



Credentials: Dr. Ping is internationally recognized for her expertise and achievements in proteasome biology, cardiac physiology, functional proteomics, and Data Science. She is a pioneer in the field of cardiovascular proteomics, and has made essential contributions to our understanding of cardiac functional sub-proteomes during ischemic injury. In particular, the Ping laboratory has succeeded in delineating proteomic alterations underlying cardiac organellar function and disease phenotypes (Drews *et al. Circ Res*, 2010; Lau, Wang *et al. Circ Res*, 2012; Wang, Fang, Zong *et al. MCP*, 2013). Moreover, recent publications from her group (Lam, Wang, Lau, Liem *et al. JCI*, 2014; Kim, Wang, Kim, Lau *et al. MCP*, 2012),

have demonstrated a novel workflow that integrates deuterium oxide (D₂O) labeling, high-resolution mass spectrometry (MS), and custom computational methods to systematically interrogate *in vivo* protein turnover in mouse and in human. Dr. Ping has consistently integrated computational tools in her research in developing multiple analytical platforms and software tools which are uniquely targeted for protein turnover rate measurements and characterizing post-translational modifications (PTMs) of the cardiac proteome (Deng, Zhang *et al. MCP*, 2011; Lam *et al. J Proteomics*, 2012; Wang, Fang, Zong *et al. MCP*, 2013). Dr. Ping's broad training in systems physiology and computational tools inspired the integrated view and the central theme for her current research goals.

Accomplishments: Since 2009, Dr. Ping has received honors and awards recognizing her accomplishments from four international organizations: she received the 2009 CNPN Achievement Award; she presented the 2012 Thomas Smith Memorial Lecture of AHA; she was the winner of the 2013 International HUPO Distinguished Service Award; and she has recently be awarded the 2015 Robert M Berne Distinguished Lectureship in Cardiovascular Medicine by American Physiological Society (APS). In the past decade, Dr. Ping has led many large-scale and international initiatives that have supported the development of omics science globally, bringing basic scientists together with clinicians to integrate their expertise and solve biological questions. She currently resides on eleven scientific advisory boards and committees for both national and international organizations. Dr. Ping has championed the integration of omics data and the dissemination of data in public domains. Furthermore, she has been a strong advocate on open source of tools and methods. Since 2010, Dr. Ping has led the NHLBI Proteomics Center at UCLA, which utilizes the collaborative scientific synergy of 57 meritorious investigators from six institutions worldwide. On the bioinformatics front, Dr. Ping has successfully initiated, developed, and implemented a cardiovascular protein knowledgebase, COPaKB, which contains protein software analysis tools and application programming interfaces (APIs) to other resources (Zong, Li, Li *et al. Circ Res*, 2013; Li, Zong, Liang *et al. J Proteomics*, 2013). As of March 2014, COPaKB has received 133,268 page views from 98 countries. In September 2014, Dr. Ping led an international team of investigators successfully competed for the Big-Data to Knowledge (BD2K) Award from the NIH Office of the Director. She is now the Director for the NIH BD2K Center of Excellence at UCLA.

REPRESENTATIVE PUBLICATIONS SINCE 2009 FROM A TOTAL OF 142 PUBLICATIONS:

- **Ping P.** Getting to the Heart of Proteomics. ***New Eng J Med.*** 2009; 360(5): 532-534.
- Deng N, Zhang J, Zong C, Wang Y, Lu H, Yang P, Wang W, Young GW, Wang Y, Korge P, Lotz, C, Doran, P, Liem, DA, Apweiler R, Weiss JN, Duan H, **Ping P.** Phosphoproteome Analysis Reveals Regulatory Sites in Major pathways of Cardiac Mitochondria. ***Mol Cell Proteomics.*** 2011;10:M110.000117.
- Lau E, Wang D, Zhang J, Yu H, Lam MP, Liang X, Zong N, Kim TY, **Ping P.** Substrate- and isoform-specific proteome stability in cardiac mitochondria. ***Circ Res.*** 2012;110(9):1174-8.
- Zong NC, Li H, Li H, Lam MP, Jimenez RC, Kim CS, Deng N, Kim AK, Choi JH, Zelaya I, Liem D, Meyer D, Odeberg J, Fang C, Lu HJ, Xu T, Weiss J, Duan H, Uhlen M, Yates JR 3rd, Apweiler R, Ge J, Hermjakob H, **Ping P.** Integration of Cardiac Proteome Biology and Medicine by a Specialized Knowledgebase. ***Circ Res.*** 2013;12;113(9):1043-105.
- Lam MP, Wang D, Lau E, Liem DA, Kim AK, Ng CM, Liang X, Bleakley BJ, Liu C, Tabaraki JD, Cadieras M, Wang Y, Deng MC, **Ping P.** Protein kinetic signatures of the remodeling heart following isoproterenol stimulation. ***J Clin Invest.*** 2014. 124(4):1734-44.