BENJAMIN AARON GARCIA, Ph.D., FRSC

John McCrea Dickson M.D. Presidential Professor
Department of Biochemistry and Biophysics
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PROFESSIONAL POSITIONS

John McCrea Dickson M.D. Presidential Professor, Department of Biochemistry and Biophysics, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA 2018-present

Secondary Faculty, Chemistry Department, University of Pennsylvania Perelman School of Medicine, Philadelphia, 2017-present

Presidential Professor, Department of Biochemistry and Biophysics, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA 2016-2018

Presidential Associate Professor, Department of Biochemistry and Biophysics, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA 2012-2016

Faculty Member, Epigenetics Institute, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA 2012-present

Director of Quantitative Proteomics, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA 2012-present

Assistant Professor of Molecular Biology, Princeton University, Princeton, NJ 2008-2012
Associated Faculty, Chemistry Department, Princeton University, Princeton, NJ 2008-2012
Core Faculty, Quantitative and Computational Biology, Princeton University, Princeton, NJ 2008-2012

EDUCATION

NIH NRSA Postdoctoral Fellow/Institute for Genomic Biology Postdoctoral Fellow, 2005-2008
University of Illinois, Urbana-Champaign, IL
Postdoctoral Research Advisor: Dr. Neil L. Kelleher

PhD in Chemistry with High Distinction, 2005
University of Virginia, Charlottesville, VA
Graduate Research Advisor: Dr. Donald F. Hunt

Bachelor of Science in Chemistry with Honors, 2000
University of California, Davis, CA
Undergraduate Research Advisor: Dr. Carlito B. Lebrilla

HONORS

As a Principal Investigator

- Human Proteome Organization (HUPO) Discovery in Proteomic Sciences Award (2020)
- Named a Fellow of the Royal Society of Chemistry (FRSC) (2020)
- Michael L. Gross Lectureship Award, University of Nebraska (2020)
- Named to Marquis Who's Who in America (2020)
- New Jersey American Chemical Society Distinguished Lectureship Award in Mass Spectrometry (2019)
- Marie M. Daly Lecture, New York University School of Medicine (2019)
- American Society for Mass Spectrometry (ASMS) Biemann Medal (2018)
- John McCrea Dickson M.D. Professorship, University of Pennsylvania School of Medicine (2018- present)
- President's Lecture, Memorial Sloan Kettering Cancer Center (2018)
- Protein Society Young Investigator Award (2016)
- Ken Standing Award, Enabling Proteomic Technologies (ETP), Inc. (2015)
- Leukemia & Lymphoma Society Dr. Robert Arceci Scholar Award (2015-2020)
- American Chemical Society Arthur F. Findeis Award (2014)
- Pittsburg Conference (Pittcon) Achievement Award (2014)
- Biomed Research Central Award in Molecular and Cellular Sciences (2013)
- AB Sciex Young Investigator Award (2013)
- Presidential Professorship, University of Pennsylvania School of Medicine (2012-present)
- Alfred P. Sloan Research Fellowship (2012)
- McElvain Lectureship, University of Wisconsin (2011)
- Agilent Technologies Thought Leader Award (2010-2013)
- Presidential Early Career Award for Scientists and Engineers (PECASE), (2010)
- National Institutes of Health (NIH) Director's New Innovator Award (2010-2015)
- National Science Foundation (NSF) Early Faculty CAREER Award (2010-2015)
- New Jersey American Chemical Society Early Career Award in Mass Spectrometry (2010)
- Named an "Emerging Investigator" by the Molecular BioSystems Journal (2010)
- American Society for Mass Spectrometry (ASMS) Research Award (2009)
- American Chemical Society Leadership Development Award (2008)

Pre-Principal Investigator

- Carl Storm Minority Fellowship to attend the Epigenetics Gordon Research Conference (2007)
- NIH Ruth L. Kirschstein NRSA Postdoctoral Fellowship (2006-2008)
- University of Illinois, Institute for Genomic Biology Postdoctoral Fellowship (2005-2006)
- NIH Mass Spectrometry Discussion Group Travel Award (2004)
- Sigma Xi Grant-in-aid of research award (2005)
- Sigma Xi Grant-in-aid of research award (2004)
- NIH Minority Training Research Forum conference "Acres of Diamonds" research award (2004)
- National Academies of Science/Ford Foundation Predoctoral Graduate Fellowship (2002-2005)
- Twice awarded "Honorable Mention" NSF Predoctoral Fellowship Program competition (2000 and 2002)
- Awarded "Honorable Mention" in the Ford Foundation Predoctoral Fellowship Program competition (2000)
- Eli Lilly Endowment Inc./Hispanic Scholarship Fund Scholar (2000, 2002)
- American Chemical Society Undergraduate Scholar (1999-2000)
- U.C. Davis Chancellor's Award for Excellence in Undergraduate Research (2000)
- U.C. Davis Simonton Prize for Outstanding Undergraduate Research (2000)
- National Undergraduate Research Council conference travel award (1999)
- Summer Undergraduate Research Fellowship from the California Institute of Technology (1999)

- National Institute of Health (NIH) Summer Minority Scientist Development Fellowship (1999)
- Inducted into Sigma Xi, the Scientific Research Honor Society (1999)
- American Chemical Society's (ACS) Division of Analytical Chemistry I.M. Kolthoff Enrichment award for outstanding undergraduate research in analytical chemistry (1999)
- Eli Lilly Inc./ SACNAS undergraduate Scholarship (1999)
- U.C. Davis Ronald E. McNair Scholar (1998-2000)

