440/L	Environmental Issues and Ethics	3 credits
	ENSC 485	K-12 Environmental Education Outreach	1 credit

<b>July 2019 – 2022</b>	<b>Chair, Natural Science Department</b>	<b>Toppenish, WA</b>
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Responsible for all duties of Department Chair to support overall mission of HU. Revolving chair, 3yr term

**Oct 2018 – June 2019      Interim Chair, Science Department      Toppenish, WA**

Responsible for all duties of Department Chair to support overall mission of HU.

**July 2015 – June 2021      Associate Professor of Environmental Science & Studies      Toppenish, WA**  
*Science Department, College of Arts and Sciences, Heritage University*

Course development and instruction for undergraduate level classes, advising Environmental Science and Studies (ESS) majors, grant writing, community partnership development, STEM outreach.

**July 2013 – June 2016      Interim Co-Director, Center for Native Health      Toppenish, WA**  
**& Culture at Heritage University**

**Outreach:** Direct STEM related environmental programs for high school students in White Swan High School and Yakama Nation Tribal School: EnvironMentors and Wild Horse Project.

- 2013 - 2019 brought 24 White Swan High School students to present their research posters at the EnvironMentors National Fairs in Washington, D.C.

**Scholarship:** Publications developed on Integrating Traditional Ecological Knowledge in High School STEM classrooms.

**Grant and Partnership Development:** Develop partnerships and grants with inland Pacific NW Indian Tribes. New partnerships with Nez Perce, Umatilla, Warm Springs, Spokane, Colville Tribes.

**July 2012 – June 2015      Assistant Professor      Toppenish, WA**  
*Science Department, College of Arts and Sciences, Heritage University*

Course development and instruction for undergraduate level classes, advising Environmental Science and Studies (ESS) majors, grant writing, community partnership development, STEM outreach.

**January – June 2012      Adjunct Professor      Toppenish, WA**  
*Science Department, College of Arts and Sciences, Heritage University*

Course development and instruction for undergraduate level classes, advising Environmental Science and Studies (ESS) majors, grant writing, community partnership development, STEM outreach. Taught 12 credits.

Classes Taught: PHSC 121	Principles of Geology/Lab	3/1 credits
ENSC 305	General Ecology/Lab	3/1 credits
BIOL 110	General Biology I/Lab	3/1 credits

**July 2011 – Dec. 2011      Adjunct Professor and Postdoctoral Researcher      St. Petersburg, FL**  
*Department of Environmental Science, Policy & Geography, University of South Florida (USFSP)*

**Teaching:** Course development and instruction for a combination undergraduate and graduate level class. Department Chair: Dr. Henry Alegria.

- EVR4930/6934 - **Pollution of Lakes and Rivers – a Paleoenvironmental Approach**, Graduate and Undergraduate

**Research:** Using diatom analysis to develop the numerical nutrient standards (specifically chlorophyll *a* and phosphorus) for inland water bodies of Florida (outside of the South Florida Region) in response to a lawsuit filed against the US Environmental Protection Agency (EPA) and in conjunction with the Florida Department of Environmental Protection (FDEP). A diatom-based approach for this study was used and I was part of a team that provided the expertise for identifying and enumerating the Florida lacustrine diatom taxonomy.

**Jan. 2010 – June 2011      Postdoctoral Researcher      Aix-en-Provence, France**  
*IRD-CEREGE (Institut de Recherche pour le Développement – Centre Européen de Recherche et d'Enseignement des Géosciences de l'Environnement)*

High-resolution paleoenvironmental reconstruction of Lake Annecy and Lake Lemman using diatom oxygen isotopic composition. Primary research question: To what extent can a paleo-temperature record be

reconstructed using the oxygen isotopic record preserved in fossil diatoms from Lake Annecy and Lake Léman sediments? Research Advisor: Dr. Florence Sylvestre.

- Co-supervision of 1 MS student.
- English grammar editor for various publications by researchers from the CEREGE

**Jan. 2008 – Dec. 2009      Postdoctoral Researcher      Fayetteville, AR & Québec City, Canada**

*Department of Geosciences, University of Arkansas & Centre d'études nordiques/Département de Géographie, Université Laval joint appointment*

Diatom analysis of sediments from Pingualuit Crater Lake, northern Quebec for reconstructions of environmental and climate change during past three interglacials. Research Advisors: Dr. Sonja Hausmann and Dr. Reinhard Pienitz.

- Paleolimnology Lab manager.
- Co-supervision of two PhD students and one MS student.
- Co-taught with S.Hausmann: *GEOG 5003 Ecology & Analysis of Fresh Water Diatoms*.
- Assisted S. Hausmann with teaching: *GEOG 3003 Conservation of Natural Resources*.
- 2008-2009 High School Science Fair Judge

**May 2002 – Dec. 2007      Research Assistant      Boulder, CO**

*INSTAAR (Institute of Arctic and Alpine Research) & Department of Geological Sciences, University of Colorado*

Researching Holocene sediments from an Icelandic glacial lake. Reconstruction of Iceland's second largest ice cap over the last 10,000 years. Specializing in diatom analysis.

- Co-supervision and training of 1 undergrad honors thesis and 4 undergrad laboratory assistants.
- Graduate Student Representative to INSTAAR Directorate 2006
- Graduate Student Retreat Committee Co-Chair 2005 and 2006

**Sept. 2001 – May 2002      Teaching Assistant      Boulder, CO**

*Department of Geological Sciences, University of Colorado*

Developed and instructed field-based laboratory exercises for Global Changes: An Earth Science Perspective introductory geology class.

- Awarded University of Colorado Chancellor's Teaching Fellowship.

**Sept. 1999 – July 2001      Research Assistant      Orono, ME**

*Institute for Quaternary and Climate Studies, University of Maine*

Preparations for geology field research expeditions to New Zealand and for my advisor's field work in Antarctica.

- Awarded University of Maine Graduate Research Fellowship.

**Sept. 1994 – May 1996      Research Assistant      Wellesley, MA**

*Wellesley College Howard Hughes Minority Mentorship Program*

*In vivo* NMR spectroscopy of cyanobacteria. Research included oxygen electrode studies to measure their photosynthetic rate.

- Presented poster at the National Conference on Undergraduate Research, 1996.

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## INTERNATIONAL AGREEMENTS

2017    MOU Universidad de Panamá and Heritage University CIHCE  
 2020    MOU Universidad Autónoma de Chiriquí (UNACHI) and Heritage University CIHCE  
 2023    MOU Universidad Tecnológica Oteima and Heritage University CIHCE (*in progress*)

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## UNDERGRADUATE AND GRADUATE STUDENT MENTORING

I assisted the principal advisors with the completion of each student's research project, providing much of the hands-on guidance for laboratory work and document writing. I successfully trained each student in writing research grant proposals.

### International Undergraduate and Graduate Experiences:

- 2022 Costa Rica International Research Experience (CRIRE) Program, December 10-21, 2022. Program Co-Director. 3 HU students to Las Cruces Biological Research Station, Costa Rica: Darren Olney, Lillie Wesley, Lance Martin. Field Mentor to Charles Goodluck (Navaho Technical University) and Christina Hodge (Salish Kootenai College).
- 2019 Costa Rica International Research Experience (CRIRE) Program, December 7-20, 2019. Program Coordinator. 2 HU students to Las Cruces Biological Research Station, Costa Rica: Kayonnie Badonie. Field Mentor to Nicole Carley (Lac Courte Oreilles Ojibwa College) and Ian McRyhew (Salish Kootenai College).
- 2019 Panama, partnership with Ngäbe Bugle Congreso General and WSU Engineers without Borders, June 4-18, 2019. Brought 5 students to the Ngäbe Bugle Comarca: HU undergraduate STEM students Miguel Palma and Orlando Pelcastre; University of Oregon students Denise Silfee (M.A. student, photo journalist), and B.A. students in School of Journalism Lucy Kleiner (photo journalist) and Lucas Hamilton (videographer).
- 2018 Costa Rica International Research Experience (CRIRE) Program, December 9-21, 2018. Program Coordinator. 2 HU students to Las Cruces Biological Research Station, Costa Rica: Cristy Fiander and Kimberly Stewart. Field Mentor to Nicole Carley (Lac Courte Oreilles Ojibwa Community College) and Brandon Kittson (Salish Kootenai College).
- 2019 Panama, partnership with Ngäbe Bugle Congreso General. Brought two faculty from Heritage University Dr. Alexander Alexiades, Dr. Pedro Chavarria, and one student from the University of Oregon, Brian Amdur (photo journalist).
- 2017 Costa Rica International Research Experience (CRIRE) Program, December 9-22, 2017. 4 HU students to Las Cruces Biological Research Station, Costa Rica: Kimberly Stewart, Zane Ketchen, Corbin Schuster and Robyn Raya. Field Mentor to Kimberlee Blevins (United Tribes Technical College) and Morningstar Gopher (Salish Kootenai College).

### Undergraduate Research Project, Thesis and Awards:

While assisting in numerous student research projects, I was the primary research supervisor for the undergraduate students listed below:

#### Costa Rica Research Experience (CRIRE) Symposium

Hodge, Christina, GoodLuck, Charles and Black, Jessica, 2022. Shampoo Ginger (*Zingiber zerumbet*). *CRIRE, Las Cruces Biological Field Station, Costa Rica*.

Carley, Nicole and Ian McRyhew, 2019. Invasion of the (*Zingiber spectabile*) in the Las Cruces Biological Station: how fast, how far, and which fauna are dispersal vectors? *CRIRE, Las Cruces Biological Field Station, Costa Rica*.

Carley, Nicole and Kittson, Brandon, 2018. Assessing the distribution of *Zingiber spectabile* in the secondary and primary forest at the Las Cruces Biological Field Station and identifying its uses by local fauna. *CRIRE, Las Cruces Biological Field Station, Costa Rica*.

