

Brian David Bower, PhD - *Curriculum Vitae* (CV)

SUMMARY:

A PhD molecular biologist with excellent written and verbal communication skills, including funded grant applications, peer reviewed publications, and award-winning presentations, over 10 years' experience in reagent and assay development/validation and a history of collaborative and independent work in large and small laboratories in academic and industry R&D environments.

Online at: http://showcase.bdbllc.us/resumeAndCV/BrianDBowerPhD_CV.docx

PDF at: http://showcase.bdbllc.us/resumeAndCV/BrianDBowerPhD_CV.pdf

CONTACT INFORMATION:

EMAIL:

Business Email: BDB@BDBLLC.US

Personal Email: Brian_Bower@ProtonMail.com

TELEPHONE: 1 (919) 641-9065

ADDRESS: 104-R NC Highway 54 West, Suite # 245
Carrboro, North Carolina 27510-1559
United States of America (USA)

WEBSITES:

Business Website: <http://www.BDBLLC.us>

Business Showcase: <http://www.showcase.BDBLLC.us>

Business LinkedIn: <http://www.Linkedin.com/company/Brian-David-Bower-LLC>

Personal LinkedIn: <http://www.Linkedin.com/in/BrianBowerPhD/>

ResearchGate: http://www.ResearchGate.net/profile/Brian_Bower

TRAINING AND EDUCATION:

PROFESSIONAL CERTIFICATES:

Certiport Information Technology Specialist Certifications:

JavaScript

December 2021

Microsoft Technology Associate (MTA) Certifications:

98-361: Software Development Fundamentals

May 2021

98-388: Introduction to Programming Using Java

December 2020

98-383: Introduction to Programming Using HTML & CSS

December 2020

The Council for Six Sigma Certification (CSSC) Certifications:

Lean Six Sigma White Belt Certification

December 2020

DURHAM TECHNICAL COMMUNITY COLLEGE:



DEGREES, DIPLOMAS, AND CREDENTIALS:

<i>Associate of Applied Science (A.A.S), Software Development</i>	December 2021
<i>Academic Information Technology Certificates</i>	
IT Foundations Certificate	May 2021
Microsoft Developer Certificate	May 2021
Database Programming Certificate	December 2020
Java Developer Certificate	December 2020
Software Development Fundamentals	December 2020

DTCC COURSEWORK DETAILS:

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL:



DEGREES, DIPLOMAS, AND CREDENTIALS:

<i>Doctor of Philosophy (Ph.D.) in Genetics & Molecular Biology</i>	December 2014
<i>Graduate Certificate in Bioinformatics & Computational Biology</i>	December 2014

UNC-CH COURSEWORK DETAILS:

OHIO UNIVERSITY:



DEGREES, DIPLOMAS, AND CREDENTIALS:

<i>Bachelor of Science (B.S. / B.Sc.) Biological Sciences:</i>	June 2008
<i>Cellular and Molecular Biology Degree Specialization:</i>	
<i>Chemistry Minor:</i>	June 2008
<i>History Minor:</i>	June 2008

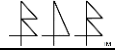
OU COURSEWORK DETAILS:

STANDARDIZED TESTING:

<i>Medical College Admissions Test (MCAT):</i>	32P
<i>Graduate Record Examination (GRE):</i>	1370
<i>ACT Assessment (ACT):</i>	30
<i>SAT Assessment (SAT):</i>	1210

WORK AND EMPLOYMENT:

BDB LLC



Carrboro, NC

Scientific Consultant

7/2017-to-Present

MAJOR ITEMS AND ACHIEVEMENTS:

- **SUMMARY:** Founded and registered a North Carolina Limited Liability Corporation (LLC) and filed annual reports to market scientific and technical consulting and contracting services to clients around Raleigh-Durham & Research Triangle Park, NC.

SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:

- Registered, set up, and maintained a company website via Name.com using a combination of What You See Is What You Get (WYSIWYG) web building tools, HTML, CSS and PHP: <https://www.BDBLLC.US>
- Managed business banking and retirement plans including setup of 401(k) and Roth 401(k) plans, arranging employer matching, rollovers, and plan termination.
- Filed and managed business taxes and tax compliance at state and federal level.
- Established relationships with major vendor, supplier, and outsourcing management services and clients with a focus on Raleigh-Durham-Chapel Hill and RTP areas of NC.
- Bid upon, won and satisfied contracts netting over \$100,000.00 in profits.