PROFESSIONAL ACTIVITIES

Service in professional societies

- Member of the American Chemical Society, Division of Analytical Chemistry Long Range Program Planning Committee (2020-present)
- Chair-Elect for the Delaware Valley Mass Spectrometry Discussion group, (2020-present)
- National Science Foundation (NSF) Biological Sciences Advisory Committee, (2017-present)
- Council member (elected from Western region) of the Governing board for the Human Proteome Organization (HUPO), (2016-present)
- Board of Directors for the United States Human Proteome Organization (US-HUPO), (2011-present)
- Member Asilomar Conference Committee, ASMS, (2016-2019)
- Member Diversity and Outreach Committee, ASMS, (2016-2019)
- Member Nominating Committee, ASMS, (2016-2018)
- Secretary for the Delaware Valley Mass Spectrometry Discussion group, (2015-2018)

Service on editorial boards

- Editorial Board, Journal of Proteome Research, (2020-present)
- Editorial Board, Mass Spectrometry Reviews, (2020-present)
- Editorial Board, Molecular Omics Journal, (2018-present)
- Editorial Advisory Board, Analytical Chemistry journal (2016-2019)
- Editor for special issue on Chromatin and Epigenetics, Molecular and Cellular Proteomics, (2015)
- Editorial Board, Molecular and Cellular Proteomics Journal, (2013-present)
- Associate Editor, BMC Genomics Journal, (2010-2017)
- Editor for special issue on Proteomics, Journal of Biomedicine and Biotechnology, (2009)
- Ad Hoc reviewer for many journals including: the Journal of Proteome Research, Molecular and Cellular Proteomics, Expert Reviews of Proteomics, Analytical Chemistry, Translational Research, Chromosoma, Biochemistry, Proteomics, Rapid Communications in Mass Spectrometry, Analyst, PNAS, FEBS, Nature, Journal of the American Society for Mass Spectrometry, Journal of Cellular Biochemistry, Journal of Biological Chemistry, Nature Chemical Biology, Nature Methods, PLosONE and Electrophoresis

Service on Review Panels

- Chair, NIH Enabling Bioanalytical and Imaging Technologies Study Section (2018-2020)
- Permanent member, NIH Enabling Bioanalytical and Imaging Technologies Study Section (2015-2020)
- Leukemia and Lymphoma Society review panel (2013-2018)
- NIH and NSF grants ad hoc reviewer (2009-present)
- NIH review panel committee member, High End Shared Instrumentation (2013)
- NIH review panel committee member, Enabling bioanalytical and imaging technology study section (2013)
- NIH review panel committee member, Clinical Proteomic Technologies for Cancer Initiative (2010)
- NSF review panel committee member, Gene Regulation and Epigenetics (2010)
- NIH review panel committee member, High End Shared Instrumentation (2009)
- Member Peptide and Protein Identification Guidelines Committee (Molecular and Cellular Proteomics

journal, ASBMB), (2009-2011)

Service for Conference Organization

- Session Chair for "Biochemical Basis for Epigenetics and Chromatin Remodeling" oral session at the ASBMB Conference, San Diego, CA (2018)
- Session Chair for "Chromatin Dynamics" oral session at the US HUPO conference, Tempe, AZ (2015)
- Session Chair for "Epigenetics" oral session at the 14th World HUPO Congress, Vancouver, BC (2015)
- Session Chair for "Epigenetic Mechanisms: Protein and DNA Covalent Modifications" oral session at the Association for Biomolecular Resources Federation (ABRF) Conference, Palm Springs (2013)
- Session Chair for "Epigenetic Modifications and Mechanisms" oral session at the 61th American Society for Mass Spectrometry (ASMS), Minneapolis, MN (2013)
- Session Chair for "Epigenetics: Express your Phenotype" oral session at the 11th World HUPO Congress, Boston, MA (2012)
- Session Chair for "Epigenetics" oral session at the Association for Biomolecular Resources Federation (ABRF) Conference, San Antonio, TX (2011)

PROFESSIONAL MEMBERSHIPS

American Society for Mass Spectrometry
U.S. Human Proteome Organization
World Human Proteome Organization
American Society for Biochemistry and Molecular Biology
American Chemical Society, Division of Analytical Chemistry
The Protein Society
American Association for the Advancement of Science
Royal Society of Chemistry (Fellow)
Sigma Xi, the Scientific Research Society
Society for Advancement of Chicanos and Native Americans in Science (SACNAS)

DEPARTMENTAL AND UNIVERSITY SERVICE

Academic and Institutional Committees:

At Princeton University

2010-2012, Faculty Fellow for the Men's Wrestling Team
2009-2012, Graduate Admissions Committee, Department of Molecular Biology
2009-2012, Faculty Member Facilities Committee (Mass Spectrometry Facility)
2008-2012, Undergraduate Faculty Adviser for the Wilson College
2008-2012, Wilson College Shapiro Prize Nomination Committee
2008-2012, Faculty Fellow for the Women's Field Hockey Team

At the University of Pennsylvania

2020-present Committee on Conflicts of Interest
2020-present Committee on PSOM Portrait Review
2020-present Committee on Penn Health-Tech Covid-19 Faculty Salon
2019-present Chair, Department of Biochemistry and Biophysics Diversity and Inclusion Committee
2019 Member, Search Committee, Department of Biochemistry and Biophysics Junior Faculty
2019-present Faculty Advisor, Penn School of Medicine Metabolomics Core
2018-present Chair, University Council on Diversity and Equity
2018 Member, Search Committee, Department of Biochemistry and Biophysics Junior Faculty
2018 Member, Search Committee, Epigenetics Institute Junior Faculty

