John C. Price, Ph.D.

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EDUCATION

Ph.D. The Pennsylvania State University **2001-2005**
Graduate Program in Biochemistry, Molecular Biology, and Microbiology

B.S. in Chemistry *cum laude* Utah State University **1997-2001**

POSITIONS and EXPERIENCE

8/2013-Present: Assistant Professor of Chemistry and Biochemistry at Brigham Young University. I am mentoring undergraduate and graduate students investigating the mechanisms used to maintain and control cellular proteostasis.

1/2012-7/2013: Director of Dynamic Proteomics at KineMed Inc. I was responsible for driving the development of new technologies, developing business relationships around the Dynamic Proteomics methods and integrating with the needs of corporate partners

6/2010-7/2013: Scientist at KineMed Inc. I worked with a team of talented scientists to apply the proteome dynamics methods I developed as a post-doctoral fellow to the study of human disease *in vivo*. We focused on etiology of changes in protein homeostasis and the wide-scale study of biological networks.

12/2005 –6/2010: **Post-Doctoral Fellow:** I worked with Dr. Stanley B. Prusiner at the University of California, San Francisco studying the mechanism of prion propagation. I developed techniques for the *in vitro* amplification of PrP^{Sc} and measurement of protein turnover *in vivo*. I used the Protein Misfolding Cyclic Amplification technique to investigate the kinetics of PrPSc formation, with Western Blotting, conformational dependent immunoassay (CDI) and mass spectrometry as my main diagnostic methods. While at the UC, I won over $200,000 for support of my individual research projects.

09/2001-11/2005: **Ph.D. Candidate:** Working with Drs. J. Martin Bollinger and Carsten Krebs, I studied the oxygen-dependent reaction of the enzyme Taurine α-Ketoglutarate Dioxygenase. We dissected the reaction cycle to an unprecedented degree, and established for the first time that an Fe(IV)=O occurs during the reaction. In the course of the study I employed transient state kinetic techniques such as chemical/freeze quench, and stopped flow. I also used a number of different spectroscopic techniques including UV-visible absorption, Electron Paramagnetic Resonance, Mass Spectrometry, Nuclear Magnetic Resonance, and Mössbauer spectroscopies. During my time at Penn State, my research project brought over $900,000.00 in funds to the university.

01/1999 -05/2001: **Undergraduate** In Dr. Lisa M. Berreau's group at Utah State University, I used synthetic organic chemistry to synthesize active site models of the enzyme Peptide Deformylase. During the course of the work I used anaerobic technique, and characterized the compounds via 1H, 13C Nuclear Magnetic Resonance, Infrared, and Mass Spectrometry.

