Melissa E. Holmes, Ed.D

Education and Licensure

Doctor of Education, Educational Leadership (Ed.D.), The University of Montana-Missoula. July 2016

Master of Science (M.S.), Computer Science, The University of Montana-Missoula. May 2007

Bachelor of Science (B.S.), Computer Science, Montana Tech. May 1996

Montana Class 4B Career and Technical Educator License SEID: 134773 Expires 2029
  Endorsements in Graphic Arts and Computer Information Systems (grades 5-12)

Professional Experience

Computer Science and Software Engineering Instructor, Montana Tech August 2022 – Present
Teach undergraduate Computer Science and Software Engineering (SE) courses, serve on campus Curriculum Review Committee and Web Guidance Committee, advise ACM club, conduct outreach, work on ABET review.

Computer Science Lecturer, The University of Montana August 2019 – July 2022
Taught undergraduate Computer Science courses, participated in faculty matters, and prepared departmental assessment report. Served on university curriculum committee and the Faculty Senate. Taught Java, Python, C/C++, full-stack web development, UI/UX, software engineering.

Assistant/Associate Professor of Computer Science, Rocky Mountain College August 2013 – May, 2019
Taught undergraduate Computer Science courses, advised students, evaluated and modified curricula, created new courses, wrote assessment reports, mentored new faculty, participated on campus committees, performed outreach and service, maintained teaching lab. Used/taught Java, HTML/CSS, JavaScript, PHP, MySQL, MacOS, Unix/Linux, Python, low-level C and Assembler, software engineering and systems design principles, UI/UX, Adobe Photoshop, Arduino and Raspberry Pi. Awarded tenure in June, 2019.

Adjunct Instructor, Montana Tech and Helena College August 2011 – May, 2013
Taught courses part-time for computing departments and programs at both schools.

Webmaster, Office of Marketing & Public Relations, Montana Tech June 2007 – August, 2012
Responsible for coordination of Montana Tech's web presence. Implemented the Cascade content management system for web development. Provided photography, videography and digital media for school functions and publications. Wrote web content and stories for MNews. Lead early social networking efforts for the school. Used Dreamweaver templates, Cascade Content Management System, HTML/CSS, JavaScript, ASP.NET, Adobe Photoshop and Premier, Windows Server.

Instructional Designer, Continuing Education, The University of Montana Oct. 2002 – June 2007
Helped launch the online learning program at UM by training and supporting faculty and interfacing between faculty/staff/administration to manage Blackboard LMS. Designed, implemented and assessed training curriculum for faculty. Served on ad-hoc committee for Office of Higher Education to assist statewide transferability initiative. Provided web development, needs assessment, training, technical support and program assessment for Montana Department of Corrections online training program.

IT Director, Rural Institute on Disabilities, The University of Montana March 1999 – Oct. 2002
Supervised IT staff in a large grant-funded organization. Responsible for web development, LAN/Web/Email servers, desktop support and grant writing tasks. Used Windows NT, Office, HTML/CSS.

Data Manager, Flathead Lake Biological Station, The University of Montana May 1997 – March 1999
Managed hardware, software and LAN/WAN network. Wrote successful technology grant. Developed requirements and prototype for a large long-term water quality database. Maintained web site. Mac / Windows servers, MS Office, SQL Server, HTML/CSS, specialized lab and GPS software.

Programmer/Analyst, Employee & Public Safety, The Montana Power Company April 1994 – May 1997
Designed and implemented a large database system to track Safety Information, with data feeds from Claims, Accounting, and Personnel departments. Prepared data and reports for management, power organizations and governmental agencies. Implemented online safety policies using Windows Help files.

Programmer/Analyst Intern, Computer Services, The Montana Power Company Summer 1993
Ported many small mainframe databases to PC relational database system.

Teaching Experience

Montana Technological University   August 2022 - Present
    CSCI 102 Computational Thinking   CSCI 440 Database Systems
    CSCI 112 Programming in C   CSCI/ESOF 494 Senior Seminar
    CSCI 194 Freshman Seminar   ESOF 322 Software Engineering
    CSCI 135/135 Fundamentals of CS I & II   ESOF 411 Verification & Validation
    CSCI 210 Web Programming   ESOF 427 Software Design and Architecture
    CSCI 305 Programming Language Concepts   ITS 130 Cybersecurity Essentials
    CSCI 232 Data Structures & Algorithms   ITS 210 Network Operating Systems
    CSCI 323 Algorithm Design and Analysis   MART 145 Web Design
    CSCI 361 Computer Architecture   PHOT 154 Digital Photography Essentials

Montana State Prison   August – October 2021
    Adult Basic Education classes to prepare inmates for the HiSET high school equivalency exam

The University of Montana – Missoula   Fall 2019 – Summer 2022
    CSCI 136 / 152 Fundamentals of / Interdisciplinary Computer Science II (Java)
    CSCI 205 Programming in C/C++
    CSCI315E Computers, Ethics and Society
    CSCI 322/411 Advanced Web Application Development
    CSCI 323 Software Science
    CSCI 391 ST: Object-Oriented Programming Concepts (Java)
    CSCI 443 / 543 User Interface Design / Human-Computer Interaction
    EDLD 519 Measurement and Analysis of Educational Data
    EDLD 586 Strategic Planning for Technology
    MBA 655 Technology Seminar: Graduate Python

Montana Summer Art Academy (ages 8 – 14)   Summers, 2016 -2018
    15-hour classes in Web Design, Graphic Arts, Digital Imagery, Robotics

Rocky Mountain College   2013 – 2019
    ART 180 ST: Introduction to Digital Art   CSC 313 Designing User Interaction
    CSC 130/131 Fundamentals I and II (Java)   CSC 335 Database Systems
    CSC 214 Technology and Society   CSC 344 Programming in C & Assembler
    CSC 251 Data Structures (Java)   CSC 357 Software Engineering
                                          CSC 360 Programming Paradigms

Montana Tech and Helena College   2011 – 2013
    CSCI 100 Introduction to Programming (C#)
    CSCI 110 Programming in Visual Basic
    CSCI 321 Systems Design Process
    CSCI 443 User Interface Design
    CAPP 131 Basic Microsoft Office
    CT 161   Web Graphics Design

Continuing Education, The University of Montana – Missoula   2002 – 2007
    Faculty Development Workshops for Instructional Design and Online Learning

The University of Montana – Missoula   1999 – 2004
    CS 171 Communicating Via Computers
    CS 172 Introduction to Computer Modeling
    CS 295 Programming Interactive Web Sites (created this class)
    CS 435 Web Server Programming

Publications

Holmes, M.E. (2016). Practices and Perceptions of Social Media Among Leaders in Higher Education: A Quantitative Study, The University of Montana, Missoula MT, USA. Retrieved from https://scholarworks.umt.edu/etd/10740/

Holmes, M. E. (2011, Fall). Hair Today, Gone Tomorrow. *MNews,* pp. 18-19.

Holmes, M.E. (2011, Summer). Love in Scrubs. *MNews,* pp. 25-26.

Holmes, M. E. (2010, Fall). Friends, Friends & More Friends. *MNews*, pp. 20-21.

Holmes, M.E. (2010, Summer). Blue Angels. *MNews*, pp. 10-11.

Holmes, M. E. (2009, Fall). From Field to Flight. *MNews*, pp. 12-13.

Holmes, M. E. (2009, Chancellor's Edition). Native Plant Diversity Nursery Project. *MNews*, pp. 14-15.

Holmes, M. E. (2009, Summer). Making a Difference. *MNews*, pp. 20-21.

Holmes, M. E. (2008, Summer). Graduation 2008. *MNews*, pp. 18-19.

Holmes, M.E. (2007). Developing Electronic Portfolio Software for Program Assessment. The University of Montana, Missoula MT, USA. Retrieved from https://scholarworks.umt.edu/etd/307/

Reimer, Y.J., and Holmes, M. (2004). Developing Electronic Portfolio Software for Assessment Purposes. In *Proceedings of the Grace Hopper Celebration of Women in Computing*, Chicago, IL, October 2004.