Blevins, Kimberlee and Morningstar Gopher, 2017. Distribution of *Zingiber spectabile* in the Las Cruces Biological Station. *CRIRE, Las Cruces Biological Field Station, Costa Rica*.

#### Annual Murdock College Science Research Conference

Wolftail, D. & Adam, J., 2021. Quantification of The Colville and Spokane Tribe Water Right Adjudication and Potential Impacts to Current Junior Water Right Holders. *2021 Murdock College Science Research (MCSR) Conference, November 12-13, 2021. Poster.*

Serrano, Karly Beth and Marissa Porter, 2020. Influence of Nitrogen Applications on Experimental Hop Plan Growth and Pest. Industry Partner John I. Haas, Inc. Yakima Golding Farm. *2020 Murdock College Science Research (MCSR) Conference, November 6-7, 2020, Virtual Conference.* J.L. Black HU CRESCENT research advisor.

\*1st Place winner of Environmental Science-Geology Murdock Poster Prize

#### Heritage University Gathering of Scholars Symposium (HUGSS)

Serrano, Karly Beth and Marissa Porter, 2020. Influence of Nitrogen Applications on Experimental Hop Plan Growth and Pest. Industry Partner John I. Haas, Inc. Yakima Golding Farm. *Heritage University Gathering of Scholars Symposium, April 3, 2020, Virtual Conference.* J.L. Black HU CRESCENT research advisor.

Alexander Martinez, Xavier Martinez, Paige Delp, Jose Figueroa, Jessica L. Black, 2019. Assessment of Nitrate Retention in Biochar Amended Soils in a Wildfire Gala Apple Tree Orchard. *Heritage University Gathering of Scholars Symposium, April 2, 2019, Toppenish, WA.*

Jose Figueroa Orduño, Paige Delp, Alexander & Xavier Martinez, Jessica L. Black, 2019. Effects of Biochar on Apple Trees in the Yakima County, South Central Washington State. *Heritage University Gathering of Scholars Symposium, April 2, 2019, Toppenish, WA.*

Paige Delp, Jose Figueroa Orduño, Alexander and Xavier Martinez, 2019. Biochar in Commercial Apple Orchards of the Yakima Valley: 2018. *Heritage University Gathering of Scholars Symposium, April 2, 2019, Toppenish, WA.*

\*2<sup>nd</sup> Place winner.

Alexander Martinez, 2018. The Impact of Biochar on plant height. *Heritage University Gathering of Scholars Symposium, April 3, 2018, Toppenish, WA.*

Xavier Martinez 2018. Assessment of biochar amended soil on bell pepper growth and production. *Heritage University Gathering of Scholars Symposium, April 3, 2018, Toppenish, WA.*

Alexis Oxley, 2018. Impact of Biochar on Bell Pepper Diameter. *Heritage University Gathering of Scholars Symposium, April 3, 2018, Toppenish, WA.*

Sandra Mena, 2018. Does the Addition of Biochar as a Soil Amendment Increase Soil Water Retention? *Heritage University Gathering of Scholars Symposium, April 3, 2018, Toppenish, WA.*

#### Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) National Meeting

Figueroa, Jose Orduno, Paige Delp, Alexander Martinez, Xavier Martinez, and Jessica L. Black, 2019. *Effects of Biochar on Apple Trees in Yakima County, South Central Washington State.* SACNAS National Meeting, November 1, 2019, Honolulu, HI.

Martinez, Alexander, Alexis Oxley, Alexander Xavier and Jessica L. Black, 2019. *Assessment of Biochar Amended Soil on Bell Pepper Growth and Production.* SACNAS National Meeting, October 31, 2019, Honolulu, HI.

Martinez, Xavier, Alexis Oxley, Alexander Martinez and Jessica L. Black, 2019. *Assessment of Biochar Amended Soil on Bell Pepper Growth and Production.* SACNAS National Meeting, November 1, 2019, Honolulu, HI.

#### American Indian Science and Engineering Society (AISES) National Conference

2022 – Kayonnie, Darren, Noah, Agnes

2021 – Dehlia, Agnes

Darren Olney, Dehlia Wolftail, Agnes Meninick, Lillie Wesley and Jessica L. Black, 2021. Community Awareness on Air Quality in the Lower Yakima Valley and Yakama Nation. American Indian Science and Engineering Society (AISES) National Conference. Phoenix, AZ. September 24, 2021. Poster.

Michael Buck, Ralph Lampman, Jessica Black, Alexander Alexiades, 2017. *Identifying Yakama Nation NWOK (Native Ways of Knowing) through Acknowledgements of Indigenous Traditional Ecological Knowledge of Pacific Lamprey Harvest Methods*. American Indian Science and Engineering Society (AISES). Denver, CO.

Jacob Billy Sr.: *Nitrate mitigation of field drain water in the Lower Yakima Valley*. Research Project 2014, Heritage University.

- Presented poster at 2014 American Indian Science and Engineering Society (AISES) National Conference.
- HU Student Government Association Travel Award 2014: \$1,000
- TITLE V STEM research award 2014: \$1,500
- Institute for Washington's Future Research Grant: \$2,500

Daylen T. Isaac: *Utilizing biochar to mitigate nitrate leaching and increase crop yield in south central Washington State*. Research Project 2014, Heritage University.

- Presented poster at 2014 American Indian Science and Engineering Society (AISES) National Conference.
- ❖ **Awarded CHS Foundation Special Award for Undergraduate Research \$1,000**
- HU Student Government Association Travel Award 2014: \$1,500
- NSF REU Research Award 2014: \$4,500
- 2014 AMP Scholarship \$750

Francisco Ramirez: *Assessing Efficiency of Biochar as a Mediator for Nitrate Leaching in Soils*. Research Project 2014, Heritage University.

- Presented poster at 2014 American Indian Science and Engineering Society (AISES) National Conference.
- HU Student Government Association Travel Award 2014: \$1,500
- Institute for Washington's Future Research Grant: \$4,000

Cialita G. Keys: *Testing for Nitrates in the Lower Yakima Valley*.

- Presented in Sharing Circle at 2013 Gathering of Scholars Conference, Heritage University
- Presented at Mellon Mays Undergraduate Fellowship Fall 2013 Regional Conference, UC Berkeley, CA
- NSF REU Research Award 2013: \$4,500

Michelle George: *Effects of Spawned Pacific Lamprey Carcasses on Macroinvertebrate Population Dynamics in Two Tributary Streams to Yakima River in South-Central WA, USA*.

- Presented Talk at 2013 Gathering of Scholars Conference, Heritage University
- TITLE V STEM research award 2014: \$1,500

Anna Wagner: *Icelandic proglacial lake sediments: Evidence of seasonal laminations provide a means to interpret the Holocene climate on an inter-seasonal resolution*. University of Colorado. Successfully defended Thesis: April 2005.

- 2004 DOSECC (Drilling, Observation and Sampling of the Earth's Continental Crust) Internship Award (\$2,500), presented research at DOSECC Annual Meeting, 2005.
- 2004 Lakeside Merit Scholarship (\$780)
- 2003 UROP assistantship (\$800)

#### National Tribal Forum on Air Quality (NTFAQ)

India Young, Dehlia Wolftail, Agnes Meninick, Lillie Wesley, Jayenell Lee, Josie Kamkoff and Nadine Kochuten, 2022. Expansion of 2020 Sensor Loan Program in Tribal Communities. National Tribal Forum on Air Quality 2022. Tulsa, OK. May 2-5, 2022. Oral Presentation.

**MS Thesis:**

Benjamin Quesada: *Etude des échanges hydro-isotopiques lac-atmosphère sur l'Altiplano Bolivien au Tardiglaciaire (18-14 ka). Apport de la composition isotopique en oxygène de la silice des diatomées lacustres*. IRD-CEREGE. Successfully defended MS Thesis: June 2010.

- 2010 Awarded fully funded PhD studentship at Laboratoire des Sciences du Climat et de l'Environnement, Université de Saint-Quentin en Yvelines, Gif-sur-Yvette, France.
- 2013 Awarded Outstanding Student Poster (OSP) Awards at European Geoscience Union General Assembly (EGU)

Raymond Keveren: *A 15,000-year reconstruction of paleolimnological change through diatom assemblage biostratigraphy of Greyling Lake, Chugach Range, south-central Alaska*. University of Arkansas. Successfully defended MS Thesis: August 2010.

- 2010 Awarded both Queen's University Studentship (£60,000) and NSF Graduate Research Fellowship (\$122,500) for PhD studies at Queens University, Belfast, UK.

**PhD Dissertation:**

Darryl Reano: *GeoConnections: Evaluating the Impact of A Place-Based, Culturally-Relevant Geoscience Learning Module on Undergraduate Students' Connections to Geoscience Concepts Careers*. Purdue University. PhD Defense, April 2019.

- 2014-2016 Lighting the Pathway Mentor (AISES NSF Grant) to D. Reano.
- 2015 Geological Society of America Student Award (\$3,000). Mentored Student.
- 2017 NSF I-USE (Improving Undergraduate STEM Education: Education and Human Resources) Award No. 1712378, 05/15/2017 – 04/30/2019, (\$100,000). Mentored student. J. Black Co-PI

Ruchi Bhattacharya: *Reconstruction of past flood events from lower White River, Arkansas using diatoms and geochemistry as proxies*. University of Arkansas. Successfully defended dissertation: Fall 2010.

- 2009 Geological Society of America Student Award (\$1,600)
- 2009 Lakeside Merit Scholarship (\$780)
- 2009 North American Diatom Symposium Travel Award (\$200)

Byron Winston: *Determining the source and mechanisms of production of methyl-iso-borneol and geosmin at Beaver Reservoir*. University of Arkansas. Successfully defended dissertation: Fall 2011.  
2009 GSA Student Award (\$1,240)

- 2009 Lakeside Merit Scholarship (\$780)

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## HIGH SCHOOL STUDENT MENTORING

I assisted the principal advisors with the completion of each student's research project, providing much of the hands-on guidance for laboratory work and document writing. I successfully trained each student in writing research grant proposals. These are only a partial representative sample of the high school student research presentations from both White Swan High School and the Yakama Nation Tribal School done as part of the EnvironMentors program, directed by J.L. Black.