CLIENTS:

- **Chaperone Therapeutics, Inc.:** 3/2018-8/2020 [Go to Chaperone Therapeutics Inc.](#)

LOCATION INFORMATION:

Address: 104-R NC Highway 54 West, Suite # 245
Carrboro, NC 27510-1559 USA

Point/s of Contact: Brian Bower, PhD

Website/s: <https://www.BDBLLC.US>

Durham, NC

Associate Principal Scientist

11/2023-to-11/2024

MAJOR ITEMS AND ACHIEVEMENTS:

- **SUMMARY:** Performed clerical, administrative and scientific duties of an Associate Principal Scientist in the Assay Development portion of the Biosciences team (aka the ‘BioA’ team), and performed other duties as assigned.

SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:

- Obtained a Q² Solutions Lean Six Sigma (6σ) Yellow Belt.
- Served on both the Site Safety Committee and the Employee Engagement Committee.
- Identified process inefficiencies with a potential cost of \$150K/year, and documented, proposed, and implemented solutions to mitigate this avoidable cost.
- Designed, prototyped, tested, and deployed process improvements for BioTek/Agilent Plate Washers including the [405 TS](#) and the [405 Select](#) including reagent supply line splitters and Bag-in-Box and Cubitainer based reagent containers.
- Prototyped and tested esoteric process improvements including Freezer (-20 °C) and Ultra-Cold Freezer (-80 °C) desiccant/dehydration systems to mitigate frost/ice buildup, and Ultra-High Frequency (UHF) Radio Frequency Identification (RFID) tag based asset tracking/location systems – including tag tracking within sealed freezers and packed freezer racks.
- Assisted with laboratory system validation processes (LSVP) and system development lifecycle (SDLC) for regulated systems including the Advanced Instruments Artel [Multichannel Verification System \(MVS\)](#) and the Hamilton Company [Microlab Prep](#).
- Developed and oversaw portions of a quarterly skills testing curriculum using the Artel MVS and Data Manager to evaluate analyst’s forward & reverse pipetting competency.
- Developed [Smartsheet](#) products that automated and streamlined portions of contracted method development and LSVP project management for both end-users and management.


LOCATION INFORMATION:

**Durham, NC
Durham, NC****Scientist III
Scientist II****4/2022-to-11/2023
3/2021-to-4/2022*****MAJOR ITEMS AND ACHIEVEMENTS:***

- **SUMMARY:** Performed all clerical, administrative and scientific duties of a Scientist II and III in the Gene and Cell Therapy team (aka the ‘Molecular Team’) in a fast-paced contract research organization (CRO), to include acting as lead-scientist on contracted projects, SOP author, system owner and subject matter expert for regulated analytical equipment.

SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:

- Simultaneously managed a portfolio of active projects related to chimeric antigen receptor (CAR) T cell (CAR T) and natural killer (CAR NK) cell therapies, adeno associated virus (AAV) and lentiviral/retroviral vector gene therapies, and lipid nanoparticle (LNP) delivered gene editing therapies.
- Served as the scientific and technical lead for contracted assay development, qualification, validation, and sample analysis projects under regulatory regimes including GCP, GLP, and GMP, using instruments including the Bio-Rad [QX 200](#) and [QX One](#) droplet digital PCR systems, and the ThermoFisherScientific/Applied Biosystems [QuantStudio 7 Flex](#) Real-Time PCR system, and other equipment.
- Performed and validated nucleic acid extraction (including DNA and RNA) procedures from matrices including mammalian cells and tissues, and formulated gene therapy vectors using manual kits (e.g. Qiagen DNEasy, QIAamp) and automated systems including the Qiagen [QIAcube HT](#) and the ThermoFisherScientific [Kingfisher Flex](#).
- Performed and validated nucleic acid quantification via UV/VIS and florescence methods including the Qiagen [QIAxpert](#), the ThermoFisherScientific [NanoDrop One](#), the Agilent [Take3-Trio](#), and the ThermoFisherScientific [Quant-iT dsDNA Assay Kit](#).
- Performed initial qualification (IQ), operational qualification (OQ), and performance qualification (PQ) to validate instruments and systems for regulated use.
- Trained team members on and facilitated incorporation of laboratory automation into Gene and Cell Therapy team workflows to include the [Scinomix SciPrint VX2](#) for tube labeling and fill operations, and the [Hamilton Microlab Prep](#) for phase separation, sample normalization, PCR plating, and other routine and non-routine procedures.
- Presented findings and communicated stakeholder opinions at industry conferences.