PUBLICATIONS: corresponding author *

1. Zhang, T. **Price JC**, Nouri-Nigjeh E, Li J, Hellerstein MK, Qu J, Ghaemmaghami S*., **2014** "Kinetics of Precursor Labeling in Stable Isotope Labeling in Cell Cultures (SILAC) Experiments". 86(22):11334-41
2. Miller BF, Drake JC, Naylor B, **Price JC***, Hamilton KL.*, **2014** "Assessing Proteostasis for Studies of Slowed Aging" **Age. Res. Rev**. 18, 106-111.
3. **Price JC**, Ghaemmaghami S, **2014** "Analysis of Proteome Dynamics in Mice by Isotopic Labeling" **Methods in Molecular Biology**, 1156 pg: 111-132
4. Louie KB, Bowen BP, McAlhany S, Huang Y, **Price JC**, Mao JM, Hellerstein MK, Northen TR, 2013 "*In situ* kinetic histochemistry" **Nature Scientific Reports**, 3:1656, DOI: 10.1038/srep01656
5. **Price JC**, Khambatta CF, Li KW, Bruss MD, Shankaran M, Dalidd M, Floreani NA, Roberts LS, Turner SM, Holmes WE, and Hellerstein MK, 2012 "The effect of long-term calorie restriction on hepatic proteostasis and mitochondrial dynamics in mice" **Mol. Cell. Proteomics**, 11.12, pg: 1801-1814
6. Krebs C, Dassama LMK, Matthews ML, Jiang W, **Price JC**, Korboukh V, Li N, Bollinger JM Jr. 2012 "Novel approaches for the accumulation of oxygenated intermediates to multi-millimolar concentrations" **Coordination Chemistry Reviews**, 257, pg: 234-243
7. Guan S, **Price JC**, Gheammaghami S, Prusiner SB, Burlingame AL, 2012 "Compartment Modeling for mammalian protein turnover studies by stable isotope metabolic labeling" **Ana Chem**., 84(9):4014-21
8. **Price JC**, Holmes WE, Li KW, Floreani NA, Neese RA, Turner SM, Hellerstein MK, 2011 "Measurement of human plasma proteome dynamics with ^2H_2O and liquid chromatography tandem mass spectrometry." **Ana. Biochem.**, 420(1):73-83
9. Guan S, **Price JC**, Prusiner SB, Ghaemmaghami S, Burlingame AL, 2011, "A data processing pipeline for mammalian proteome dynamics studies using stable isotope metabolic labeling." **Mol. Cell Prot.**, (12):M11.010728
10. **Price JC**, Guan S, Burlingame A, Prusiner SB, Ghaemmaghami S., **2010**, "Analysisof proteome dynamics in the mouse brain." **Proc. Natl. Acad. Sci. USA, 107,**14508-13
11. Ye S, **Price JC**, Barr EW, Green MT, Bollinger JM, Krebs C, Neese F., **2010**,"Cryoreduction of the NO-adduct of TauD yields an elusive {FeNO}(8) species"**J. Am. Chem. Soc., 132,**4739-51
12. Neidig ML, Brown CD, Light KM, Fujimori DG, Nolan EM, **Price JC**, Barr EW,Bollinger JM Jr, Krebs C, Walsh CT, Solomon EI., **2007**, "CD and MCD of CytC3and Taurine Dioxygenase: Role of the Facial Triad in alpha-KG-DependentOxygenases**." J. Am. Chem. Soc., 46,** 14224-31**.**
13. Ingle GK, Makowska-Grzyska MM, Szaina-Fuller E, Sen I, **Price JC**, Arif AM, Berreau LM, 2007, "Influence of the chelate ligand structure on the amid methanolysis reactivity of mononuclear zinc complexes", **Inorg. Chem. 46** (4):1471-80
14. **Price JC**, Barr EW, Hoffart LE, and Krebs C, Bollinger JM, Jr., **2005**, "Kinetic dissection of the catalytic mechanism of taurine:α-ketoglutarate dioxygenase from *Escherichia coli*", **Biochemistry, 44**, 8138-47.
15. Krebs C, **Price JC**, Baldwin J, Saleh L, Green MT, and Bollinger JM, Jr., **2004**, "Time resolved 57Fe-Mossbauer: monitoring changes of an iron-containing active site during a biochemical reaction," **Inorg. Chem., 44**, 742-757.
16. Riggs-Gelasco P, **Price JC**, Guyer RB, Brehm JH, Barr EW, Bollinger JM, Jr., and Krebs C., **2004**, EXAFS spectroscopic evidence for an Fe=O Unit in the Fe(IV) intermediate observed during oxygen activation by taurine:α-ketoglutarate dioxygenase, **J. Am. Chem. Soc., 126**, 8108-8109.

17. **Price JC**, Barr EW, Glass TE, Krebs C and Bollinger JM, Jr., **2003**, "Evidence for hydrogen abstraction from C1 of taurine by the high-spin Fe(IV) intermediate detected during oxygen activation by taurine:α-ketoglutarate dioxygenase (TauD) ," **J. Am. Chem. Soc., 43,** 13008-13009.
18. **John C. Price**, Eric W. Barr, Bhramara Tirupati, J. Martin Bollinger, Jr., and Carsten Krebs, **2003**, "The first direct characterization of a high valent iron intermediate in the reaction of an a-ketoglutarate-dependent dioxygenase: a Fe(IV) complex in taurine/α-ketoglutarate dioxygenase (TauD) from *Escherichia coli*," **Biochemisty, 42,** 7497-7508.

PROFESSIONAL MEMBERSHIP

American Chemical Society, American Society for Biochemistry and Molecular Biology, Human Proteome Organization, Am. Mass Spectrometry Association.