**2022**

EM on Hiatus at HU

**2021**

Randolph Bill and Latonia Andy, 2021. Species Abundance in Two Areas of Yakama Nation Forests. *EnvironMentors Showcase, June 2<sup>nd</sup>, 2021, Toppenish, WA*.

Devin J. Martinez, Danielle Squeochs, and Landon J. Charlo, 2021. Presence/Absence Analysis of Wild Ungulates in the Yakama Nation Forest and the Xwayama Urban Forest. *EnvironMentors Showcase, June 2<sup>nd</sup>, 2021, Toppenish, WA*.

Xavier Jasway, Karolynn Tom, and Jessica L. Black, 2021. Presence of Beavers in the Yakama Nation. *EnvironMentors Showcase, June 2<sup>nd</sup>, 2021, Toppenish, WA.*

Jonas Seabbyrobe and Latonia Andy, 2020. Otter Food Source and Habitat. *Yakama Nation Tribal School EnvironMentors Showcase, June 10, 2020, Toppenish, WA.*

## 2020

Jordan Ashue, Monet Becenti, and Lillie Wesley, 2020. Culvert and Otter Research in Xwayama Urban Forest. *Yakama Nation Tribal School EnvironMentors Showcase, June 10, 2020, Toppenish, WA.*

Angela Goudy and Karolynn Tom, 2020. The Journey of Beaver: A study of beaver behavior in Xwayama Urban Forest. *Yakama Nation Tribal School EnvironMentors Showcase, June 10, 2020, Toppenish, WA.*

Jenadi Wheeler and Jessica L. Black, 2020. Researching the Feral Cats in the Xwayama Forest in Toppenish, WA. *Yakama Nation Tribal School EnvironMentors Showcase, June 10, 2020, Toppenish, WA.*

## 2019

Maria Torres and Omar Torres, 2019. Assessment of Air Quality in White Swan High School, WA. *EnvironMentors National Conference, Washington D.C.*

Jayenell Lee and Shelby Clark, 2019. Correlation between PM2.5 and Temperature in the Lower Yakima Valley, WA. *EnvironMentors National Conference, Washington D.C.*

Amelia Andy and Kimberly Stewart, 2019. Comparison of Indoor and Outdoor Shed Air Quality. *EnvironMentors National Conference Washington D.C.*

## 2018

Jason Grajales, Alexis Oxley, Jessica Black, 2018. Comparative Analysis of Different Types of Air Quality Sensors. *Heritage University EnvironMentors Fair, Toppenish, WA.*

Jayenell Lee and Alexis Oxley, 2018. Winter Inversions in the Yakima Valley. *EnvironMentors National Conference, Washington D.C.*

Shannon Mack-Andy, Coalby Valicoff, Jessica Black, 2018. Blackout. *Heritage University EnvironMentors Fair, Toppenish, WA.*

Maria Torres and Robyn Raya, 2018. Air Quality in the Yakama Nation. *EnvironMentors National Conference, Washington D.C.*

Dominique ‘Nikki’ Vargas, Eric Philipp-Petrick, 2018. White Swan High School Classroom Air Quality. *EnvironMentors National Conference, Washington D.C.*

Alexa Weaseltail and Jayenell Lee, 2018. Comparison of Impact of Wood Smoke from a Wood Stove on Indoor and Outdoor Air Quality in a Typical White Swan, WA Home. *Heritage University EnvironMentors Fair, Toppenish, WA.*

## 2017

Taylor Sinclair, Robyn Raya, and Jessica L. Black, 2017. White Swan High School Particulate Matter and Health Effects. *EnvironMentors National Conference, Washington D.C.*

Darrel Watlamet-Luke and Jacob Billy, 2017. Monitoring Air Quality in White Swan Washington. *EnvironMentors National Conference, Washington D.C.*

Jason Grajales and Briana Rhode, 2017. Air Quality in White Swan, WA. *EnvironMentors National Conference, Washington D.C.*

Alexa Sapphire Weaseltail, Judy Bergevin, and Cristy Fiander, 2017. The Air Particles at White Swan High School, WA. *EnvironMentors National Conference, Washington D.C.*

## 2016

Judy Bergevin, LaRana Sohappay, Peggy Sanchey and Anne Grove, 2016. Elder’s story: Protection of traditional Yakama foods. White Swan High School. *EnvironMentors National Fair, Washington D.C.*



Maria Ortiz and Teresa Julian, 2016. Identifying strengths and challenges in the environmental community from the perspective of youth in a small rural community. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

Sullyvan Piel, Tarrel Williams, Doug Olney, Ed Mann and Jessica L. Black, 2016. Comparison of Forest Regrowth in Recently Logged Area Plots, Yakama Indian Nation. White Swan High School. White Swan High School. *EnvironMentors National Fair, Washington D.C.00*

## 2015

Jesus Cervantes and Roger Dick, 2015. The influence of Dam Parameters on Returning Adult Chinook Salmon in the Columbia River Basin. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

Maria Ortiz and Teresa Julian, 2015. The exploration of perceived health and environmental concerns. White Swan High School. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

Sullyvan Piel, Glen Yallup and Jessica L. Black, 2015. Comparison of Forest Regrowth in Recently Logged Area Plots, Yakama Indian Nation. White Swan High School. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

## 2014

Katheryn (Katie) Dick, Tom Unruh, 2014. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

Jeremy Garcia and Cialita Keys, 2014. Decolonization of a Diet. White Swan High School. Yakama Nation Tribal School. *EnvironMentors National Fair, Washington D.C.*

Courtney John, Delia D. Ramos, Michael Parra, 2014. Chz1 Regulated Deposition of H2A.Z on Chromatin. Yakama Nation Tribal School. *EnvironMentors National Fair, Washington D.C.*

Elizabeth Johnston and Rodney Cooper, 2014. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

Morelia Maravilla, Dale Ingram, 2014. Harnessing Solar Power Energy. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

Santana Rocha and Daylen Isaac, 2014. Nitrate Sorption of Biochar. Yakama Nation Tribal School. *Heritage University EnvironMentors Fair, Toppenish, WA.*

Arianna Wildflower, Kazuhiro Sonoda and Jessica L. Black, 2014. Organic and Inorganic Particle Contamination in White Swan Air. White Swan High School. *Heritage University EnvironMentors Fair, Toppenish, WA.*

## 2013

Hugo Barajas, Tom Unruh, 2013. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

Katheryn (Katie) Dick, Rodney Cooper, 2013. Exploring the Significance of a Blue Fat Body: Finding a More Environmentally Friendly Way to Control the Potato Psyllid. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

Salvador Guzman, Erin Hollingberry, 2013. Insects in bird nests. *Heritage University EnvironMentors Fair, Toppenish, WA.*

Brandi Hopson and Michael Parra, 2013. Genetic Variation in Milk-Producing Cows. White Swan High School. *Heritage University EnvironMentors Fair, Toppenish, WA.*

Elizabeth Johnston and Heather Simmons-Rigdon, 2013. Effects of Nitrates on Northern Leopard Frog (*Rana pipiens*) Tadpole Growth and Development. White Swan High School. *EnvironMentors National Fair, Washington D.C.*

Sabrina Sam, Peggy Plumlee, Jim Stephenson, Peggy Sanchey, Charlie Senator, 2013. Plant Survey: Effect of Wild Horses on the Native Shrub-Steppe Vegetation in Yakama Indian Reservation. *EnvironMentors National Fair, Washington D.C.*

Calista Spoonhunter and Corey Gray, 2013. What Environmental Effects Can an Interferometer Detect? White Swan High School. *Heritage University EnvironMentors Fair, Toppenish, WA. \*Special Mention*

Xavier Valladares and Tom Unruh, 2013. Aphid Biological Control Agents. White Swan High School. *Heritage University EnvironMentors Fair, Toppenish, WA.*

Arianna Wildflower, Kazuhiro Sonoda, Jessica L. Black, 2013. Lead Levels in White Swan. White Swan High School. *Heritage University EnvironMentors Fair, Toppenish, WA.*

## PUBLICATIONS

Reano, D., **Black, J.L.**, Tahkeal, D., Billy, J., Buck, M., Fiander, C., Washines, A., Harbor, J., Masta, S., Rodriguez, A., & Bueno Watts, N. (in prep). GeoConnections and perceptions of geoscience among undergraduate students living along the Yakima River in Washington State. *Journal of Geoscience Education. Manuscript in preparation.*

\*4 HU undergraduate students are co-authors

**Black, J.L.**, Johnson, S.R., Silfee, D. and Gallardo, C.M., 2022. An Indigenous Intercambio Program: Empowering Underrepresented STEM Students to Participate in Scientific and Cultural Exchange Through Study Abroad. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 34(3), pp.16-43.

Stampfer, O., Torres Cassio, O., Grajales, J.A., **Black, J.L.**, Austin, E., Seto, E., Karr, C.J., 2021. Partnership to Develop and Deliver a Curriculum Supporting Student-Led Research on Air Quality in the Lower Yakima Valley, WA. *Target Journal: Progress in Community Health Partnerships.*

\*2 HU undergraduate students and 1 former WSHS student are co-authors

Alexiades, A. V., M. A. Haeffner, D. Reano, M. Janis, **J. Black**, K. Sonoda, M. Howard, C. Fiander, and M. Buck. 2021. Traditional Ecological Knowledge and Inclusive Pedagogy Increase Retention and Success Outcomes of STEM Students. *Bull Ecol Soc Am* 102(4): e01924. <https://doi.org/10.1002/bes2.1924>. \*2 HU undergraduate students are co-authors

**Black, J. L.**, & Jacob, M. M., 2020. Indigenous environmental science on the Columbia River plateau: Traditional Ecological Knowledge and the people of the big river field class. In M. M. Jacob & S. RunningHawk Johnson (Eds.), *On Indian Ground: The Northwest* (pp. 151-177). Information Age Publishing, Inc.