2017-present Committee on Appointments and Promotions (COAP)
2017 Member, Search Committee, Department of Biochemistry and Biophysics Junior Faculty Search
2016 Member, Search Committee, Department of Chemistry Junior Faculty Search
2016 Member, Search Committee, Department of Biochemistry and Biophysics Junior Faculty Search
2016 Member, Search Committee, Department of Medicine Junior Faculty Search
2016-present Founding Faculty Adviser for Penn SACNAS Chapter
2016 Member, Committee for SOM Technology Advancement
2016 Member, Committee for Industry Relationships
2016-present Faculty Director, Penn School of Medicine Quantitative Proteomics Resource Core
2015 Member, Search Committee, Epigenetics Institute Junior Faculty
2015-present Chair of Admissions for the Biochemistry and Molecular Biophysics (BMB) Graduate program
2015-present Vice-Chair of the BMB Graduate Program
2015-present Faculty Adviser for PennPREP PostBac Program
2015 Member, Search Committee, Microbiology Departmental Chair Faculty Search
2015 Member, Search Committee, Department of Medicine Clinical Junior Faculty Search
2015 Member, Search Committee, Department of Chemistry Junior Faculty Search
2014 Member, Search Committee, Epigenetics Institute Junior Faculty
2013-present Member, Executive Committee, BMB Graduate Group
2013-present Member, Retreat Planning Committee, BMB Graduate Group
2013-present Director for Diversity Recruitment, BMB Graduate Group
2012-present Committee Member, BMB PhD Admissions Committee

Teaching Contributions:

GCB Experimental Genome Science (2020)
CHEM 4661 Proteomics (at Villanova University, 2018-present)
BMB 509 Structural and Mechanistic Biochemistry (2017-present)
BMB 585 Signaling Pathways in Cancer (2017-present)
CAMB/BIOL 483 Epigenetics in Human Disease (2017-present)
GCB 752 Seminar in Genomics (2017-present)
BMB 626 Mass Spectrometry and Proteomics (2014, 2016, 2018, 2020)
Metabolism/Biochemistry Course for 1st year medical students (2014-present)
BMB 508 Macromolecular Biophysics: Principles and Methods (2013, 2014)

Mentoring Contributions:

Junior Faculty Mentoring Committees

Jeremy Wilusz (Biochemistry and Biophysics, 2014-2019)
Kenji Murakami (Biochemistry and Biophysics, 2015-present)
Irfan Asangani (Cancer Biology, 2015-present)
Donita Brady (Cancer Biology, 2016-present)
Kushol Gupta (Biochemistry and Biophysics, 2017-present)
Megan Matthews (Chemistry, 2017-present)
Kathy Liu (Biochemistry and Biophysics, 2018-present)
George Burslem (Biochemistry and Biophysics, 2020-present)

Postdoctoral Mentoring Committees

Michael Kearse (2017-2019)
Andrew Edmonson (2019-present)

Current PhD Students

Julia Tasca (BMB, 2020-present)
Janice Reynaga (BMB, 2019-present)
Michael Gilbert (BMB, 2019-present)
Neha Srikumar (BMB, 2019-present)
Heejong Kim (BMB, 2018-present)
Khadija Wilson (PGG, 2018-present)
Yekaterina Kori (BMB, 2017-present)
Richard Lauman (BMB, 2017-present)
Mariel Mendoza (BMB, 2017-present)
Amber Weiner (GCB, 2015-present)
Mariel Coradin (BMB, 2015-present)
Kevin Janssen (BMB, 2015-present)

Former PhD Students (Year Graduated)
Samuel Wein (UPenn, 2019)
Dylan Marchione (UPenn, 2019)
Kelly Karch (UPenn, 2018)
Anna Arnaudo (Princeton University, 2015)
Rosalyn Molden (Princeton University, 2014)
Michelle Gonzales (Princeton University, 2014)
Laura-Mae Britton (Princeton University, 2014)
Adam Evertts (Princeton University, 2013)
Barry Zee (Princeton University, 2013)
Mariana Plazas-Mayorca (Princeton University, 2011)

Current PhD Thesis Committees
Thesis Committee Member, Hannah Ritcher (BMB)
Thesis Committee Member, Rina Fujiwara (BMB)
Thesis Committee Member, Katelyn Bustin (Chemistry)
Thesis Committee Member, Elaine Zhou (Chemistry)
Thesis Committee Member, Suhee Chang (PGG)
Thesis Committee Member, Kevin Gillespie (PGG)
Thesis Committee Member, Yang Xu (GCB)
Thesis Committee Member, Karen Wong (CAMB)
Thesis Committee Member, Mary Szurgot (BMB)
Thesis Committee Member, Shangshang Wang (Chemistry)
Thesis Committee Member, Pamela Gallo (BMB)

Former PhD Thesis Committees (Year Graduated)
Thesis Committee Member, Lauren Paolella (BMB, 2020)
Thesis Committee Member, Leah Gottlieb (Chemistry, 2019)
Thesis Committee Member, Mischa Li (CAMB, 2018)
Thesis Committee Member, Kellie Woll (PGG, 2017)
Thesis Committee Member, Jarett Remsberg (BMB, 2017)
Thesis Committee Member, Rebecca Rivard (CAMB, 2017)
Thesis Committee Member, Carrie Sims (BMB, 2017)
Thesis Committee Member, Mohd Farid Abdul Halim (Biology, SAS, 2017)
Thesis Committee Member, Sharanya Sivanand (CAMB, 2017)
Thesis Committee Member, Atrish Bagchi (BMB, 2016)
Thesis Committee Member, Rianne Esquivel (CAMB, 2016)

Thesis Committee Member, Monica Liu (BMB, 2016)
Thesis Committee Member, Mansi Shinde (PGG, 2016)
Thesis Committee Member, Sumeet Khetarpal (CAMB, 2016)
Thesis Committee Member, Lucy Guo (BMB, 2016)
Thesis Committee Member, Steve Artim (BMB, 2015)
Thesis Committee Member, Neo Wu (BMB, 2015)
Thesis Committee Member, Adam Kraya (BMB, 2015)
Thesis Committee Member, Roland Rivera-Santiago (BMB, 2015)

RESEARCH INTERESTS

The overall goals of my research are to develop methodologies including mass spectrometry based proteomic approaches for the analysis of protein post-translational modifications (PTMs) and modified proteomes. We specialize in high-throughput and quantitative analysis of many classes of modified proteins, especially epigenetic histone PTMs. We have recently developed methods for rapid quantification of nearly all single core histone PTMs and variants in a single analysis including detection of simultaneously occurring combinatorial PTMs. Our efforts have also crossed into software development for analysis of electron transfer dissociation data of multiply modified proteins and proteomes (Middle and Top Down proteomics) and for enhanced quantification and de novo discovery of novel protein modifications. Biologically, we are particularly interested in understanding the roles of protein PTMs during cancer pathogenesis, neurodegeneration, cell differentiation and viral infection. Currently my work has been cited over 28,000 times, and I have an h-index of 82 and an i10 index of 296.