PRESENTATIONS

OCT 2014 - John C. Price, Measuring *in vivo* proteome dynamics. **Invited Speaker,** Boise State Chemistry Department Chemistry Seminar Series

OCT 2014 - John C. Price, Measuring *in vivo* proteome dynamics. **Invited Speaker,** Brigham Young University Idaho, Department Chemistry Seminar Series

Apr 2014 - John C. Price, Measuring *in vivo* proteome dynamics. **Invited Speaker,** Colorado State University, Department of Chemistry Seminar Series

Nov 2013 - John C. Price, Measuring *in vivo* proteome dynamics. **Invited Speaker,** Brigham Young University Hawaii, Department of Chemistry Seminar Series

Nov 2013 - John C. Price, Measuring *in vivo* proteome dynamics. **Invited Speaker,** University of Hawaii, Department of Anatomy, Biochemistry & Physiology Seminar Series

Nov 2013 - John C. Price, Measuring *in vivo* proteome dynamics. **Invited Speaker,** Weber State Univ., Department of Chemisty Seminar Series

APRIL 2010-John C. Price, Shenheng Guan, Alma Burlingame, Stanley Prusiner, Sina Ghaemmaghami 2010 Measuring *in vivo* proteome dynamics. **Oral Presentation**, ACS National, Anaheim, California

SEPT 2007 John C. Price, Camille Deering, Jiri G. Safar, and Stanley B. Prusiner Investigation of the mechanism for the *in vitro* production of infectious prions, **Poster Presentation**, Prion 2007, Edinburgh, Scotland, UK.

JUNE 2007 John C. Price, Camille Deering, Jiri G. Safar, and Stanley B. Prusiner 2007 Investigation of the mechanism for the *in vitro* production of infectious prions, **Oral Presentation**, 62nd annual meeting of the northwest region of the American Chemical Society, Boise ID.

AUG. 2005 John C. Price, Eric W. Barr, Lee Hoffart, Carsten Krebs, J. Marty Bollinger 2005 Kinetic dissection of Taurine/α-Ketoglutarate Dioxygenase, a model α- ketoglutarate dependent dioxygenase, **Poster presentation**, 12th Inter Conference on Bioinorganic Chemistry (ICBIC), Ann Arbour MI.

SEPT. 2004 " Kinetic Dissection of the Catalytic Mechanism of Taurine:α-ketogluratate Dioxygenase (TauD) from *Escherichia coli*." **Poster presentation**, 7th European Biological Inorganic Chemistry Conference (Eurobic) Garmisch-Partenkirchen, Germany

SEPT. 2003 "Fe(IV) in Biology: Using Kinetics to Understand Enzyme Mechanisms" **Oral Presentation**, *Lion Lecture* Department of Chemistry. Pennsylvania State University, University Park, Pa.

JUNE 2003 " Kinetic Description of the Reaction Mechanism of Taurine:α-ketogluratate Dioxygenase, a Non-heme-iron Dioxygenase." **Poster presentation**, 11th Internat Conference on Biological Inorganic Chemistry (I.C.B.I.C.) Cairns, Australia

AWARDS AND HONORS

Larry L. Hillblom Foundation Postdoctoral Fellow	2007
NIH trainee under Biology of Aging training grant to UCSF	2005
R. Adams Dutcher Travel Award	2004
Poster Award (4 awarded out of 350 posters) Eurobic	2004
Paul Berg Prize in Molecular Biology	2003
NSF Graduate Research Fellowship Honorable Mention	2003
Braucher Scholarship	2002
Homer F. Braddock Graduate Fellowship	2001
Pennsylvania State University Graduate Fellowship	2001
American Institute of Chemists Foundation Undergrad Award	2001

TEACHING EXPERIENCE

09/2013- Present: classes taught on a rotating schedule, not concurrently

Chem 689 Proteomics
Chem 581 Advanced biochemical methodologies
Chem 497R Mentored research for undergraduates
Chem 481 Biochemistry

06/2010 – 07/2013: Responsible for oversight and training of research associates in the dynamic proteomics division of KineMed Inc.

09/2002 - 12/2002: During my tenure as a teaching assistant in the advanced biochemistry lab at Pennsylvania State University, the instructor suffered a heart attack. This required that during the last third of the semester I and another teaching assistant cover our assignments as lab instructors, and shoulder the responsibility for the twice weekly class lecture. We ensured that the class continued by preparing and delivering lectures, and formulating and grading the final exam as well as the grading of lab reports that were our normal responsibility. The students final evaluations of the class reported that while our final exam may have been tougher than expected, our overall performance was superb.

01/1999 -05/2001: A teaching assistant at Utah State University, I was responsible for overseeing basic chemistry and organic chemistry labs, as well as preparing and leading recitations to supplement the class lectures