Bhattacharya, Ruchi, Sonja Hausmann, J. Bradford Hubeny, Peter Gell, **Jessica L. Black**, 2016. Ecological response to changing hydrological variability and catchment development: insights from a shallow oxbow lake in Lower Mississippi Valley, Arkansas. *Science of the Total Environment*. 569-570:1087-97. doi: 10.1016/j.scitotenv.2016.06.174.

Quesada, Benjamin, Florence Sylvestre, Françoise Vimeux, **Jessica Black**, Christine Paillès, Corinne Sonzogni, Anne Alexandre et al., 2015. Impact of Bolivian paleolake evaporation on the  $\delta^{18}\text{O}$  of the Andean glaciers during the last deglaciation (18.5–11.7 ka): diatom-inferred  $\delta^{18}\text{O}$  values and hydro-isotopic modeling. *Quaternary Science Reviews*, v. 120, p. 93-106.

Marie-Elodie Perga, Victor Frossard, Jean-Philippe Jenny, Benjamin Alric, Fabien Arnaud, Vincent Berthon, **Jessica L. Black**, Isabelle Domaizon, Charline Giguet-Covex, Amy Kirkham, Michel Magny, Marina Manca, Aldo Marchetto, Laurent Millet, Christine Paillès, Cecile Pignol, Jérôme Poulénard, Jean-Louis Reyss, Frederic Rimet, Pierre Sabatier, Olga Savichtcheva, Florence Sylvestre, Valérie Verneaux, 2015. High-resolution paleolimnology opens new management perspectives for lakes adaptation to climate warming. *Frontiers in Ecology and Evolution*, v. 3, article 72, doi: 10.3389/fevo.2015.00072.

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- Shanahan, T. M., J. T. Overpeck, J. B. Hubeny, J. King, F. S. Hu, K. Hughen, G. Miller, and **J. Black**, 2008, Scanning micro-X-ray fluorescence elemental mapping: A new tool for the study of laminated sediment records. *Geochemistry Geophysics Geosystems*, v. 9, p. Q02016.
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- Black, J.** Miller, G., Geirsdóttir, Á., Manley, W., and H. Björnsson, 2004. Sediment thickness and Holocene erosion rates derived from a seismic survey of Hvítárvatn, central Iceland. *Jökull*, v. 54, p. 37-56.
- Karlén, W., and **J. L. Black**, 2002. Estimates of lichen growth-rate in northern Sweden. *Geografiska Annaler*, v. 84 A, p. 225-232.
- Geirsdottir, A., Miller, G.H., **Black, J.**, and T. Thordarson, 2002. Did Iceland's icecaps disappear in the Warm Early Holocene? *Eos Transactions American Geophysical Union*, v. 83, no. 47, Fall Meeting Supplement PP61A-0295.
- Black, Jessica L.**, Johnston, Ben C., Nestor, Rebecca A., Koblinsky, Corinn C., Hall, Jennifer L., Dickson, Stephen M. and Kelley, Joseph T., 2002. Coastal bluffs in the Newbury Neck quadrangle, Maine. *Maine Geological Survey (Department of Conservation)*, Open-File Map 02-198, scale 1:24000.
- Black, Jessica Laura**, 2008. Holocene climate change in south-central Iceland: A multi-proxy lacustrine record from glacial lake Hvítárvatn [PhD Thesis]: Boulder, University of Colorado.
- Black, J.L.**, 2001. Can a Little Ice Age climate signal be found in the Southern Alps of New Zealand? [Master's Thesis], University of Maine, Orono.

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## GRANTS AND AWARDS

- Pending* United States Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) From Learning to Leading: Cultivating the Next Generation of Diverse Food and Agriculture Professionals Grant. Title: CASCADES PNW: Capacity-Building and Success in Success in a Culturally- Responsive and a Diverse Educational Environmental for FANH Students in the PNW (PNW CASCADES). PD **Jessica L. Black** (\$19,997,790). *Pending*
- 2022 National Science Foundation (NSF) Louis Stokes STEM Pathways and Research Alliance: All Nations Alliance for Minority Participation (ANAMP), Costa Rica International Research Experience (CRIRE), Salish Kootenai College Lead PI Steve Dupuis. Heritage University Subaward PI **Jessica L. Black** (\$30,000).
- 2013-Present National Science Foundation (NSF) Louis Stokes STEM Pathways and Research Alliance: All Nations Alliance for Minority Participation (ANAMP), Salish Kootenai College Lead PI Steve Dupuis. Heritage University Chapter Liaison **Jessica L. Black** (\$10,500-\$15,000).
- 2023 United States Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) Grant. Title: Building a Community of Practice for Tribal Agroforestry Producers and

- Youth in the Pacific Northwest. Ecotrust Lead PD Stephanie Gutierrez (\$2,504,200). Heritage University Subaward PI **Jessica L. Black** (~\$36,000).
- 2023 Washington Forest Protection Association (WFPA) to CIHCE, **Jessica L. Black** (\$500).
- 2022 Battelle. People of the Big River Field Class. Written by David Wise, VP Advancement at HU. PI **Jessica L. Black** (\$10,000).
- 2022 Washington Forest Protection Association (WFPA) to CIHCE, **Jessica L. Black** (\$500).
- 2022 National Science Foundation (NSF) Division of Undergraduate Education Grant. Project Title: A New STAR Is Born: Expanding the Reach of A Successful Preservice Teacher Research Program (STAR). California Polytechnic State University Lead PI Stamatis Vokos (\$2,525,558). Heritage University Subaward PI **Jessica L. Black** (\$102,990).
- 2021 National Science Foundation (NSF) AI Research Institutes Grant. Project Title: AI Institute: Agricultural AI for Transforming Workforce and Decision Support (AgAID). Washington State University Lead PI: Anantharaman Kalyanaraman (\$20,000,000). Heritage University Subaward PI **Jessica L. Black** (\$150,000).
- 2021 Battelle. People of the Big River Field Class. Written by David Wise, VP Advancement at HU. PI **Jessica L. Black** (\$10,000).
- 2021 Louis Stokes Regional National Science Foundation International Center of Excellence (LSAMP-NICE) Faculty Mentor Award. Project Title: Analysis of impact of watershed land use on water quality and hydrological parameters of three indigenous communities in the Comarca Ngäbe Bugle, Panama (NGB-COMARCA). PI: **Jessica L. Black** (\$13,000).
- 2020 Andrew W. Mellon Foundation Just Futures Grant. Project Title: Pacific Northwest Just Futures Institute for Racial and Climate Justice. University of Oregon, Lead PI John Arroyo (\$4,520,000). HU Project PI Jessica L. Black (\$15,000).
- 2020 Environmental Protection Agency (EPA) American Indian Air Quality Training Program Grant. Lead PI Mansel A. Nelson at Institute for Tribal Environmental Professionals (ITEP) and Northern Arizona University (NAU). HU Project Partner PI **Jessica L. Black** (\$25,000).
- 2020 EPA 2020 Regional/State/Tribal Innovation Projects Grant. Project Title: Demonstration of a Tribal Air Sensor Loan Project. Lead PI Christi Duboiski. HU Project PI **Jessica L. Black** (\$10,000 equivalent of Purple Air Sensors).
- 2019 National Science Foundation (NSF): Hispanic Serving Institutions (HSI). Project Title: CRESCENT: Culturally Responsive Education in STEM. PI **Jessica L. Black** (\$2,500,000).
- 2018 Ecotrust. USFS Growing the Tribal Forestry Workforce in the PNW and Beyond. Sub-Award Director **Jessica L. Black** (\$36,000).
- 2018 The Suquamish Tribe Appendix X Grant. Project Title: *People of the Big River Field Class*. PI: **Jessica L. Black** (\$3,400)
- 2018 Tulalip Tribes Charitable Fund. Project Title: *People of the Big River Field Class*. PI: **Jessica L. Black** (\$5,000)
- 2018 Cornerstone Ranches, Toppenish, WA. Project Title: *Agricultural Research Student Stipend*. PI: **Jessica L. Black** (\$5,000). Used to support DACA student for summer research.
- 2017 National Science Foundation (NSF): Alliances for Graduate Education and the Professoriate Transformation (AGEP-T). Project Title: *PNW-COSMOS: Pacific Northwest Collaborative Opportunities For Success in Mentoring Of Students*. Heritage University Sub-Award Supplement: Sub-Award Coordinator of Recruitment Activities and Advisor: **Jessica L. Black** (\$50,000).