PEER-REVIEWED PUBLICATIONS (only last 5 years)

317. The catalytic domain of the histone methyltransferase NSD2/MMSET is required for the generation of B1 cells in mice. Dobenecker MW, Marcello J, Becker A, Rudensky E, Bhanu NV, Carrol T, Garcia BA, Prinjha R, Yurchenko V, Tarakhovsky A. FEBS Lett. 2020 Aug 9. doi: 10.1002/1873-3468.13903.

316. The Viral Polymerase Complex Mediates the Interaction of Viral Ribonucleoprotein Complexes with Recycling Endosomes during Sendai Virus Assembly. Genoyer E, Kulej K, Hung CT, Thibault PA, Azarm K, Takimoto T, Garcia BA, Lee B, Lakdawala S, Weitzman MD, López CB. mBio. 2020 Aug 25;11(4):e02028-20.

315. Extracellular Vesicle and Particle Biomarkers Define Multiple Human Cancers. Hoshino A, Kim HS, Bojmar L, Gyan KE, Cioffi M, Hernandez J, Zambirinis CP, Rodrigues G, Molina H, Heissel S, Mark MT, Steiner L, Benito-Martin A, Lucotti S, Di Giannatale A, Offer K, Nakajima M, Williams C, Nogués L, Pelissier Vatter FA, Hashimoto A, Davies AE, Freitas D, Kenific CM, Ararso Y, Buehring W, Lauritzen P, Ogitani Y, Sugiura K, Takahashi N, Alečković M, Bailey KA, Jolissant JS, Wang H, Harris A, Schaeffer LM, García-Santos G, Posner Z, Balachandran VP, Khakoo Y, Raju GP, Scherz A, Sagi I, Scherz-Shouval R, Yarden Y, Oren M, Malladi M, Petriccione M, De Braganca KC, Donzelli M, Fischer C, Vitolano S, Wright GP, Ganshaw L, Marrano M, Ahmed A, DeStefano J, Danzer E, Roehrl MHA, Lacayo NJ, Vincent TC, Weiser MR, Brady MS, Meyers PA, Wexler LH, Ambati SR, Chou AJ, Slotkin EK, Modak S, Roberts SS, Basu EM, Diolaiti D, Krantz BA, Cardoso F, Simpson AL, Berger M, Rudin CM, Simeone DM, Jain M, Ghajar CM, Batra SK, Stanger BZ, Bui J, Brown KA, Rajasekhar VK, Healey JH, de Sousa M, Kramer K, Sheth S, Baisch J, Pascual V, Heaton TE, La Quaglia MP, Pisapia DJ, Schwartz R, Zhang H, Liu Y, Shukla A, Blavier L, DeClerck YA, LaBarge M, Bissell MJ, Caffrey TC, Grandgenett PM, Hollingsworth MA, Bromberg J, Costa-Silva B, Peinado H, Kang Y, Garcia BA, O'Reilly EM, Kelsen D, Trippett TM, Jones DR, Matei IR, Jarnagin WR, Lyden D. Cell. 2020 Aug 20;182(4):1044-1061.

314. N6-methyladenosine and RNA secondary structure affect transcript stability and protein abundance during systemic salt stress in Arabidopsis. Kramer MC, Janssen KA, Palos K, Nelson ADL, Vandivier LE, Garcia BA, Lyons E, Beilstein MA, Gregory BD. Plant Direct. 2020 Jul 24;4(7):e00239.

313. Histone H3.3 phosphorylation amplifies stimulation-induced transcription. Armache A, Yang S, Martínez de Paz A, Robbins LE, Durmaz C, Cheong JQ, Ravishankar A, Daman AW, Ahimovic DJ, Klevorn T, Yue Y, Arslan T, Lin S, Panchenko T, Hrit J, Wang M, Thudium S, Garcia BA, Korb E, Armache KJ, Rothbart SB, Hake SB, Allis CD, Li H, Josefowicz SZ. Nature. 2020 Jul 22. doi: 10.1038/s41586-020-2533-0. Online ahead of print.

312. Plasma proteomic profiling suggests an association between antigen driven clonal B cell expansion and ME/CFS. Milivojevic M, Che X, Bateman L, Cheng A, Garcia BA, Hornig M, Huber M, Klimas NG, Lee B, Lee H, Levine S, Montoya JG, Peterson DL, Komaroff AL, Lipkin WI. PLoS One. 2020 Jul 21;15(7):e0236148.

311. Adenovirus-mediated ubiquitination alters protein-RNA binding and aids viral RNA processing. Herrmann C, Dybas JM, Liddle JC, Price AM, Hayer KE, Lauman R, Purman CE, Charman M, Kim ET, Garcia BA, Weitzman MD. Nat Microbiol. 2020 Jul 13. doi: 10.1038/s41564-020-0750-9. Online ahead of print.

310. Histone Acetyltransferase MOF Blocks Acquisition of Quiescence in Ground-State ESCs through Activating Fatty Acid Oxidation. Khoa LTP, Tsan YC, Mao F, Kremer DM, Sajjakulnukit P, Zhang L, Zhou B, Tong X, Bhanu NV, Choudhary C, Garcia BA, Yin L, Smith GD, Saunders TL, Bielas SL, Lyssiotis CA, Dou Y. Cell Stem Cell. 2020 Jun 24:S1934-5909(20)30272-1.