LOCATION INFORMATION:**BOWER ACQUISITIONS LLC**Bower Acqs. LLC **Carrboro, NC****Real Estate Investor****2/2019-to-2/2022*****MAJOR ITEMS AND ACHIEVEMENTS:***

- **SUMMARY:** Founded and registered a North Carolina Limited Liability Corporation (LLC) and filed annual reports to acquire and sell speculative real estate investments.

SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:

- Managed business banking, insurance, and tax accounts.
- Performed private title-searches and surveying to establish chain to title, and investigated zoning, tax, setback issues affecting prospective acquisitions.

LOCATION INFORMATION:

Durham, NC

Research Scientist

3/2018-to-8/2020

MAJOR ITEMS AND ACHIEVEMENTS:

- **SUMMARY:** Independently set up and operated Chaperone Therapeutics, Inc.'s laboratory in the [BioLabs North Carolina incubator](#), and conducted cell- & tissue-based florescent western blotting (e.g., LI-COR) procedures to support drug development.
- Facilitated acquisition & setup of a LI-COR Odyssey Clx imager via arrangements with LI-COR, Biolabs, and Chaperone, saving Chaperone approximately \$50,000.⁰⁰.
- Worked on contract via BDB LLC.

[Go to BDB LLC](#)

SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:

- Cultured, cryopreserved and revived cells as necessary to maintain working cell stocks.
- Developed & qualified cell-based drug-screening assays to determine drug potency (EC50), timecourse of drug effect, and serum shift properties.
- Examined drug toxicity via Lactate Dehydrogenase (LDH) cytotoxicity assays.
- Optimized cell seeding density, adherence time, and drug application window for optimal effect, and lysis procedure to obtain sufficient volume and concentration of sample for meaningful, repeated and replicated western blot analyses.
- Cell counting generally done via Countess II FL automated cell counter.
- Developed and qualified duplex florescent western blotting (e.g., LI-COR Odyssey CLx) procedures to measure primary and secondary drug effects.
- Protein separation generally performed using Bio-Rad Criterion, and transfer generally conducted using ThermoFisherScientific iBlot 2 Semi-Dry Transfer System.
- Produced Microsoft Excel spreadsheets to automate assay setup, randomization, analysis, de-randomization, and facilitate Microsoft PowerPoint presentation drafting.
- Re-qualified procedures for analyzing mouse tissues in PK/PD studies and interacted with Contract Research Organizations (CROs) for sample delivery & management.
- Coordinated routine ordering, inventory, sample handling and data management.

LOCATION INFORMATION:

RTP, NC**Regulatory Protein Biochemist****1/2017-to-2/2018*****MAJOR ITEMS AND ACHIEVEMENTS:***

- **SUMMARY:** Worked at BASF Corp. in the Plant Sciences division performing assays to quantify transgenic protein expression in plant materials to support successful deregulation of BASF and Cargill's collaborative **Latitude™** canola crop product.
- Worked on contract for BASF Corp. via Synectics, Inc. [Go to Synectics](#)

SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:

- Worked with a diverse, multinational team in a fast-paced, entrepreneurial environment, on tight deadlines in a highly regulated environment.
- Shipped, received, and processed study materials and logged them into inventory.
- Prepared samples for analysis via pulverization in a cryogenically chilled mill/mixer.
- Performed water content determination for plant materials and plant-derived products.
- Validated and employed capillary-electrophoresis western blot/immunoassays (i.e., Protein Simple Wes) to detect and quantify transgenic proteins in prepared samples.
- Optimized extraction buffer composition, extraction ratio, loading quantity, and determined limit of detection (LOD) and assay linearity.
- Extracted samples via bead shaking methods (e.g. Qiagen TissueLyser).
- Worked per Environmental Protection Agency (EPA) Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Good Laboratory Practices (GLPs). [Click for GLP Cert.](#)
- Performed initialization and calibrations of equipment including pH meters and scales.
- Coordinated with study directors and the Quality Assurance Unit (QAU/QA) to review Standard Operating Procedures (SOPs), study documents, equipment usage and calibration logs, and test, control and reference (TCR) usage logs.

