

# CHRISTINE LIEBE, Ph.D.

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## Skills Summary

Educational Researcher, Project Evaluator, Education Professor, K-12 Licensed Teacher (Elementary, Science, Language Arts), Online course design, Curriculum Alignment, Assessment evaluation and development, Learning Disabilities Curriculum Consultant, Computer Science / STEM Educator, Data and analytical experience in Excel – SQL – SPSS – Nvivo – Python – C++

## Education

**PHD EDUCATION: CURRICULUM, INSTRUCTION, ASSESSMENT / APRIL 2019**  
WALDEN UNIVERSITY

**MS EDUCATION: LITERACY / AUGUST 2008**  
WALDEN UNIVERSITY

**BA DUAL MAJOR PSYCHOLOGY & URBAN POLICY: RUSSIAN MINOR / JUNE 1989**  
JAMES MADISON COLLEGE AT MICHIGAN STATE UNIVERSITY

## Teaching Experience

### **Douglas County School District**

*K-12 Substitute Teacher / January 2019 to present*

Assisting in elementary through high school classrooms substituting for classroom teachers.

### **Colorado Mountain College**

*Adjunct Professor / March 2009 to May 2019*

Teaching and designing introductory education and introductory computer science courses (Blackboard and Canvas). Taught EDU 222 (Effective Education, a course required for all CMC faculty), EDU 131 (Introduction to Adult Education), EDU 132 (Planning and Delivering Instruction to Adult Learners), EDU 133 (Adult Basic and Adult Secondary Education). Taught developmental education reading and writing courses, advanced ELL (TOEFL Preparation), and high school equivalency courses. Provided in person and online faculty development related to learning disabilities and open educational resources. Served on curriculum committees.

### **Roaring Fork School District**

*Elementary Computer Science Teacher / January 2015 - May 2015*

Designed and taught an after school Scratch course for 3<sup>rd</sup> graders.

## **Aspen High School**

*Literacy Specialist / August 2012 - June 2013*

Designed and taught reading and writing support classes for high school students. Supported staff with instructional suggestions and modifications for literacy-challenged students. Proctored and managed student literacy assessments and data.

## **Glenwood Springs Middle School**

*Science Teacher / August 2008 - June 2009*

Taught science, math, and technology integrated in 7<sup>th</sup> grade Life and Earth Sciences. Supervised yearbook staff. Served as liaison with the English language teachers and 7<sup>th</sup> grade faculty. Developed data-driven math assessments with faculty teams then tracked student schedules for all 7<sup>th</sup> grade math and language arts.

## **Research & Administrative Experience**

### **Colorado School of Mines**

*Postdoctoral Fellow - CS Education Research / April 2019 to present*

Co-author and co-PI on NSF grant proposals (four submitted, one pending, two more drafted) investigating K-12 and undergraduate computer science topics. Responsible for proposal research, writing, evaluation, and submission. K-12 district computer science support and outreach. Program manager for PATHS S+STEM Scholarship program. Evaluator for the Englewood School District (in Colorado) 2019-20 STEAM education initiative. Teach@Mines Computer Science pre-service teacher advisor.

### **National Science Foundation**

*AISL Review Panelist / January 2019*

Served as a reviewer with a national team and evaluated Advancing Informal STEM Learning (AISL) program proposals.

### **STARS Computing Corps.**

*Evaluation Assistant / August 2014 to August 2015*

Provided data collection and analysis for computer science recruiting and teaching.

### **Colorado Mountain College**

*Curriculum Coordinator / January 2010 - June 2013*

Programmed courses, led and facilitated meetings, trained staff and faculty, wrote grants, approved syllabi, supervised student registration and orientation. Served on curriculum alignment committees, Analyzed student trends and suggested responsive marketing strategies. Promoted developmental education in the community.

## **Colorado Mountain College**

*Special Needs Learning Coordinator / July 2011 to June 2015*

Provided curriculum support for instructors teaching students with learning disabilities. Trained faculty, staff, and community members to begin offering accommodations (not modifications) for learning disabilities.

## **Lotus Education Institute / Lotus Education LLC**

*CEO - Founder / June 2013 to present*

Founded and designed a private occupational school offering a 500-hour Professional Massage Therapy Certification program (in person and hybrid using Canvas). Designed and maintain website and marketing efforts. Manage accounting, recruiting, enrollment, financial aid, and teacher training. Teaching massage therapy techniques, anatomy, physiology, pathology, business, and ethics. Licensed and bonded. Lotus Education LLC provides educational consulting and research services.