309. SIRT6 mono-ADP ribosylates KDM2A to locally increase H3K36me2 at DNA damage sites to inhibit transcription and promote repair. Rezazadeh S, Yang D, Biashad SA, Firsanov D, Takasugi M, Gilbert M, Tombline G, Bhanu NV, Garcia BA, Seluanov A, Gorbunova V. Aging (Albany NY). 2020 Jun 25;12(12):11165-11184.

308. Improvements on the quantitative analysis of Trypanosoma cruzi histone post translational modifications: Study of changes in epigenetic marks through the parasite's metacyclogenesis and life cycle. de Lima LP, Poubel SB, Yuan ZF, Rosón JN, de Luna Vitorino FN, Holetz FB, Garcia BA, da Cunha JPC. J Proteomics. 2020 May 29:103847. doi: 10.1016/j.jprot.2020.103847.

307. Metabolic Regulation of the Epigenome Drives Lethal Infantile Ependymoma. Michealraj KA, Kumar SA, Kim LJY, Cavalli FMG, Przelicki D, Wojcik JB, Delaidelli A, Bajic A, Saulnier O, MacLeod G, Vellanki RN, Vladoiu MC, Guilhamon P, Ong W, Lee JJY, Jiang Y, Holgado BL, Rasnitsyn A, Malik AA, Tsai R, Richman CM, Juraschka K, Haapasalo J, Wang EY, De Antonellis P, Suzuki H, Farooq H, Balin P, Kharas K, Van Ommeren R, Sirbu O, Rastan A, Krumholtz SL, Ly M, Ahmadi M, Deblois G, Srikanthan D, Luu B, Loukides J, Wu X, Garzia L, Ramaswamy V, Kanshin E, Sánchez-Osuna M, El-Hamamy I, Coutinho FJ, Prinos P, Singh S, Donovan LK, Daniels C, Schramek D, Tyers M, Weiss S, Stein LD, Lupien M, Wouters BG, Garcia BA, Arrowsmith CH, Sorensen PH, Angers S, Jabado N, Dirks PB, Mack SC, Agnihotri S, Rich JN, Taylor MD. Cell. 2020 May 20:S0092-8674(20)30553-5.

306. Disruption of ATRX-RNA interactions uncovers roles in ATRX localization and PRC2 function. Ren W, Medeiros N, Warneford-Thomson R, Wulfridge P, Yan Q, Bian J, Sidoli S, Garcia BA, Skordalakes E, Joyce E, Bonasio R, Sarma K. Nat Commun. 2020 May 6;11(1):2219.

305. Human chimeric antigen receptor macrophages for cancer immunotherapy. Klichinsky M, Ruella M, Shestova O, Lu XM, Best A, Zeeman M, Schmierer M, Gabrusiewicz K, Anderson NR, Petty NE, Cummins KD, Shen F, Shan X, Veliz K, Blouch K, Yashiro-Ohtani Y, Kenderian SS, Kim MY, O'Connor RS, Wallace

SR, Kozlowski MS, Marchione DM, Shestov M, Garcia BA, June CH, Gill S. Nat Biotechnol. 2020 Mar 23. doi: 10.1038/s41587-020-0462-y. [Epub ahead of print]

304. Comprehensive Map of the Artemisia annua Proteome and Quantification of Differential Protein Expression in Chemotypes Producing High vs Low Content of Artemisinin. Chen M, Yan T, Ji L, Yu D, Sidoli S, Yuan Z, Cai C, Chen J, Tang Y, Shen Q, Pan Q, Fu X, Xin K, Liao L, Garcia BA, Yan W, Tang K. Proteomics. 2020 May;20(10):e1900310.

303. Unraveling the RNA modification code with mass spectrometry. Lauman R, Garcia BA. Mol Omics. 2020 Apr 14. doi: 10.1039/c8mo00247a. [Epub ahead of print]

302. Bacterial colonization reprograms the neonatal gut metabolome. Bittinger K, Zhao C, Li Y, Ford E, Friedman ES, Ni J, Kulkarni CV, Cai J, Tian Y, Liu Q, Patterson AD, Sarkar D, Chan SHJ, Maranas C, Saha-Shah A, Lund P, Garcia BA, Mattei LM, Gerber JS, Elovitz MA, Kelly A, DeRusso P, Kim D, Hofstaedter CE, Goulian M, Li H, Bushman FD, Zemel BS, Wu GD. Nat Microbiol. 2020 Jun;5(6):838-847.

301. Disruption of the Plasmodium falciparum life cycle through transcriptional reprogramming by inhibitors of Jumonji demethylases. Matthews KA, Senagbe KM, Notzel C, Gonzalez CA, Tong X, Rijo-Ferreira F, Natarajan BV, Miguel-Blanco C, Lafuente-Monasterio MJ, Garcia BA, Kafsack BF, Martinez ED. ACS Infect Dis. 2020 May 8;6(5):1058-1075.

300. Reproductive tract extracellular vesicles are sufficient to transmit intergenerational stress and program neurodevelopment. Chan JC, Morgan CP, Adrian Leu N, Shetty A, Cisse YM, Nugent BM, Morrison KE, Jašarević E, Huang W, Kanyuch N, Rodgers AB, Bhanu NV, Berger DS, Garcia BA, Ament S, Kane M, Neill Epperson C, Bale TL. Nat Commun. 2020 Mar 20;11(1):1499.

299. Global regulation of the histone mark H3K36me2 underlies epithelial plasticity and metastatic progression. Yuan S, Natesan R, Sanchez-Rivera FJ, Li J, Bhanu NV, Yamazoe T, Lin JH, Merrell AJ, Sela Y, Thomas SK, Jiang Y, Plesset JB, Miller EM, Shi J, Garcia BA, Lowe SW, Asangani IA, Stanger BZ. Cancer Discov. 2020 Mar 18. pii: CD-19-1299.