- 2017 Bonneville Power Administration (BPA): Tribal Capacity Building Grant. Project Title: *People of Big River Field Class and Indigenous Natural Resources Leadership Lecture Series*. PI: **Jessica L. Black** (\$20,000).
- 2017 National Science Foundation (NSF): Improving Undergraduate STEM Education (IUSE). Project Title: *GeoConnections: Evaluating the Impact of Place-Based, Culturally-Relevant Geoscience Learning Modules on Undergraduate Students' Connections to Geoscience Concepts and Careers*. PI Jonathan M. Harbor, Co-PI: **Jessica L. Black** (\$100,000).
- 2016 Environmental Protection Agency (EPA) Science To Achieve Results (STAR) Research Program: Air Pollution Monitoring for Communities. Project Title: *NextGenSS: Putting next generation sensors and scientists in practice to reduce wood smoke in a highly impacted, multicultural rural setting*. PI: Catherine Karr (\$746,021). Heritage University Sub-Award: Sub-Award PI: **Jessica L. Black** (\$239,500).
- 2015 National Science Foundation (NSF): Improving Undergraduate STEM Education (IUSE). Project Title: *iNtegration of Aquatic sciences and Traditional Ecological Knowledge for undergraduate culturally Responsive Education (i-Nature)*. PI: **Alexander Alexiades**, Co-PI: **Jessica L. Black** (\$299,441)
- 2015 United States Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) Hispanic-Serving Institutions Grants Program. Project Title: *(HU-NEW-ACRE: Human Resources for a New Agriculture: Educating a more Diverse, Capable and Resilient Workforce for the Era of Climate Change*. PD: **Jessica L. Black** (\$269,675).
- 2014 Institute for Washington's Future. Project Title: *Investigating Efficacy of Biochar Use in Sustainable Agriculture Practices in South Central Washington State*. PI: **Jessica L. Black** (\$7,500)
- 2014 National Science Foundation (NSF): Alliances for Graduate Education and the Professoriate Transformation (AGEP-T). Project Title: *PNW-COSMOS: Pacific Northwest Collaborative Opportunities For Success in Mentoring Of Students*. Heritage University Sub-Award: Sub-Award Coordinator of Recruitment Activities and Advisor: **Jessica L. Black** (\$38,458)
- 2014 UPS Field Travel Grant to National Center for Science and the Environment (NCSE). Project Title: *Environmentors*. PI: **Jessica L. Black** (\$600)
- 2013 Yakima County, Ground Water Management Area (GWMA). Project Title: *Administering Public Informational Questionnaire*. PI: **Jessica L. Black** (\$5,300)
- 2013 Muckleshoot Charity Fund. Project Title: *People of the Big River Field Class*. PI: **Jessica L. Black** (\$5,000)
- 2013 Bill & Melinda Gates Foundation Pacific Northwest Community Grants: Family and Community Roles in Supporting Student Success. Project Title: *Empowering Traditional Ecosystem Knowledge Through Inter-generational Mentoring*. PI: Winona Wynn, Co-PI: **Jessica L. Black** (\$50,000)
- 2013 National Environmental Education Foundation (NEEF) America's Great Outdoors: Connecting Youth to the Outdoors Grant. Project Title: *People of the Big River Environmental Education Field Class*. PI: **Jessica L. Black**, Co-PI: Kazuhiro Sonoda (\$15,000)
- 2009 PAGES 1<sup>st</sup> Young Scientist Meeting and 3<sup>rd</sup> Open Scientist Meeting Travel and Meeting Award (\$1,400)
- 2006 Colorado Diversity Initiative Summer Award, University of Colorado Graduate School (\$3,600)
- 2006 American Geological Institute Minority Participation Program Scholarship (\$1,000)



2005	Colorado Diversity Initiative Summer Award, University of Colorado Graduate School (\$3,600)
2005	American Geological Institute Minority Participation Program Scholarship (\$1,500)
2005	Geological Society of America Research Grant (\$1,200)
2005	Lakeside Merit Scholarship (\$585)
2004	American Geological Institute Minority Participation Program Scholarship (\$2,500)
2004	Geological Society of America Research Grant (\$3,000)
2004	Lakeside Merit Scholarship (\$780)
2003	American Geological Institute Minority Participation Program Scholarship (\$2,500)
2003	University of Colorado Beverly Sears Graduate Student Grant (\$400)
2003	Geological Society of America Research Grant (\$2,500)
2002	Geological Society of America Research Grant (\$2,800)
2000	Association for Graduate Students Grant for Research and Travel (\$490)
2000	Institute for Quaternary Studies Research and Travel Grant (\$2,500)

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## CONFERENCES AND INVITED PRESENTATIONS

- Black, Jessica L.,** 2022. Yakima Young Women's Leadership Summit., November 12, 2022. Invited Speaker.
- Black, Jessica L.,** 2022. Intergenerational Indigenous STEM on the Columbia River Plateau - the People of the Big River Field Class. Spring Quarter Geology Speaker Series, Central Washington University, April 22, 2022. Invited Speaker.
- Black, Jessica L.,** 2021. Faculty and Leadership Pathways at Minority-Serving Institutions Panel. Future Professor's Institute: Advancing Diversity & Inclusion in the Academy, Cornell University, June 23, 2021. Invited Panelist.
- Black, Jessica L.,** 2021. HU Academic Affairs Committee of Board Meeting, April 13, 2021, Science Department Presentation.
- Black, Jessica L.,** 2021. MLK CILT event: "The Legacy and the Threshold", "What are we doing for others"? Martin Luther King, Jr. How can we contribute to social justice in our communities? February 25, 2021. Panel Discussion moderator.
- Black, Jessica L.,** 2021. People of the Big River Field Class: Intergenerational Indigenous STEM on the Columbia River Plateau. Portland State University School of the Environment Seminar Series, February 11, 2021. Invited Virtual Presentation.
- Black, Jessica L.,** 2021. LSAMP-NICE 2<sup>nd</sup> Annual Meeting. Building International Capacity and Collaboration During COVID-19. *Best practices in digital partnership building, student engagement, and program implementation Virtual Workshop, January 28-29, 2021.*
- Black, Jessica L.,** Dugan, James, Jones-Dance, Gloria, Neely, Sol, and Tom, Karolynn J., 2021. Developing a Culturally Responsive Pre-Service Faculty Teaching and Mentoring Seminar: Innovative Partnership with a Minority Serving Institution for Preparing the Next Generation of STEM Faculty. *2021 AAC&U Conference on Transforming STEM Higher Education. Virtual Conference. November 5, 2021.* Oral Presentation.

- Black, Jessica L.**, 2020. CRESCENT. Effective communication and resilience building techniques for STEM-HSI students in a Pandemic - Utilizing a network of culturally responsive support systems. *Building HSI Learning Resilience in the Face of Crisis. Virtual Conference, November 2-4, 2020.*  
\***Member of Conference Planning Leadership Team**
- Black, Jessica L.**, 2020. People of the Big River Field Class: Intergenerational Indigenous STEM on the Columbia River Plateau. **Plenary Speaker.** *Washington Oregon Higher Education Sustainability Conference (WOHESC), University of Oregon, Eugene, OR, March 4, 2020.*
- Black, Jessica L.**, 2020. Putting Environmental Justice into Practice. **Invited Panelist.** *Washington Oregon Higher Education Sustainability Conference (WOHESC), University of Oregon, Eugene, OR, March 4, 2020.*
- Austin, Elena and Jessica L. Black**, 2020. Putting Next Generation Sensors and Scientists in Practice to Reduce Wood Smoke in a Highly Impacted, Multicultural Rural Setting (NextGenSS). **Invited Talk.** *U.S. Environmental Protection Agency (EPA) Office of Research and Development's Extramural Research & Partnership Division (ERPD) Air Pollution Monitoring for Communities: Final Grant Meeting, Research Triangle Park, NC, February 25-26, 2020.*
- Black, Jessica L.**, 2020. Community Engagement in Developing Sensor Projects. **Invited Panelist.** *U.S. Environmental Protection Agency (EPA) Office of Research and Development's Extramural Research & Partnership Division (ERPD) Air Pollution Monitoring for Communities: Final Grant Meeting, Research Triangle Park, NC, February 25-26, 2020.*
- Black, Jessica L.**, 2020. NASA Monority University Research and Education Project (MUREP) Aerospace Academy (MAA) Expert Review Panel (ERP). **Invited Panelist.** *NASA Glenn Research Center, Cleveland, OH, February 13, 2020.*
- Black, Jessica L.**, 2020. Costa Rica International Research Experience (CRIRE). **Invited Panelist.** *Advancing International Research Experiences for Students. Emerging Researchers National (ERN) Conference in STEM, Washington, D.C., February 7, 2020.*
- Black, Jessica L.**, 2019. People of the Big River Field Class: Intergenerational Indigenous STEM on the Columbia River Plateau. **Invited Talk.** In Session: Advancement of Equity and Access in STEM Education for Rural and Tribal Communities: Intergenerational Approaches to Culturally-Responsive Program Development. Session Chair Steve Dupuis. *SACNAS – The National Diversity in STEM Conference, Honolulu, HI, November 2, 2019.*
- Black, Jessica L.**, 2019. Integrando el Conocimiento Ecológico Cultural con la Educación de Las Ciencias– Asociaciones de investigación entre EEUU, Panamá y Costa Rica. **Invited Presentation.** *Louis Stokes Alliance for Minority Participation – NSF International Center of Excellence (LSAMP-NICE) Inaugural Meeting. French Embassy, Washington, D.C., September 9-10, 2019.*
- Black, Jessica L.**, Michelle Jacob, Kelly Gonzales, Brook Colley, 2019. Resisting the White Possessive: A Collaborative Space for Discussing Problems of “Inclusion” in the Academy and Beyond. **Session Chair.** *Native American and Indigenous Studies Association (NAISA) Conference 2019, University of Waikato, Hamilton, Aotearoa/New Zealand, June 26-29, 2019.*
- McMurty, J., Ed Galindo, Raquel Arouca, Aaron Thomas, Beverly Hartline, **Jessica L. Black**, David Claudio, Kinsey Skillen, Shanny Spang-Gion, Landon Charlo, Taymee Brandon, 2019. Developing Mentoring Relationships through place-based experiential field camp. **Invited Pannelist.** *Diverse Pathways in STEM: Achieving the Dream, 2019 AGEF Research Meeting, Coeur d’Alene, ID, 19 – 21 May, 2019.*
- Black, Jessica L.**, and **Celestino Mariano Gallardo**, 2019. Integrando el Conocimiento Ecológico Tradicional con la Educación de Las Ciencias– Asociaciones de investigación entre EEUU y Panamá. **Invited Talk.** *Panama/US Workshop in support of the LSAMP-NICE Center of Excellence, Panama City, Panama 25 February – 2 March, 2019.*