## **Awards and Acknowledgements**

### ***Don E. Ackerman Fellowship / Walden University***

The Don E. Ackerman Research Fellowship in Educational Leadership supports research that advances leadership in education through better understanding or practice.

### ***Summit Award 2011 / Colorado Mountain College***

Special recognition for contributions towards developmental education.

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Special recognition for contributions towards developmental education.

## **Publications**

Liebe, C., Camp, T. (2019). An Examination of Abstraction in K-12 Computer Science Education. In 19th Koli Calling International Conference on Computing Education Research (Koli Calling '19). Koli, Finland. ACM, New York, NY, USA, 9 pages <https://doi.org/10.1145/3364510.3364526>

Falkner, K., Sentence, S., Vivian, R., Barksdale, S., Busuttil, L., Cole, E., Liebe, C., Maiorana, F., McGill, M., Quille, K. (2019). An International Comparison of K-12 Computer Science Education Intended and Enacted Curricula. In Proceedings of Koli Calling '19: 19th Koli Calling International Conference on Computing Education Research (Koli Calling '19). ACM, New York, NY, USA, 10 pages <https://doi.org/10.1145/1122445.1122456>

Falkner, K., Sentence, S., Vivian, R., Barksdale, S., Busuttil, L., Cole, E., Liebe, C., Maiorana, F., McGill, M., Quille, K. (2019). An International Study Piloting the MEasuring Teacher Enacted Computing Curriculum (METRECC) Instrument. International Innovation and Technology in Computer Science Education (ITiCSE '19), Aberdeen, Scotland Uk. ACM, New York, NY, USA, 30 pages. <https://doi.org/10.1145/3304221.3325535>

Camp, T., Liebe, C., Slattery, M. (2020). Applying NCWIT Protocol to Broadening Participation in Computing: A Case Study of CS@Mines. Special Interest Group in Computer Science Education (SIGCSE 2020), Portland, OR. ACM, New York, NY, USA, 6 pages. [https://doi.org/ 10.1145/3328778.3366958](https://doi.org/10.1145/3328778.3366958)

Liebe, C. L. (2019). Dissertation: An Examination of Abstraction in K-12 Computer Science Education.

Liebe, C. (2017). Comparison of Abstraction in Computer Coding and in Critical Thinking. In P. Resta & S. Smith (Eds.), Proceedings of Society for Information Technology & Teacher Education International Conference 2017 (pp. 1394-1402). Chesapeake, VA: Association for the Advancement of Computing in Education (AACE).

## **Conference Presentations**

### ***Computer Science Teachers Association (CSTA) Conference***

*Instruction of Abstraction in K-12 Computer Science / July 2017*

### ***National Accuplacer Conference – The College Board***

*Critical Literacy Acquisition and Accuplacer Success / June 2011*

### ***Colorado Adult Educator and Professionals Association (CAEPA)***

*ESL Students and Learning Disabilities / October 2010*

### ***Colorado Teachers of English to Speakers of Other Languages (COTESOL)***

*Adult ELL's and Critical Literacy Acquisition / November 2011*

### ***International Asian TESOL Conference – Cebu, Philippines***

*Adult ELL's and Critical Literacy Acquisition / August 2011*

## **Service/Professional Organization**

*Vice President of Colorado Computer Science Teachers Association, January 2019 to present. Member since 2016.*

## **Academic Interests**

Transdisciplinary Computer Science curriculum, Computational thinking, K-12 Computer Science curriculum alignment Abstraction, Critical thinking in computer science education, Language acquisition and critical thinking, Comparison of learning language and learning computer science, High school and college retention

## Life Experience

- Single mother of a 23-year-old daughter (who graduated Phi Beta Kappa with three majors in 2018) and a 19-year-old son (who is a talented musician taking a gap year)
- Immigrant in Switzerland for 6 years, speak conversational German
- Raft guide in Vail, CO
- Skied Mt. Blanc and many other backcountry peaks
- Climb / lead 5.9 ish
- Avid gardener

## Additional Coursework

*Colorado Mountain College (1990-91)*

General Chemistry I & II, College Algebra

*Colorado State University (1992)*

Trigonometry, Principles of Human Anatomy and Physiology + Lab

*Wester State College (2002-2003)*

Meteorology, Design and 3D Concepts, Intro to Education and Multicultural Society

*Metro State College - Denver (2003)*

Intro to Physics