298. Comparative differential cuproproteomes of Rhodobacter capsulatus reveal novel copper homeostasis related proteins. Selamoglu N, Önder Ö, Öztürk Y, Khalfaoui-Hassani B, Blaby-Haas CE, Garcia BA, Koch HG, Daldal F. Metallomics. 2020 Apr 1;12(4):572-591.

297. Lysine 4 of histone H3.3 is required for embryonic stem cell differentiation, histone enrichment at regulatory regions and transcription accuracy. Gehre M, Bunina D, Sidoli S, Lübke MJ, Diaz N, Trovato M, Garcia BA, Zaugg JB, Noh KM. Nat Genet. 2020, 52(3):273-282.

296. Bullet points to evaluate the performance of the middle-down proteomics workflow for histone modification analysis. Coradin M, Mendoza MR, Sidoli S, Alpert AJ, Lu C, Garcia BA. Methods. 2020 Feb 15. pii: S1046-2023(19)30173-2.

295. A computational platform for high-throughput analysis of RNA sequences and modifications by mass spectrometry. Wein S, Andrews B, Sachsenberg T, Santos-Rosa H, Kohlbacher O, Kouzarides T, Garcia BA,* Weisser H.* Nat Commun. 2020 Feb 17;11(1):926. *co-corresponding authors

294. HYPERsol: High-Quality Data from Archival FFPE Tissue for Clinical Proteomics. Marchione DM, Ilieva I, Devins K, Sharpe D, Pappin DJ, Garcia BA, Wilson JP, Wojcik JB. J Proteome Res. 2020 Feb 7;19(2):973-983.

293. Native Chromatin Proteomics Reveals a Role for Specific Nucleoporins in Heterochromatin Organization and Maintenance. Iglesias N, Paulo JA, Tatarakis A, Wang X, Edwards AL, Bhanu NV, Garcia BA, Haas W, Gygi SP, Moazed D. Mol Cell. 2020 Jan 2;77(1):51-66.

292. Deep profiling and custom databases improve detection of proteoforms generated by alternative splicing. Agosto LM, Gazzara MR, Radens CM, Sidoli S, Baeza J, Garcia BA*, Lynch KW*. Genome Res. 2019 Dec;29(12):2046-2055. * denote co-corresponding authors

291. Alcohol metabolism contributes to brain histone acetylation. Mews P, Egervari G, Nativio R, Sidoli S, Donahue G, Lombroso SI, Alexander DC, Riesche SL, Heller EA, Nestler EJ, Garcia BA, Berger SL. Nature. 2019 Oct;574(7780):717-721.

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INVITED TALKS

Indiana University School of Medicine Center for Computational Biology and Bioinformatics Retreat (virtual, upcoming 2020)
19th Human Proteome Organization World Congress (virtual, upcoming 2020)
Chemical Biology Program, Memorial Sloan Kettering, New York, NY (virtual, upcoming 2020)
New York Cancer Genome Network, New York, NY (virtual, upcoming 2020)
Department of Chemistry and Biochemistry, University of California, San Diego, CA (virtual, upcoming 2020)
Michael L. Gross Award Lecture, University of Nebraska, Lincoln, NE (virtual seminar 2020)
Department of Biochemistry and Structural Biology, UT Health Science Center, San Antonio, TX (virtual seminar, 2020)
Program Project Retreat, University of Rochester, Rochester, NY (virtual seminar, 2020)
Department of Pharmaceutical Sciences, University of Maryland, Baltimore, MD (invited but cancelled due to COVID-19, 2020)
Department of Chemistry, University of Illinois, Urbana-Champaign, IL (invited but cancelled due to COVID-19, 2020)
Department of Chemistry and Biochemistry, Florida International University, Miami, FL (invited but cancelled due to COVID-19, 2020)
Department of Biochemistry, UNC School of Medicine, Chapel Hill, NC (invited but cancelled due to COVID-19, 2020)
ASBMB Conference, San Diego, CA (invited but conference cancelled due to COVID-19, 2020)
PITTCON Conference, Chicago, IL (2020)
Department of Biological Chemistry and Pharmacology, Harvard Medical School, Boston, MA (2020)
Department of Biochemistry, Boston University School of Medicine, Boston, MA (2020)
Chromatin Consortium, St. Jude Children's Hospital, Memphis, TN (2019)
Marie M. Daly Lecture Series, NYU School of Medicine, New York, NY (2019)
Department of Chemistry, Wichita State University, Wichita, KS (2019)
Department of Biochemistry and Chemistry, University of Delaware, Wilmington, DE (2019)
Northwestern University Biophysics Symposium, Evanston, IL (2019)
Advancing Mass Spectrometry for Biophysics and Structural Biology Conference, Amherst, MA (2019)