LOCATION INFORMATION:**SYNECTICS, INC.****Synectics****Chicago, IL****Technical Consultant****1/2017-to-2/2018*****MAJOR ITEMS AND ACHIEVEMENTS:***

- **SUMMARY:** Provided scientific and technical consultation and expertise to Synectics, Inc. clients located in North Carolina on a contract basis.

CLIENTS:

- **BASF Corp.:** 1/2017-2/2018 [Go to BASF Corp](#)

LOCATION INFORMATION:

MAJOR ITEMS AND ACHIEVEMENTS:

- **SUMMARY:** Worked in the laboratory of Dr. Richard Miller in the Career Training in the Biology of Aging program designing and conducting experiments investigating aging biology and other topics relevant to the NIH Interventions Testing Program.
- Worked with a diverse multinational team on large-scale, multi-site collaborations.
- Competed for, won, and renewed grants worth \$86,556.⁰⁰. [Go to Grants/Awards](#)
- Contributed mouse tissue harvesting, sample preparation, western blotting and qPCR expertise to support two Aging Cell publications investigating the effects of gender hormone modulation on mouse lifespan and healthspan. [Go to Related Pubs.](#)
- Won an award for best postdoctoral research presentation. [Go to Grants/Awards](#)

SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:

- Routinely isolated mouse primary skin fibroblast *ex vivo* via collagenase digestion and manipulated and passaged said cells *in vitro* via standard and novel cell culture techniques to support drug screening, and other projects.
- Performed live cell counting with conventional and automated hemocytometers.
- Cryopreserved and revived cells as needed to maintain adequate working stocks.
- Sacrificed and dissected mice to retrieve tissues including liver, kidney, heart, lungs, assorted muscles and fat depots, skin, whole brain and brain sections.
- Cryogenically processed obtained mouse tissue into homogenous powder via liquid nitrogen (LN₂) chilled mortar and pestle, and BioPulverizer based methods.
- Purified RNA from homogenized tissues and cells using TRIzol or Qiagen RNeasy kits, quantified RNA via NanoDrop or Quant-iT RiboGreen assay, analyzed RNA integrity using an Agilent 2100 Bioanalyzer, quantified RNA expression by SYBR Green real time quantitative PCR (RT-qPCR) using a Thermo Fisher Scientific / Applied Biosystems StepOnePlus Real-Time PCR System.
- Extracted protein from tissues and cells, quantified via plate-based colorimetric assays (Bradford, BCA), separated proteins via SDS-PAGE and analyzed protein expression by chemiluminescent (e.g. HRP/ECL) western/immunoblotting, and analyzed expression using ImageJ and other image analysis software
- Performed protein transfer to membranes via both wet and semi-dry methods.
- Extracted DNA from via direct lysis and kit-based methods and performed PCR and probe-based (e.g. TaqMan) RT-qPCR genotyping to maintain mouse colonies.
- Assisted with design and data analysis for an *in vitro* high throughput drug screen.
- Cloned transgene expression vectors used to establish three novel transgenic mouse lines and developed and validated genotyping and gene expression analysis procedures to characterize the resulting mice.