- Galindo, Ed., and **Jessica L. Black**, 2018. Working with ‘gatekeepers’. *Mentoring Our Own Native Scientists (MOONS) Workshop, Haskell Indian Nations University, Lawrence, KS, 18 - 21 September, 2018*.
- Black, Jessica L., and Celestino Mariano Gallardo**, 2018. El sistema tradicional sobre tenencia y nuestros derechos territoriales, áreas comunitarias protegidas como manejo y régimen de conservación, derechos indígenas inter-legalidades. **Invited Talk.** *Centre for Indigenous Conservation and Development Alternatives (CICADA), Fusagasugá, Colombia, 21-26 October, 2018*.
- Stampfer, Orly, **Aiyana Holt-Zack** (HU ENSC student), and Mansel Nelson, 2017. High School Citizen Science Curriculum to Address Indoor and Outdoor Air Pollution at the ACTEM. *Alaska Tribal Conference on Environmental Management, November 14-17, 2017, Anchorage, AK*. Oral Presentation. \*Part of EPA Grant to C. Karr and J. Black.
- Black, Jessica L.**, 2017. Indigenous Environmental Science on the Columbia River Plateau. **Invited Talk.** *Session T105 Building an Inclusive Geoscience Community Today for Tomorrow II, Geological Society of America National Conference, Seattle, WA October 24, 2017*.
- Black, Jessica L.** and Catherine Karr, 2017. Yakama PM2.5 Issues, Wood Smoke and Research. **Invited Talk.** *Tribal - EPA Region 10 Biennial FARR Meeting, Seattle, WA, October 16-18, 2017*.
- Black, Jessica L.**, 2017. Integrando el Conocimiento Tenologico Tradicional con la Education de Las Ciencias del Medio Ambiente – Proyectos en Washington (EEUU) y Panamá. **Invited Talk.** *Conferencia: Experiencias de Investigaciones Ambientales en Poblaciones Indígenas de Universidades Norte Americanas, La Oficina de los Pueblos Indígenas (OPINUP) de la Universidad de Panamá, 16 de junio de 2017, Panama City, Panama*.
- Black, Jessica L.**, 2017. Human Resources for a New Agriculture: Educating a More Diverse, Capable, and Resilient Workforce for the Era of Climate Change. *USDA Hispanic Serving Institutions Principal Investigators Meeting: Workforce Diversity and Career Opportunities within the USDA, February 16- 18, 2017, Albuquerque, NM*. Poster.
- Black, J.L.** and Sonoda, K., 2016. Community-based undergraduate research as a mechanism for facilitating collaboration in response to a changing climate. Session: G-13 Role of Minority-Serving Institutions in Engaging and Empowering Communities in Sustainable Water Resource Stewardship. *Association for Environmental Studies and Sciences (AESS) 2016 Conference, Washington, D.C., Session Convener. June 8-11, 2016*.
- Black, Jessica L.**, 2015. Human Resources for a New Agriculture: Educating a More Diverse, Capable, and Resilient Workforce for the Era of Climate Change. *USDA Hispanic Serving Institutions New Principal Investigators Meeting. December 16- 18, 2015, Washington, D.C.* Poster.
- Black, J.L.**, 2015. Developing Multi-Faceted Tribal/University Partnerships for Research, Education and Workforce Development. **Invited Talk.** *National Indian Education Association (NIEA) Conference, Portland, OR, October 14-17, 2015*.
- Black, J.L.**, 2015. Presented to Congressman Dan Newhouse on HU Environmental and agriculture programs and research initiatives, March 30, 2015.
- Black, J.L.** and Sonoda, K., 2015. Maximizing University Assets to Engage and Retain Hispanic and Native American Students in Culturally Responsive, Community-based Research: Biochar as a Soil Amendment for a Water-stressed Agricultural Community. In Session D-2 Utilizing Experiential Learning to Engage Underrepresented Minority Students in the Environmental and Natural Resources Fields. *Association for Environmental Studies and Sciences (AESS) 2015 Conference, San Diego, CA, Session Convener. June 24-27, 2015*.



- Isaac, D., Ramirez, F., Billy, J., **Black, J.**, Sonoda, K., 2015. Utilizing Biochar to Mitigate Nitrate Leaching and Increase Crop Yield in South Central Wa. 2015. *American Association for the Advancement of Science (AAAS) Annual Meeting 12-16 February, 2015*. Poster.
- Black, J.L.**, 2014. Environmental Science and Studies Programs at Heritage University – Undergraduate Research. **Invited Presentation:** *The Leadership Alliance, Heritage University November 17, 2014*.
- Billy, J.D., Isaac, D., Ramirez, F., **Black, J.L.**, Sonoda, K., 2014. Biochar: Nitrate mitigation of field drain water in the Lower Yakima Valley. *2014 American Indian Science and Engineering Society (AISES) National Conference*. Poster.
- Isaac, D., Ramirez, F., Billy, J., **Black, J.**, Sonoda, K., 2014. Utilizing biochar to mitigate nitrate leaching and increase crop yield in south central Washington State. *2014 American Indian Science and Engineering Society (AISES) National Conference*. Poster.
- Ramirez, F., Isaac, D., Billy, J., **Black, J.L.**, Sonoda, K., 2014. Assessing Efficiency of Biochar as a Mediator for Nitrate Leaching in Soils. *2014 American Indian Science and Engineering Society (AISES) National Conference*. Poster.
- Black, J.L.**, 2014. People of the Big River Field Class and Native American Initiatives at Heritage University. **Invited Talk:** *Heritage University Board Meeting October 24, 2014*.
- Black, J.L.**, 2014. Environmental Science and Studies Programs at Heritage University. **Invited Talk.** *Heritage University Board Meeting October 23, 2014*.
- Black, J.L.** and Sonoda, K., 2014. Minority youth-centered environmental education activism in rural Indian Country. **Panel Presentation Chair.** *Association for Environmental Studies and Sciences (AESS) 2014 Conference, New York, NY, Session Convener. June 11-14, 2014*.
- Black, J.L.**, 2014. Immersive Field Course Integrating Culturally-Based Traditional Ecological Knowledge with Environmental Science Education: Heritage University. *Yes We Must Coalition National Conference – “Fulfilling Our Responsibility: Higher Education for the New Student Majority”, Northbrook, IL, April 23-25, 2014*. Poster.
- Black, J.L.**, 2014. People of the Big River: Environmental Science and Culturally-Based Activist Education. **Invited Talk:** *15<sup>th</sup> Annual American Indian Studies Association (AISA) Conference – “Activism: Continuity, Resistance, Obligation”, Arizona State University, Tempe, AZ, February 6-7, 2014*.
- Black, J.L.**, 2013. People of the Big River Field Class. **Invited Talk.** *Heritage University Board Meeting October 18, 2013*.
- Black, J.L.**, 2013. Diatoms as Environmental Indicators. **Invited Talk.** *Geological Sciences Department, Central Washington University, Ellensburg, WA, March 24, 2013*.
- Quesada, B.; Sylvestre, F.; Vimeux, F.; **Black, J.**; Paillès, C.; Sonzogni, C.; Alexandre, A.; Blard, P. H.; Bruneton, H., 2013. Diatom-inferred  $\delta^{18}\text{O}$  of a Bolivian paleolake during the last deglaciation (18.6-11.7 ka): Impact of paleolake evaporation and water recycling on the isotopic composition of Andean glaciers. *European Geosciences Union General Assembly 2013, Vienna, Austria. id. EGU2013-4965*. Poster.
- \*Awarded European Geosciences Union 2013 Outstanding Student Poster (OSP) Award
- Black, J.L.**, 2012. The role of diatoms in paleoenvironmental research - Reconstruction of paleoenvironmental changes from Pingualuit Crater Lake sediments during glacial-interglacial cycles – A case study. **Invited Talk.** *Geography Department, Worcester State University, Worcester, MA*.
- Black, J.L.**, 2011. The role of diatoms in paleoenvironmental research. **Invited Talk.** *Department of Marine and Ecological Sciences, Florida Gulf Coast University, Fort Meyers, FL*.
- Black, J.L.**, S. Hausmann, R. Pienitz, G. St-Onge, H. Guyard, V-P. Salonen, M. Lavoie, L. Cunningham,

