Brian David Bower, PhD - Resume

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Website: http://www.BDBLLC.US **Location:** Research Triangle Park, North Carolina
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Summary: An experienced molecular biologist with excellent communication skills, a record of grant funding, expertise with reagent and assay development and validation, and a history of successful collaborative and independent work in large and small laboratories in academic and industry R&D environment.

Education:

University of North Carolina (Chapel Hill, North Carolina)
- Ph.D, Genetics & Molecular Biology **- 2014**
- Graduate Certificate in Bioinformatics and Computational Biology **- 2014**

Ohio University (Athens, Ohio)
- B.S., Biological Sciences (Cellular and Molecular Biology Specialization) **- 2008**
- Minors in Chemistry and History **- 2008**

Work Experience:

Chaperone Therapeutics, Inc.: Durham, NC - **March 2018 to August 2020**
Research Scientist
- Worked on contract for Chaperone Therapeutics, Inc. through BDB LLC.
- Set up and operated Chaperone Therapeutics, Inc.'s lab in the BioLabs North Carolina incubator.
- Coordinated ordering, inventory, sample handling and data management.
- Facilitated acquisition & setup of a LI-COR Odyssey Clx imager.
- Conceived of, developed, validated and employed cell-culture and mouse tissue multiplex-western blot compound screening assays using a LI-COR Odyssey Clx imager.

Brian David Bower LLC (aka BDB LLC): Carrboro, NC **- July 2017 to Present**
Chief Executive Officer / Founder / Scientific Consultant
- Formed company to offer Brian David Bower's labor on a contingent or contract basis.
- Established vendor relationships with clients throughout North Carolina.
- Provided scientific solutions, consulting and contracting in the Research Triangle Park area.
- Established groundwork for ongoing private independent research and development projects.

BASF Corporation (Research Triangle Park, North Carolina) **- January 2017 to March 2018**
Regulatory Protein Biochemist
- Worked on contract for BASF Corp. while employed by Synectics Inc.
- Validated assays to detect and quantify transgenic protein expression in plants, plant tissues and plant derived products (via Protein Simple Wes), to support product development & deregulation.
- Worked in accordance with Environmental Protection Agency (EPA) Good Laboratory Practices (GLPs) in a fast-paced environment.

University of Michigan (Ann Arbor, Michigan) **- October 2014 to November 2016**
Postdoctoral Research Fellow, Laboratory of Dr. Richard Miller
- Won and renewed grants worth over $80,000.
- Planned and conducted experiments to investigate the biology of aging to support publicly and privately funded, collaborative and independent research projects.
- Generated reagents and validated genotyping assays used to create two transgenic mouse lines.
- Mastered techniques relevant to RNA and protein quantification from mouse tissues and mouse cells cultured *in vitro* (e.g. RNA and protein extraction & quantification via NanoDrop and BCA assay, RNA integrity analysis, RT-qPCR and western blotting).

Work Experience: (continued)

University of North Carolina (Chapel Hill, North Carolina) **- August 2009 to September 2014**
Graduate Research Assistant, Laboratory of Dr. Jack Griffith

- Won grants worth over $20,000.
- Engaged in fruitful, interdisciplinary, collaborative research projects with renowned experts, generated high impact publications that characterized gene-therapy vectors (adeno associated virus, AAV) via transmission electron microscopy (TEM) and elucidated mechanisms of RNA folding.
- Independently validated a novel *in vitro* molecular assay to characterize interactions between telomere protection and DNA repair processes.
- Cloned protein expression vectors, purified proteins expressed from said vectors via fast protein liquid chromatography (FPLC, via GE ÄKTA using UNICORN control software) and shared vectors and proteins with the scientific community (on AddGene: addgene.org/Jack_Griffith)

Edison Biotechnology Institute (Athens Ohio): **- April 2007-to-August 2009**
Research Technician, Laboratory of Dr. John Kopchick

- Worked with a diverse, multinational team to explore how hormonal and dietary interventions affect the development of type 2 diabetes mellitus (T2DM) and obesity in mouse models.
- Contributed to high-impact publications, and presented results at international conferences.
- Performed procedures including: mouse husbandry, subcutaneous (SubQ) and intraperitoneal (IP) injections, glucose and insulin tolerance testing, body composition analysis (via Bruker minispec).

Diagnostic Hybrids Inc., acquired by Quidel (Athens Ohio) **- September 2006-to-Sept. 2007**
Laboratory Technician, R&D Department, Virology Section

- Maintained a 27,000-sample viral archive in accordance with regulatory and compliance regimes, including an ISO 13485 quality management system (QMS) to support product development.
- Isolated viruses from human clinical samples following FDA good laboratory practices (GLP) in a Biosafety Level 2 (BSL-2) laboratory, amplified viruses via tissue culture, serotyped and titrated viruses via fluorescence light microscopy, and archived and delivered viruses to R&D staff.

Selected Grants and Awards:

- $80,000 - UM Career Training In the Biology of Aging Training Grant **- 2015 and 2016**
- $20,000 - UNC Genetics and Molecular Biology Training Grant **- 2010**

Selected Publications:

- *Aging Cell*. 2019 Apr;18(2):e12920. 17-α estradiol ameliorates age-associated sarcopenia and improves late-life physical function in male mice but not in females or castrated males. Garratt M, Leander D, Pifer K, Bower B, Herrera JJ, Day SM, Fiehn O, Brooks SV, **Miller RA.**
- *Aging Cell*. 2017 Dec; 16(6): 1256-1266. Sex differences in lifespan extension with acarbose and 17-α estradiol: gonadal hormones underlie male-specific improvements in glucose tolerance and mTORC2 signaling. Garratt M, **Bower B**, Garcia GG, Miller RA.
- *Biochemistry.* 2014 Sep 2;53(34):5485-95. TRF1 and TRF2 differentially modulate Rad51-mediated telomeric and nontelomeric displacement loop formation in vitro. **Bower BD**, Griffith JD.
- *Science.* 2013 Apr 12;340(6129):190-5. 1230715. A guanosine-centric mechanism for RNA chaperone function. Grohman JK, Gorelick RJ, Lickwar CR, Lieb JD, **Bower BD**, Znosko BM, Weeks KM.
- *J Virol.* 2013 Mar;87(6):2994-3002. Biophysical and ultrastructural characterization of adeno-associated virus capsid uncoating and genome release. Horowitz ED, Rahman KS, **Bower BD**, Dismuke DJ, Falvo MR, Griffith JD, Harvey SC, Asokan A. **Cover:** http://jvi.asm.org/content/87/18.cover-expansion
- Kopchick, JJ and **Bower, B**. (2011). Cancer. In: Laron, Z and Kopchick, JJ. *Laron Syndrome – From Man to Mouse.* Heildelberg: Springer-Verlag GmbH Berlin. 495-505.
- *Diabetologia*. 2009 Aug;52(8):1647-55. Growth hormone improves body composition, fasting blood glucose, glucose tolerance and liver triacylglycerol in a mouse model of diet-induced obesity and type 2 diabetes. List EO, Palmer AJ, Berryman DE, **Bower B**, Kelder B, Kopchick JJ.

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