LOCATION INFORMATION:

MAJOR ITEMS AND ACHIEVEMENTS:

- **SUMMARY:** Worked in the laboratory of Dr. Jack Griffith as part of the Curriculum in Genetics and Molecular Biology, developing and conducting experiments to investigate telomere biology, and other topics related to ongoing collaborations.
- Worked with small, close-knit, but diverse team on collaborative projects.
- Competed for and won grants worth \$21,180.⁰⁰. [Go to Grants](#)
- Conducted an independent research project to investigate a functional interaction between DNA repair and telomere protection proteins: [Go to Related Pubs.](#)
- Contributed protein expression and purification expertise for a Science publication that elucidated a guanosine centric mechanism RNA folding: [Go to Related Pubs.](#)
- Contributed transmission electron microscopy (TEM) experience for a Journal of Virology publication that elucidated aspects of gene therapy vector capsid/genome interactions, which was featured on that issues cover. [Go to Related Pubs.](#)
- Presented research at conferences including Cold Springs Harbor. [Go to Meetings](#)

SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:

- Cloned vectors including *E. coli* protein expression constructs, and plasmids containing repetitive or interesting DNA elements for molecular biology use via procedures including: plasmid purification via Qiagen kits, restriction endonuclease (RE) digestion, adapter and genotyping primer design and polymerase chain reaction (PCR) optimization, agarose gel electrophoresis, gel purification, dephosphorylation, ligation, transformation into chemically or electrocompetent cells, plating/streaking for isolation, colony picking and blue/white selection, and confirmatory DNA sequencing.
- Example plasmids are available on Addgene: www.addgene.org/Jack_Griffith/
- Induced and purified proteins from said vectors via conventional and fast protein liquid chromatography (FPLC) using the GE ÄKTA protein purification system and UNICORN software using techniques including: isopropyl β -D-1-thiogalactopyranoside (IPTG) induction, optical density (OD) monitoring, cell lysis via physical (e.g. sonication) and chemical/biochemical means (e.g. Lysozyme, DNase, RNase, Benzonase), clarification via ultracentrifugation, protein separation via SDS-PAGE, purity analysis via Coomassie blue or silver staining, protein quantification via colorimetric assays including Bradford assays, and buffer exchange via dialysis.
- Developed a novel *in vitro* fluorescent displacement loop (D-loop) electrophoretic mobility shift assay (EMSA) to quantify enzymatic activity between purified proteins.
- Examined the interaction of proteins and DNAs, and stability of adeno-associated virus (AAV) capsid/genome interactions via transmission electron microscopy (TEM).

LOCATION INFORMATION:

MAJOR ITEMS AND ACHIEVEMENTS:

- **SUMMARY:** Worked at the Edison Biotechnology Institute in the laboratory of Dr. John Kopchick under the guidance of Dr. Edward List investigating the effects of hormonal and dietary interventions on the development of type 2 diabetes mellitus (T2DM) and obesity in mouse models.
- Worked with a diverse multinational team on collaborative R01 projects.
- Contributed mouse colony maintenance, mouse handling (e.g., injection), and other expertise to publications that elucidated some of the effects of growth hormone (GH) and insulin-like growth factor-1 (IGF-1) on mouse biology.
- Repeatedly presented research at major international conferences.

[Go to Related Pubs.](#)[Go to Meetings](#)**SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:**

- Carried out routine mouse husbandry to maintain transgenic and knockout (KO) mouse colonies, to include organizing matings, weanings, genotyping, and record keeping.
- Extracted DNA from mouse tissues and cells via direct lysis, and proteinase K digestion followed by phenol-chloroform washing and performed polymerase chain reaction (PCR) based genotyping reactions and agarose gel electrophoresis.
- Administered growth hormone (GH) and insulin-like growth factor 1 (IGF-1) via subcutaneous (sub-Q) injection during endocrinology studies.
- Performed intraperitoneal (IP) injections and blood glucose measurement during IP glucose tolerance testing (GTT) and IGF-1 maximum tolerated dose (MTD) testing.
- Anaesthetized mice via intraperitoneal (IP) avertin injection.
- Conducted blood glucose measurement, blood collection, & serum/plasma separation.
- Analyzed serum and plasma, to include measuring insulin and IGF-1 by enzyme-linked immunosorbance assay (ELISA) and triglyceride & cholesterol by colorimetric assays.
- Conducted live animal body composition analysis using a Bruker minispec NMR.
- Assisted with cloning a mouse gene targeting vector, which included optimizing PCR conditions, performing restriction digestions, ligations, agarose gel electrophoresis and DNA quantification via conventional cuvette spectrophotometer.
- Mastered basic bacteria culture techniques including heat shock transformation, streaking and plating for isolation, expansion in liquid culture, and optical density (OD) monitoring via spectrophotometer.