Department of Molecular Biology, Princeton University, Princeton, NJ (2019)
US HUPO Conference, Bethesda, MD (2019)
Department of Genome Sciences, University of Washington, Seattle, WA (2019)
Department of Biological Chemistry, University of California Los Angeles, CA (2019)
Agilent Technologies, Santa Clara, CA (2019)
Department of Biological Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD (2019)
President's Lecture, Memorial Sloan Kettering, New York, NY (2018)
Chromatin and Chromosomes Workshop, Johns Hopkins University, Baltimore, MD (2018)
Department of Chemistry and Biochemistry, University of Oklahoma, Norman OK (2018)
Institute for Chemical Biology, Vanderbilt University, Nashville, TN (2018)
Epigenetics Symposium, St. Jude Children's Hospital, Memphis, TN (2018)
Department of Chemistry and Biochemistry, Cal State University Fullerton, CA (2018)
Department of Chemistry and Biochemistry, Purdue University, IN (2018)
17th Human Proteome Organization World Congress, Orlando, FL (2018)
Human Proteome Symposium, University of Wisconsin, Madison, WI (2018)
Department of Biochemistry and Chemistry, University of Alaska, Fairbanks, AK (2018)
American Society for Mass Spectrometry Conference (ASMS), San Diego, CA (2018)
Department of Biology, University of Rochester, Rochester, NY (2018)
Institute for Genomic Biology, University of Illinois, Champaign, IL (2018)
ASBMB Conference, San Diego, CA (2018)
Department of Biochemistry and Chemistry, University of South Carolina, Columbia, SC (2018)
Department of Biochemistry, Rutgers University, New Brunswick, NJ (2018)
Department of Chemistry, Northeastern University, MA (2017)
National Institutes of Health, Proteomics Interest Group, Division, Bethesda, MD (2017)
Department of Molecular Medicine, Scripps Research Institute, San Diego, CA (2017)
13th US HUPO, San Diego, CA (2017)
Department of Molecular Biosciences, University of Texas, Austin TX (2017)
PITTCON Conference, Chicago, IL (2017)
Department of Chemistry and Biochemistry, University of Texas at Arlington, TX (2017)
Department of Chemistry, University of Virginia, Charlottesville, VA (2017)
Mt. Sinai School of Medicine, Department of Pharmacological Sciences, New York, NY (2016)
Department of Biochemistry, Ohio State University, Columbus, OH (2016)
University of Minnesota Developmental Biology Symposium, Minneapolis, MN (2016)
EMBL-Wellcome Trust Conference, Heidelberg, Germany (2016)
30th Protein Society Meeting, Baltimore, MD (2016)
64th American Society for Mass Spectrometry Conference, San Antonio, TX (2016)
MD Anderson Center for Cancer Epigenetics, Smithville, TX (2016)
Beadle Center for Biotechnology/University of Nebraska-Lincoln (2016)
EpiCypher 2016 - Biological & Clinical Frontiers in Epigenetics, San Juan, Puerto Rico (2016)
University of Minnesota Epigenetics Symposium, Minneapolis, MN (2016)
Stowers Institute for Medical Research, Kansas City, MO (2016)
University of Illinois at Chicago, Chicago, IL (2016)
Van Andel Research Institute, Grand Rapids, MI (2016)
UT Southwestern Medical Center, Dallas, TX (2016)
Weill-Cornell Medical Center, New York, NY (2015)
ETP Symposium Inc., Calgary, Canada (2015)
Canadian Cancer Research Conference, Montreal, Canada (2015)
Ahmanson Translational Imaging Division, UCLA, Los Angeles, CA (2015)
Cedar Sinai Advanced Clinical Biosystems Research Institute, Los Angeles, CA (2015)
14th World HUPO Congress, Vancouver, Canada (2015)

250th National American Chemical Society Conference, Boston, MA (2015)
Department of Chemistry, UC Riverside, Riverside, CA (2015)
Department of Biochemistry & Molecular Biology, Drexel University, Philadelphia, PA (2015)
Department of Biochemistry, Emory University, Atlanta, GA (2015)
US HUPO, Tempe, AZ (2015)
PITTCON Conference, New Orleans, LA (2015)
Center for Systems and Synthetic Biology, University of Texas, Austin, TX (2015)
Department of Biochemistry and Molecular Pharmacology, NYU School of Medicine, New York, NY (2015)
Tumor Biology Group, Stanford University, Palo Alto, CA (2015)
ThermoFisher Scientific Mass Spectrometry User Meeting, Boston, MA (2014)
ThermoFisher Scientific Mass Spectrometry User Meeting, Somerset, NJ (2014)
11th International Symposium on Mass Spectrometry in the Health and Life Sciences, San Francisco, CA (2014)
248th National American Chemical Society Conference, San Francisco, CA (2014)
Delaware Valley Mass Spectrometry Discussion Group, Villanova PA (2014)
Eli Lilly, Indianapolis, IN (2014)
Epizyme, Cambridge, MA (2014)
H3 Biomedicine, Cambridge, MA (2014)
62th American Society for Mass Spectrometry Conference, Baltimore, MD (2014)
Universidad Nacional Autónoma de México - Licenciatura en Ciencias Genómicas, Cuernavaca, MX (2014)
Ivy Symposium, Harvard University, Cambridge, MA (2014)
Yale University, New Haven, CT (2014)
US HUPO, Seattle, WA (2014)
PITTCON Conference, Chicago, IL. (2014)
University of North Carolina, Greensboro, NC (2014)
CRG Proteomics Symposium, Barcelona, Spain (2013)
Brazilian Biosciences National Laboratory Proteomics Workshop, São Paulo, Brazil (2013)
University of Rochester Medical Center, Rochester, NY (2013)
Department of Biochemistry and Chemistry, University of Norte Dame, South Bend, IN (2013)
Symposium of Mass Spectrometry, Proteomics and Peptidomics, Mexican Society for Proteomics (Plenary Speaker), Cancun, Mexico (2013)
Department of Biochemistry and Chemistry, University of Texas, Austin, TX (2013)
Symposium on Epigenetics, Genome Integrity and Stem Cell Biology, Montreal, Canada (2013)
61th American Society for Mass Spectrometry Conference, Minneapolis, MN (2013)
Bristol Myers Squibb, Lawrenceville, NJ (2013)
AbbVie, Inc., Chicago, IL (2013)
From Genome to Proteome: Proteomic Innovations and Technologies Symposium (Keynote Speaker), University of North Carolina, Chapel Hill, NC (2013)
Integrated Biology Symposium: Multi-omics Approaches and Technologies, University of Pennsylvania School of Medicine, Philadelphia, PA (2013)
Emerging Technologies in Proteomics Symposium, University of Massachusetts, Worcester, MA (2013)
Department of Genetics, Dartmouth School of Medicine, Hanover, NH (2013)
Epigenetics and Chromatin: Interactions and Processes Conference, Boston, MA (2013)
Laboratory of Chromatin Biology, Rockefeller University, New York, NY (2013)
Association for Biomolecular Resources Federation (ABRF) Conference, Palm Springs (2013)
Pfizer Inc., San Diego, CA (2013)
Target on Discovery Conference: Targeting Histone Methyltransferases and Demethylases, Boston, MA (2012)
11th World HUPO Congress, Boston, MA (2012)
Institute for Genomic Biology, University of Illinois, Urbana-Champaign, IL (2012)
Korean Society for Biochemistry and Molecular Biology Annual Conference, Seoul, South Korea (2012)
EPI/GENoME LoGIC Symposium, NYU Center for Genomics and Systems Biology, New York, NY (2012)