- P. Rosen, A.M. Girard-Cloutier, and T. Luoto, 2011. Reconstruction of paleoenvironmental changes from Pingualuit Crater Lake sediments during glacial-interglacial cycles MIS 1 to MIS 8: a long-term terrestrial record from the Canadian Arctic. **Invited Talk.** *Department of Geology and Meteorology, Central Michigan University, Mount Pleasant, MI.*
- Black, J.L.,** S. Hausmann, R. Pienitz, G. St-Onge, H. Guyard, V-P. Salonen, M. Lavoie, A.M. Girard-Cloutier, and T. Luoto, 2010. Reconstruction of paleoenvironmental changes from Pingualuit Crater Lake sediments during glacial-interglacial cycles MIS 1 to MIS 8: a long-term terrestrial record from the Canadian Arctic: *European Geosciences Union General Assembly 2010, Vienna, Austria.* Poster.
- Black, J.L.,** Sonja Hausmann, Reinhard Pienitz, Veli-Pekka Salonen, Guillaume St-Onge, Michel Bouchard, Laura Cunningham, Pierre Francus, and Michel Lamothe, 2009. The "Crystal Eye of Nunavik" (Pingualuit Crater Lake): Diatom inferred paleoenvironmental record for three previous interglacial periods. *North American Diatom Symposium 2009, Iowa Lakeside Laboratory, Milford, IA.* Poster.
- Jessica L. Black,** S. Hausmann, R. Pienitz, G. St-Onge, V-P. Salonen, M.A. Bouchard, L. Cunningham, P. Francus, M. Lamothe, H. Guyard, N. Gantner, A-M. Girard-Cloutier, I. Larocque, M. Lavoie, T. Luoto, W. Michaud, D. Muir, M. Power, J. Reist, P. Rosen, J. Veillette, W. Vincent, B. Zolitschka, R. Niederreiter, 2010. A paleoenvironmental reconstruction of Pingualuit Crater Lake sediments: A long-term record in the terrestrial Canadian arctic spanning more than 200,000 years. *PAGES 1<sup>st</sup> Young Scientists Meeting and 3<sup>rd</sup> Open Scientists Meeting July 6-11 2009, Corvallis, OR.* Poster.
- Black, J.L.,** Hausmann, S., Pienitz, R., 2009. Analysis of diatom assemblages of the three most recent interglacial periods from Pingualuit Crater Lake sediments, northern Québec. **Invited Talk.** Lakes and Environmental Change Symposia: Northeast Geological Society of America, Portland, ME.
- Black, J.,** Miller, G., Geirsdottir, A., 2007. A multi-proxy lacustrine reconstruction from Hvítárvatn, of Holocene fluctuations of an ice cap margin in south-central Iceland. **Invited Talk.** *Department of Geosciences, University of Arkansas, Colloquium Series.*
- Black, J.,** Miller, G., Geirsdottir, A., 2006. Diatoms as proxies for a fluctuation Holocene Ice Cap margin in Hvítárvatn, Iceland. *American Geophysical Union Fall Meeting 2006.* Talk.
- Black, J.,** Miller, G., Geirsdottir, A., 2006. Diatoms as proxies for a fluctuation Holocene Ice Cap margin in Hvítárvatn, Iceland. *36<sup>th</sup> International Arctic Workshop, 2006.* Talk.
- Black, J.,** Miller, G., Geirsdottir, A., 2005. Hvítárvatn warm times. *Iceland Warm Times/Cold Times Project Meeting 25-26 February 2005 Boulder, CO.* Talk.
- Black, J.,** Miller, G., Geirsdottir, A., 2005. Diatoms as proxies for a fluctuating ice cap margin, Hvítárvatn, Iceland. *American Geophysical Union Fall Meeting 2005.* Poster.
- Black, J.,** Miller, G., Geirsdottir, A., 2005. Investigation Holocene climate change in glacial lake Hvítárvatn, Iceland. *35<sup>th</sup> International Arctic Workshop, 2005.* Poster.
- Black, J.,** Miller, G., Geirsdottir, A., 2004. Sediment thickness and Holocene erosion rates derived from a seismic survey of Hvítárvatn, central Iceland. *American Geophysical Union Fall Meeting 2004.* Poster.
- Black, J.,** Miller, G., Geirsdottir, A., 2004. Investigation Holocene climate change in glacial lake Hvítárvatn, Iceland. *34<sup>th</sup> International Arctic Workshop, 2004.* Poster.
- Black, J.,** Miller, G., Geirsdottir, A., 2003. Investigation the Holocene Thermal Maximum in Iceland. *33<sup>rd</sup> International Arctic Workshop, 2003.* Poster.
- Black, J.,** Miller, G., Geirsdottir, A., 2002. A seismic analysis of Hvítárvatn, Iceland to determine dominant sediment sources into the glacial lake basin during the Holocene. *Geological Society of America Annual Meeting, 2002.* Poster.
- Black, J.,** 2001. Investigating the Little Ice Age in the Southern Alps of New Zealand. *Geological Society of America 2001 NE Section 36<sup>th</sup> Annual Meeting.* Talk.

**Black, J., 2000.** Can a Little Ice Age Climate Signal be Detected in the Southern Alps of New Zealand? *American Geophysical Union Fall Meeting 2000*. Poster.

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#### PUBLISHED NEWS ARTICLES RELATED TO PROJECTS

Kerndl, Angela, October 13, 2021. Heritage University expanding STEM studies throughout Yakima Valley. *KIMA*. <https://kimatv.com/news/local/heritage-university>

Sunnyside Sun, October 13, 2021. Heritage University receives \$4.5 million grant. Funds to expand STEM studies in the Yakima Valley. *Sunnyside Sun*. [https://www.sunnysidesun.com/news/heritage-university-receives-4-5-million-grant/article\\_5660d87e-2c5a-11ec-9971-eb139631673a.html](https://www.sunnysidesun.com/news/heritage-university-receives-4-5-million-grant/article_5660d87e-2c5a-11ec-9971-eb139631673a.html)

Ontiveros, Vanessa, October 8, 2021. Heritage University awarded \$4.5 million to improve Yakima Valley STEM education. *Yakima Herald-Republic*. [https://www.yakimaherald.com/news/local/heritage-university-awarded-4-5-million-to-improve-yakima-valley-stem-education/article\\_8c42f4b4-e8a3-5445-9a7a-fe7574fbdcf2.html](https://www.yakimaherald.com/news/local/heritage-university-awarded-4-5-million-to-improve-yakima-valley-stem-education/article_8c42f4b4-e8a3-5445-9a7a-fe7574fbdcf2.html)

Wyman, Michelle, October 2021. GCSE Member of the Month Heritage University. *Global Council for Science and the Environment (GCSE)*. <https://www.gcseglobal.org/member-month>

Flatt, Courtney, June 23, 2020. In Toppenish, A Trail Cam Zooms In On Unique Learning Opportunity For Yakama Nation Students. *Northwest Public Broadcasting*. <https://www.nwpb.org/2020/06/23/in-toppenish-a-trail-cam-zooms-in-on-unique-learning-opportunity-for-yakama-nation-students/>

Oneill, Eilis, March 4, 2020. Students Want to Fix Air Quality For People With Asthma On the Yakama Reservation. *National Public Radio*. <https://www.npr.org/2020/03/04/810560869/students-want-to-fix-air-quality-for-people-with-asthma-on-the-yakama-reservatio>

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#### INDIGENOUS LEADERSHIP SPEAKER SERIES ORGANIZED TALKS

As Director of Center for Indigenous Center for Indigenous Health, Culture & the Environment, an annual series speakers series is organized. Series was paused during COVID and is restarting in 2023.

Mary Jo Ondrechen, PhD. Using Chemistry to Understand Genomic Data. March 2nd 2020. Smith Family Hall. YNTS students present.

*\*Additional scheduled talks for Spring 2020 were cancelled due to COVID-19 restrictions.*

HollyAnna CougarTracks DeCoteau Littlebull, Plastics from Trash to Art, November 21st, 2019. Smith Family Hall. YNTS Students Present.

Stephany RunningHawk Johnson, iNATURE Conversations: Positives and Possibilities for Decolonization and Nation-Building. October 24th, 2019. Smith Family Hall. YNTS Students Present.

Victoria Walsey-Honanie, Coming Full Circle. Reflections from a first generation Yakama/Warm Springs, PhD on climate change and effects on Indigenous Knowledge Systems. April 18th, 2019. Smith Family Hall. YNTS Students Present.

Karlen Yallup, Environmental Health Through Law and Policy. February 21st, 2019. Smith Family Hall. YNTS Students Present.

Jonalee Squeochs, Yakama Nation Climate Change Plan - Preparing for the Future. January 17th, 2019. Smith Family Hall. YNTS Students Present.

Haver Jim, Heritage University Alumnus, Senior Customer Service Representative, Yakama Power. November 15<sup>th</sup>, 2018. Smith Family Hall. YNTS Students Present.

Tia Beavert, Managing Home Protection and Enhancement of the Yakama Forest From A First Generation Woman Forester. September 27, 2018. Smith Family Hall. YNTS Students Present.

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## PROFESSIONAL WORKSHOPS, CONFERENCES AND SHORT-COURSES

2022

2021

2020

2019 Comarca Research Alliance Meeting, San Félix, Panama, June 8-11, 2019. Sponsored by CIHCE at Heritage University and CICADA at McGill University.

2019 EnvironMentors National Fair, June 1-4, 2019. Washington, D.C.

- 3 White Swan High School students presented research posters at conference.

2019 Ngäbe Bugle Comarca Organic Farming workshop, Comarca Ngäbe Bugle, Panama. December 5, 2018.

2018 EnvironMentors National Fair, May 31-June 2, 2018. Washington, D.C.

- 3 White Swan High School students presented research posters at conference.

2017 American Indian Science and Engineering Society (AISES) National Conference. November 13-15, 2014. Denver, CO.

- 6 Heritage University Environmental Science and Studies (ESS) students presented research posters at conference.

2017 EnvironMentors National Fair, June 1-3, 2017. Washington, D.C.

- 4 White Swan High School students presented research posters at conference.

2016 American Indian Science and Engineering Society (AISES) National Conference. November 13-15, 2014. Minneapolis, MN.

- 5 Heritage University Environmental Science and Studies (ESS) students presented research posters at conference.

2016 EnvironMentors National Fair, June 8-10, 2016. Washington, D.C.

- 4 White Swan High School students presented research posters at conference.

2015 American Indian Science and Engineering Society (AISES) National Conference. November 13-15, 2014. Denver, CO.

- 5 Heritage University Environmental Science and Studies (ESS) students presented research posters at conference.

2015 EnvironMentors National Fair, May 31- June 2, 2015. Washington, D.C.

- 3 White Swan High School students presented research posters at conference.

2014 American Indian Science and Engineering Society (AISES) National Conference. November 13-15, 2014. Orlando, FL.

- 6 Heritage University Environmental Science and Studies (ESS) students presented research posters at conference.

2014 Climate Change Adaption Planning Training at the 2014 National Tribal Forum on Air Quality (NTF), sponsored by the Institute for Tribal Environmental Professionals (ITEP) and National Tribal Air Association (NTAA). May 12-15, 2014. Swinomish Indian Tribal Community, WA.

2014 EnvironMentors National Fair, May 17-20, 2014. Washington, D.C.

- 3 White Swan High School students presented research posters at conference.