LOCATION INFORMATION:

Athens, OH Laboratory Technician 9/2006-to-9/2007
R&D Department - Virology Section

MAJOR ITEMS AND ACHIEVEMENTS:

- **SUMMARY:** Worked in the Virology Section of the Research & Development (R&D) department at Diagnostic Hybrids Inc. (now QuidelOrtho) under the management of Joe Jollick isolating, propagating, serotyping / identifying and titrating pathogenic human viruses from patient clinical samples.
- Maintained a 27,000-sample clinical viral isolate archive per regulatory & compliance regimes, including an ISO 13485 compliant quality management system (QMS).
- Worked with a large team on tight deadlines in an entrepreneurial environment.

SKILLS, TECHNIQUES, EXPERIENCE & EXPERTISE:

- Routinely worked in a Biosafety Level 2 (BSL-2) laboratory with pathogenic viruses.
- Isolated viruses from patient clinical samples via ultrafiltration.
- Applied isolated viruses to various immortalized human cell lines based on preliminary clinical diagnosis and monitored cells for signs of cytopathic effect (CPE).
- Lysed cytopathic cells via mechanical/syringe lysis, and cryopreserved harvested virus.
- Applied isolated virus to culture cells (shell vials), fixed cells via acetone/methanol after incubation, and serotyped and titrated viruses via florescent light microscopy.
- Maintained the viruses as part of the Clinical Viral Isolate Archive and ensured archived viruses were available in needed quantities to R&D staff.

LOCATION INFORMATION:

GRANTS AND AWARDS:

UNIVERSITY OF MICHIGAN:

1st Place	Award	Outstanding Research Presentation	2016
\$44,556	2T32AG000114-31	Career Training in the Biology of Aging	2016
\$42,000	2T32AG000114-30	Career Training in the Biology of Aging	2015

[Click to open Grant Notice](#)

UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL:

\$21,180	2T32GM007092-36	NRSA in Genetics	2010
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[Click to open Grant Notice](#)

OHIO UNIVERSITY:

\$10,000	Scholarship	AMVETS Diabetes Institute Scholar	2008
1st Place	Award	Research & Creative Activity Expo	2008

PANNELS AND PRESENTATIONS:

AAPS NBC. 2023

Vyhlidal C, Pasas-Farmer S, Falese L, Coletti K, Kuhel D, **Bower B**. Panel Discussion: Common Challenges in Bioanalytical Assay Validation/Development in CGTP. 2023 American Association of Pharmaceutical Scientist National Biotechnology Conference Poster Session. April 24, 2023.

PEER REVIEWED MANUSCRIPTS:

Aging Cell. 2019

Apr;18(2):e12920. Epub 2019 Feb 10.

17- α ESTRADIOL AMELIORATES AGE-ASSOCIATED SARCOPENIA AND IMPROVES LATE LIFE PHYSICAL FUNCTION IN MALE MICE BUT NOT IN FEMALES OR CASTRATED MALES.

Garratt, Michael; Leander, Danielle; Pifer, Kaitlyn; **Bower, Brian**; Herrera, Jonathan; Day, Sharlene; Fiehn, Oliver; Brooks, Susan; Miller, Richard.

LINKS, ABSTRACT, ETC.:

Aging Cell. 2017

Dec; 16(6): 1256-1266. Epub 2017 Aug 22.

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.

LINKS, ABSTRACT, ETC.:

Biochemistry (ACS). 2014

Sep 2;53(34):5485-95. Epub 2014 Aug 21.

TRF1 and TRF2 differentially modulate Rad51-mediated telomeric and nontelomeric displacement loop formation in vitro.

Bower BD, Griffith JD.

LINKS, ABSTRACT, ETC.:

Science. 2013

Apr 12;340(6129):190-5. 1230715. Epub 2013 Mar 7.

A guanosine-centric mechanism for RNA chaperone function.

Grohman JK, Gorelick RJ, Lickwar CR, Lieb JD, **Bower BD**, Znosko BM, