
John T. Prince

Curriculum vitae

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Education

HHMI Research Specialist (Post-doctoral)

May 2008 – present. Department of Chemistry and Biochemistry, University of Colorado (CU-Boulder), Boulder, Colorado.

- Mass spectrometric identification of transient protein complexes
- Advisor: Natalie Ahn

PhD in Cell and Molecular Biology

Aug 2001 – May 2008. Institute for Cellular and Molecular Biology (ICMB), Center for Systems and Synthetic Biology, University of Texas (UT), Austin, Texas.

- Thesis Title: Integration and Validation of Mass Spectrometry Proteomics Data Sets
- Advisor: Edward Marcotte
- Bioinformatics and Computational Biology Track
- GPA 4.00/4.00

Bachelor of Science in Microbiology

Dec. 2000. Department of Biology and Agriculture, Brigham Young University (BYU), Provo, Utah.

- Minor in Chemistry
- Graduated Magna Cum Laude (3.89/4.00)

Honors & Awards

Department of Energy Scholarship (Proteomics and Applications)

2003. Keystone Symposium, Keystone, Colorado.

ICMB Research Assistantship

2001. Institute for Cellular and Molecular Biology, University of Texas, Austin, Texas.

ICMB Graduate Fellowship Award (Supplementary)

2001 – 2005. Institute for Cellular and Molecular Biology, University of Texas, Austin, Texas.

Cancer Research Center Summer Fellowship

1999. Brigham Young University, Provo, Utah.

Office of Research and Creative Activities Scholarship.

1999. Brigham Young University, Provo, Utah.

Trustees Scholarship (Full Tuition)

1994. Brigham Young University, Provo, Utah.

National Merit Scholarship

1994. Manor High School, Manor, Texas.

Robert Byrd Scholarship

1994. Manor High School, Manor, Texas.

Applied Materials Scholarship

1994. Manor High School, Manor, Texas.

1st in High School Class

1994. Manor High School, Manor, Texas.

Eagle Scout Award

1993. Boy Scouts of America, Baton Rouge, Louisiana.

Scientific Experience

Signal Transduction

May 2008 – present. Dr. Natalie Ahn Lab, University of Colorado, Boulder, Colorado.

- *in vivo* cross-linking and mass spectrometry analysis of transient protein-protein interactions

Proteomics & Bioinformatics

Jan. 2002 – May 2008. Dr. Edward Marcotte Lab, University of Texas, Austin, Texas.

- Computational analysis of mass spectrometry proteomics data
- Maintenance and operation of 2D-LC nanoelectrospray LTQ-Orbitrap and Ion Trap mass spectrometers
- Creator and curator of the Open Proteomics Database (OPD)

Proteomics: Sequence, Structure, Function; High Throughput Technologies and Methods of Analysis (workshop)

Mar. 2004. Institute for Pure and Applied Mathematics, University of California, Los Angeles, California.

Laboratory Instructor of Cell and Molecular Biology Lab (Bio205L)

2003. School of Biological Sciences, University of Texas, Austin, Texas.

- Instruction and assistance in microscopy, gels, westerns, etc.

Computational Phylogenetics

Mar. – May 2002. Dr. David Hillis Lab, University of Texas, Austin, Texas.

- Investigation of site-likelihood parameters of Maximum Likelihood models
- Wrote programs and performed computer simulations

Antibody Engineering

Oct. 2001 – Jan. 2002. Dr. George Georgiou Lab, University of Texas, Austin, Texas.

- Directed evolution of heat stable antibodies by Phage Display

Organic Synthesis

Jun. 1999 – Aug. 2001. Dr. Merritt Andrus Lab, Department of Chemistry and Biochemistry, Brigham Young University, Provo, Utah.

- Synthesis of Multi-Drug Resistance reversal agents (cancer research)
- Worked out a mass spectrometry screening assay

- Performed NMR, column and radial chromatography, TLC

Molecular Biology

Fall 2000. Dr. Michael Leavitt Lab, Department of Microbiology, Brigham Young University, Provo, Utah.

- Isolated large, high adherence plasmid in E. coli for design of bacterial interference agents in poultry
- Performed gel electrophoresis, plasmid preps, electroporation, high adherence assay, fluorescence microscopy

Computational Experience

Operating Systems

Linux/Unix extensive
 Windows extensive
 Macintosh basic

Software

Perl	extensive
Perl Data Language	extensive
Ruby	extensive
Ruby on Rails	basic
C/C++	substantial
Mass Spec Analysis software	substantial
Matlab	substantial
HTML/CSS	substantial
Php	basic
Apache	basic
MySQL	substantial
AVS	basic
Java	basic
Rational Rose	basic
Office (Word, Excel, PPT)	substantial

Certifications

1999. Utah Department of Workforce Services, Provo, Utah.

- Typing: 54 WPM (Net)
- Ten-Key: 112 SPM (100% accuracy)
- WordPerfect 6.0
- Spelling

Work Experience

Youth Technician

Summer 1999. Youth Detention Center, Strawberry Work Camp, Provo, Utah.