60th American Society for Mass Spectrometry Conference, Vancouver, Canada (2012)
Department of Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN (2012)
Netherlands Proteomics Centre, Utrecht University, Utrecht, Netherlands (2012)
Department of Chemistry, University of California Davis, Davis, CA (2012)
Department of Biochemistry, University of Medicine & Dentistry of New Jersey, Newark, NJ (2012)
Department of Biological Chemistry, UCLA School of Medicine, Los Angeles, CA (2011)
Department of Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA (2011)
Department of Biochemistry and Biophysics, Penn School of Medicine, Philadelphia, PA (2011)
Wisconsin Institute for Discovery, University of Wisconsin, Madison, WI (2011)
Amgen, Cambridge, MA (2011)
Novartis, Cambridge, MA (2011)
Constellation Pharmaceuticals, Cambridge, MA (2011)
Eli Lilly, Indianapolis, IN (2011)
Genentech, San Francisco, CA (2011)
GlaxoSmithKline meeting, Princeton University, Princeton, NJ (2011)
59th American Society for Mass Spectrometry Conference, Denver, CO (2011)
Department of Pharmacology, University of California, San Diego, CA (2011)
Proteomics 2011 Conference, Children's Hospital Boston, Boston, MA (2011)
Emerging Technologies in Proteomics Symposium, University of Massachusetts, Worcester, MA (2011)
New Jersey American Chemical Society MS Discussion Group Meeting, Somerset, NJ (Award Lecture, 2011)
US Human Proteome Organization (HUPO) Conference, Raleigh, NC (2011)
U.S. Human Proteome Organization (HUPO) Conference Workshop, Raleigh, NC (2011)
PITTCON Conference, Atlanta, GA (2011)
Epigenetics Program, University of Pennsylvania Medical School, Philadelphia, PA (2011)
Department of Chemistry, University of Wisconsin, Madison WI (McElvain Seminar Invited Speaker) (2011)
Vanderbilt Institute for Chemical Biology, Vanderbilt University, Nashville, TN (2011)
Association for Biomolecular Resources Federation (ABRF) Conference, San Antonio, TX (2011)
British Society for Proteome Research Conference, Cambridge, UK (Keynote Lecture) (2010)
Korean Human Proteome Organization Conference, Seoul National University, Seoul, South Korea (Plenary Lecture) (2010)
EWHA University, Seoul, South Korea (2010)
Mount Sinai School of Medicine, New York, NY (2010)
New Jersey Governor's Conference on Partnering in Cancer Research", The Systems Biology of Cancer, Institute for Advanced Studies, Princeton, NJ (2010)
Experimental Biology Conference, ASBMB, Anaheim, CA (2010)
GlaxoSmithKline, King of Prussia, PA (2010)
Keystone Conference on Chromatin Structure, Taos, NM (2010)
Department of Pathology, Harvard Medical School, Cambridge, MA (2010)
The University of Pennsylvania Medical School, Computational Genomics Program, Philadelphia, PA (Student Invited Speaker) (2010)
Albert Einstein Medical College, New York, NY (2010)
Rockefeller University, New York, NY (2009)
Institute for Advanced Studies, Princeton University, Princeton, NJ (2009)
Constellation Pharmaceuticals, Cambridge, MA (2009)
Thermo Electron User Meeting, 57th American Society for Mass Spectrometry Conference, Philadelphia, PA (2009)
57th American Society for Mass Spectrometry Conference, Philadelphia, PA (2009)
9th International Symposium on Mass Spectrometry in the Health and Life Sciences, San Francisco, CA (2009)
ThermoFisher Scientific Mass Spectrometry User Meeting, Boston, MA (2009)
ThermoFisher Scientific Mass Spectrometry User Meeting, Somerset, NJ (2009)

Bristol Myers Squibb, Lawrenceville, NJ (2009)
Department of Biochemistry, New York University School of Medicine, New York, NY (2009)
The Wistar Institute, Philadelphia, PA (2009)
Uppsala Conference on Electron Transfer and Electron Capture Dissociation, Madison, WI (2008)
PITTCON conference, New Orleans, LA. (2008)
Eli Lilly, Indianapolis, IN. (2008)
Department of Biochemistry and Chemistry, California State University, Fullerton, CA. (2008)
Thermo Electron Orbitrap User Meeting, Somerset, NJ (2008)
Department of Molecular Biology, Princeton University, Princeton, NJ. (2007)
Department of Biochemistry and Molecular Genetics, University of Virginia School of Medicine, Charlottesville, VA. (2007)
Department of Genome Sciences, University of Washington School of Medicine, Seattle, WA. (2007)
Keystone Symposium: Cell Signaling and Proteomics, Steamboat Springs, CO. (2007)
55th American Society for Mass Spectrometry National Conference, Indianapolis, IN. (2007)
Department of Chemistry, Massachusetts Institute of Technology, Boston, MA. (2007)
54th American Society for Mass Spectrometry National Conference, Seattle, WA. (2006)
Department of Molecular Medicine, Wake Forest University School of Medicine, Winston-Salem, NC. (2006)
Department of Chemistry, University of Illinois, Urbana-Champaign, Urbana, IL. (2005)
National High Magnetic Field Laboratory, Tallahassee, FL. (2005)
Pacific Northwest National Laboratory, Richland, WA. (2005)