Holmes, M. (2002). Online Learning Interfaces: Framework and Components. In *Proceedings of the Grace Hopper Celebration of Women in Computing*, Vancouver, B.C., Canada, October 2002.

Holmes, M. E. and G. C. Poole (1998). Management of a long-term water quality database: FlatDat for the Flathead Lake Biological Station. In: *Data and Information Management in the Ecological Sciences: A Resource Guide*. W.K. Michener, J.H. Porter and S.G. Stafford, eds. University of New Mexico, Albuquerque.

Academic Awards

Alumni Recognition Award, Montana Tech, 2013

Best Presentation Award, Graduate Student Research Conference, The University of Montana, 2005

Outreach and Service Activities

- Montana Tech Curriculum Review, Web Guidance Committee, Employee Relations Committee (present)
- Hosted ACM ICPC programming contests at Montana Tech, 2002, 2003
- UM Academic Standards and Curriculum Review Committee (2020 – 2021)
- UM Faculty Senate Representative (2020-2021)
- UM Franke Global Leadership Initiative capstone mentor (2020-2021)
- Worked with OPI committee to review the PRAXIS Computer Science exam (March, 2020)
- Traveled withUM students to SIGCSE conference in Portland, Oregon (March, 2020)
- Traveled with students to 2018 and 2019 ACM Rocky Mountain Regional Collegiate Programming Contests
- Rocky Mountain College Assessment Committee (2017-2019)

Selected Projects and Service Activities

Franke Global Leadership Initiative capstone mentor. Mentored a group of honors students on a capstone project titled *Effects of the COVID-19 Pandemic on UM Students' Mental Health*. This mixed-methods research project included a quantitative survey and several interviews; and resulted in a research report presentation and a short documentary film. 2020-2021.

Evaluating the PRAXIS Computer Science exam. Worked with Office of Public Instruction (OPI) committee to review the Computer Science PRAXIS exam, which is completed by K12 teachers who are seeking a new certification area in Computer Science. I took the exam, reviewed questions for clarity and accuracy, and reported my findings to the committee.   2020.

Bringing Coding to the Passages Prerelease Center. Partnered with the Enactus students at Rocky Mountain College to coordinate and teach a coding class at the Passages Women's Prerelease Center. Activities included numerous stakeholder meetings, needs assessment, course design, creation of a portable computing environment that met DOC security requirements, delivery of class to inmates, assessment and reporting. 2018-2019.

SMArtGirls at Rocky Mountain College. Worked with two students to create a STEAM activities group with weekly meetings held on the RMC campus. Themes included Space Week (freeze-dried food, pump rockets, space trivia), hydroponics, slime, and more. 2018-2019.

Magical Forest for Black Tie Blue Jeans event. Worked with Billings artist Chance Robinson to transform the Rocky Mountain College gym into a magical forest. Used a combination of natural materials (tree branches, live plants, linen) and technology (microcontrollers, tiny LED lights) to create lighting effects to support the theme of an important yearly fundraising event. This activity was used as a service learning project for my ART 180 Digital Art class. 2016.

Doctoral Dissertation: Practices and Perceptions of Social Media Among Leaders in Higher Education: A Quantitative Study. Activities included an exhaustive review of literature, creation and validation of an online survey instrument, data collection, statistical analysis including cluster sampling, removal of bad data, difference in means, correlation, Cronbach's Alpha, and visualizations for dissertation report. Technology used included SurveyMonkey, Microsoft Access, Microsoft Excel, SPSS.   2016.
https://scholarworks.umt.edu/etd/10740/.

Department of Corrections Online Training. Worked with a Psychology professor on a grant-funded project to bring online mental health and addictions training to Montana Department of Corrections employees. Conducted needs assessment, trained faculty, created materials, provided ongoing faculty and student technical support and program assessment. 2006-2007.

Master's Thesis: Developing Electronic Portfolio Software for Program Assessment. Created a web-based software prototype used to perform outcomes assessment of students' electronic portfolios. User-centered design methodologies were used for development. Technology included Microsoft Active Server Pages (ASP) and Microsoft Access.   2007.
https://scholarworks.umt.edu/etd/307/.