- 2014 Asset-Based Community Development (ABCD) Training, Wintertalk. February 15-17, 2014. Tulalip Resort Casino, Marysville, WA.
- 2013 22<sup>nd</sup> North American Diatom Symposium, August 13-16, 2014. College of the Atlantic, Bar Harbor, ME.
- 2013 Short Course: Analysis of Ecological and Palaeoecological Data with R, August 8-12, 2014. Taught by Dr. Steve Juggins (Newcastle University). University of Maine, Orono, ME.
- 2013 Association for Environmental Studies and Sciences (AESS) National Conference – Linking Rural & Urban Societies & Ecologies, June 19-22, 2013. Pittsburgh, PA.
- 2013 Northwest Biology Instructors' Organization (NWBIO) Conference, May 3-4, 2013. Tri-cities, WA.
- 2013 EnvironMentors National Fair, May 19-22, 2013. Washington, D.C.
- 2012 Association of American Colleges and Universities (AAC&U) Annual Conference, November 8-10, 2012, Kansas City. MO. Next Generation STEM Learning: Investigate, Innovate, Inspire.
- 2012 Washington Science Teachers Association (WSTA) 2012 Conference, October 19-21, 2012, Yakima, WA. Where Science, Technology, Engineering and Math Meet.
- 2012 SACNAS (Society for Advancement of Chicanos and Native Americans in Science) National Conference, October 11-14, 2012, Seattle, WA.
- 2012 Traditional Knowledge and Healthy Ecosystems Summit, August 29-31, 2012. Skamania Lodge, Columbia River Gorge, WA.
- 2012 Northwest Biology Instructors' Organization (NWBIO) Conference. April 27-29, 2012. Everett Community College, WA.
- 2012 Intertribal Timber Council Meeting, Yakama Nation. April 2012.
- 2012 Curriculum for the Bioregion Ellensburg Regional Conference February 24, 2012. Central Washington University. Strengthening Sustainability-across-the-Curriculum on Our Campuses.
- 2007 Postdoctorate Preparation Workshop April 16-18, 2007 hosted by the National Center for Atmospheric Research (NCAR) and University of Colorado Diversity Initiative.
- 2005 University of Iowa, Lakeside Laboratory: Analysis of Environmental Data by S. Juggins.
- 2005 VECO Polar Resources Learn to Return (LTR) Arctic Safety and Survival Course.
- 2004 University of Iowa, Lakeside Laboratory: Ecology and Systematics of Diatoms Intensive Field and Laboratory Class by Sarah Spaulding and Mark Edlund.
- 2002 University of Massachusetts Amherst: Short Course on image analysis and construction of thin sections of unconsolidated varved sediments by Pierre Francus.
- 2000 NCAR, Boulder, CO: Holocene Thermal Maximum Workshop for Paleoenvironmental Arctic Sciences (NSF-PARCS). Member and workshop participant.
  - Resulting paper: Kaufman, D., et al., 2004. Holocene thermal maximum in the western Arctic (0–180 W), *Quaternary Science Reviews*, v.23 (5-6), p. 529-560.

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## FIELD EXPERIENCE

- 2016 – **Ngäbe-Bugle Comarca, Panama.** Micro-entrepreneurial and environmental science research projects with Traditional Congress of Ngäbe-Bugle within three regions of their comarca.
- 2012-14 **Toppenish Creek, Yakima County, WA:** Sampling of benthic macroinvertebrates and diatoms found in local creeks for ecology lab and as part of long term study.

- 2011 **Florida freshwater lakes:** Collection of surface sediment samples and sediment cores of lakes for development of water quality index of Florida lakes.
- 2011 **Clam Bayou Estuary, Gulfport, FL and Tera Ceia Bay, Manatee County, FL:** Assisted in collection of sediment and water samples for analysis of PAH pollution study for MS student project.
- 2011 **Gum Slough Spring Run, Half Moon Wildlife Management Area, FL:** assisted in collection of algal samples for evaluation of minimum flow levels.
- 2009 **Beaver Reservoir, northwest Arkansas:** Assisted in deployment of limnocorral for assessment of MIB production in the reservoir for PhD student project.
- 2008 **White River flood plain, eastern Arkansas:** Project manager for oxbow lake coring expedition to recover Holocene paleo-flood record using UWITEC piston percussion coring system for PhD student project.
- 2008 **White River flood plain, eastern Arkansas:** Sampling of surface sediments and water chemistry of oxbow lakes during 100-year flood event (March-April, 2008) for PhD student project.
- 2007 **Weston Lake, Congaree National Park, South Carolina:** Lake coring of oxbow lake for PhD student project.
- 2003 **Hvítárvatn, Iceland:** Summer lake coring as part of GLAD4 drilling project, PhD
- 2002 **Hvítárvatn, Iceland:** Winter lake coring – recovered a series of short Nesje cores, PhD
- 2000 **Hooker and Mueller Glacier Valleys, Mount Cook National Park, New Zealand:** Glacial geomorphic mapping and development of Late Holocene lichenometric chronologies for two glacier valleys, MS
- 2000 **Lapland, northern Sweden:** Chronological study of three glaciers in Lapland with Prof. Wibjörn Karlén. Work based out of Tarfala and Abisko Scientific research stations, MS
- 2000 **Southern Maine Coast,** Maine Geologic Survey: Mapped bluffs along the coast of Maine to determine slope stability and potential for erosion and damage to structures.
- 1998 **Washington State:** Geologic Field Mapping, Pacific Lutheran University.
- 1997 **North Cascades National Park, WA.** Geology Intern: Assisted National Park Geologist Jon L. Riedel developing methodology for mass balance monitoring of small alpine glaciers.
- 1997 **Mount Rainier, WA:** Archaeology Field Experience, Pacific Lutheran University.
- 1996 **Bird Spring Range, Utah:** Field Geology, Massachusetts Institute of Technology.

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#### ADVISORY COMMITTEES AND BOARDS

October 2022 – Present	Hanford Advisory Board (HAB) *Invited
October 2020 - Present	American Geophysical Union (AGU) Land Acknowledgement Working Group. *Invited
June 2020 – Present	American Indian Science and Engineering Society (AISES) Academic Advisory Council. *Invited
Fall 2012 – Present	Board Member, Yakima Area Arboretum

June 2014 – 2020	National Council for Science and the Environment (NCSE) EnvironMentors Program Board Member *Elected
October 2014 – 2019	Director's Council Member, National Science Foundation's (NSF) Alliance for Graduate Education in the Professoriate (AGEP) Transformation Grant: <i>Pacific Northwest Circle of Success for Mentoring Opportunities in STEM (PNW COSMOS)</i> * Invited
March 2015 – 2019	Lower Yakima Valley Groundwater Management Area (GWMA) Advisory Committee (GWAC) Member * Invited
June 2014 – May 2015	National Planning Committee, NCSE EnvironMentors Program Strategic Planning for 2015-2018 Program Years * Invited
April 2014 – January 2016	Washington State Department of Health Neural Tube Defects Cluster Advisory Committee * Invited
2012	Education Committee Member: Cowiche Canyon Conservancy

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## SERVICE

2012-2015, 2019-2023	Act Six Leadership and Scholarship Initiative Committee
2013-2016	Washington Science Olympiad – Event Supervisor
2012-2018	El Proyecto Bienestar – CORE member (Community partnership between: Heritage University, UW PNASH – Pacific Northwest Agricultural Safety and Health Center, Radio KDNA, Yakima Valley Farmworker's Clinic)

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## ENVIRONMENTAL EDUCATION POSITIONS

10/98-12/98, 9/94-5/96	<b>Greenhouse Intern</b> <i>Friends of Horticulture, Wellesley College Greenhouse, Wellesley, MA</i>  Assisted head of arboretum in maintaining 22-acre botanical gardens, groomed greenhouse, and studied ecological landscaping and horticulture through practical experience. Provided guided tours of arboretum and greenhouse.
Summer 1999	<b>Volunteer Interpretive Ranger (Student Conservation Association -Conservation Career Development Program: SCA-CCDP)</b> <i>Knife River Indian Villages National Historical Site, Stanton, ND</i>  Interpretive ranger at the KNRI Visitor Center. Educated visitors on the Earth Lodge Reconstruction and archeological sites, native cultures of the Upper Missouri River, and the travels of Lewis and Clark.
Summer 1996	<b>Volunteer Ridgerunner, (SCA-CCDP)</b> <i>Appalachian Mountain Club CT and MA Corridor</i>  Patrolled for extended periods on the Appalachian Trail as a ranger. Duties included trail maintenance, medical support and education. Focused on minimum impact and Leave No Trace education.
Summer 1995	<b>Volunteer Backcountry Ranger (SCA-CCDP)</b> <i>North Cascades National Park, Marblemount, WA</i>

Maintained hiking trails, managed vegetation and wildlife at Cascade Pass, provided medical support and outdoor education. Trained in snow and ice travel, Wildland Fire-fighting red card.

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#### GRANT REVIEWER

Served on multiple grant review panels for federal agencies. In order to preserve confidentiality, only the agencies are noted.

National Science Foundation  
USDA

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#### JOURNAL ARTICLE REFEREE

Diatom Research  
Canadian Journal of Fisheries and Aquatic Sciences  
Frontiers: The Interdisciplinary Journal of Study Abroad  
Holocene  
Journal of Paleolimnology  
Quaternary Science Reviews

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#### PROFESSIONAL MEMBERSHIPS

American Geophysical Union (AGU), since 2000  
Geological Society of America (GSA), since 2000  
American Association for the Advancement of Science (AAAS), since 2005  
International Society for Diatom Research (ISDR), since 2005  
Native American and Indigenous Studies Association (NAISA), since 2019  
Association for Environmental Studies and Sciences (AESS), since 2015  
American Indian Science and Engineering Society (AISES), since 2015