- Organized and directed labor forces
- Led activities and discussion
- Mediated conflict resolution

Head Teacher

Summer 1998. The Children's Courtyard, Austin, Texas.

- Created and carried out teaching plans
- Designed original activities
- Organized science projects and explorations

Sales Counselor

Nov 1997 – Jan 1998. Circuit City Express, Austin, Texas.

- Courteously served customers
- Helped train new sales counselors
- Organized store sections and worked cash register

Usher

Summer 1995. General Cinema.

Shelving

Summer 1995. Opening Used Book Store, Austin, Texas.

Waiter

Summer 1994. Pizza Hut, Austin, Texas.

Apartment Mover

Summer 1992. Apartment Movers, Baton Rouge, Louisiana.

Lawn Maintenance

Summer 1991 & 1992. Properties Unlimited, Baton Rouge, Louisiana.

Volunteer Experience**Scoutmaster**

2002 – 2007. Troop 100, Boy Scouts of America, Austin, Texas.

- Planned scouting tours, camps, and meetings.
- Instructed in a variety of disciplines
- Trained youth leaders

Tutor, Organic Chemistry

Winter 1998. Brigham Young University, Provo, Utah.

- Taught principles of organic chemistry one-on-one

Missionary

Nov. 1995 – Nov. 1997. The Church of Jesus Christ of Latter Day Saints, Scotland Edinburgh Mission, Scotland, United Kingdom.

- Full-time teaching responsibility
- Supervised and trained missionaries

Leadership, Clubs, & Societies**Member, American Society for Mass Spectrometry**

2005 – 2006.

Founder, Cell and Molecular Biology Graduate Student Association

2004. University of Texas, Austin, Texas.

- Initiated and formed committee of involved students

- Led the drafting of a constitution
- Administered the first elections

Member, Society for Computational Biology

2002 – 2005. University of Texas, Austin, Texas.

Member, Golden Key National Honor Society

2000 – Present. National Organization.

Vice President, Health Occupations Students of America

1999 – 2000. Brigham Young University Chapter, Provo, Utah.

Publications, Presentations, & Posters

Sample bias validation to examine the accuracy of large scale mass spectrometry proteomics peptide identification error estimates. Prince JT and Marcotte EM. *Analytical Chemistry* (manuscript submitted).

mspire: Mass spectrometry proteomics in Ruby. Prince JT and Marcotte EM. *Bioinformatics* (manuscript submitted).

Chromatographic alignment of ESI-LC-MS proteomics datasets by bijective interpolated dynamic time warping. Prince JT and Marcotte EM. *Analytical Chemistry*. **2006**, *78*(17), 6140-52.

Boosting protein identification in shotgun proteomics experiments. Ramakrishnan SR, Vogel C, Wang R, Prince JT, Li Z, Myers M, Marcotte EM, Miranker DP. *Bioinformatics* (to be submitted).

Mass spectrometry of the *M. smegmatis* proteome: protein expression levels correlate with function, operons, and codon bias. Wang R, Prince JT, Graham DE, Marcotte EM. *Genome Research*. **2005**, *15*(8), 1118-26.

The need for a public proteomics repository. Prince JT, Carlson MW, Wang R, Lu P, Marcotte EM. *Nature Biotechnology*. **2004**, *22*(4), 471-2.

MSFound2: A web based protein identification system for MS/MS mass spectrometry using metric space database indexing. SR Ramakrishnan, Prince JT, Marcotte EM, Miranker DP. *To Be Determined* (to be submitted).

Proteomics by comparative mass spectrometry using the peptide signature method: a complementary approach to MS2 spectra identification. Nakorchevskiy AA, Adai AT, Prince JT, Marcotte EM. *Analytical Chemistry* (to be submitted).

A fast course filtering method for peptide identification by mass spectrometry.

Ramakrishnan SR, Rui M, Nakorchevskiy AA, Prince JT, Willard WS, Xu W, Marcotte EM, Miranker DP. *Bioinformatics*. **2006**, *22*(12), 1524-31.

Chromatographic Alignment of Multi-Dimensional Mass Spectra using Interpolated Dynamic Time Warping. Prince JT, Marcotte EM. *53rd American Society of Mass Spectrometry Conference*. **2005**, Jun. Poster.

Bias in Large Scale Mass Spectrometry Proteomics Protein/Peptide Identification Error

Estimates. Prince JT, Marcotte EM. *Keystone Symposium (Cell Signaling and Proteomics)*. 2007, Mar. Poster.

The Open Proteomics Database (OPD) and publishing mass spectrometry based protein identifications. Prince JT, Marcotte EM. *The Paris Committee for Guidelines for Proteomic Data Publication*. 2005, May. Presentation.

Revised Draft Guidelines for Proteomic Data Publication. The Paris Committee for Guidelines for Proteomic Data Publication. *Molecular and Cellular Proteomics*. 2005, 4, 1223-5.

Analysis and Identification of Proteins in Human Placental Mitochondria. Prince JT, Fuqua B, Johnson J, Marcotte EM. *Keystone Symposium (Proteomics and Applications)*. 2003, Mar. Poster.

Contact

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References

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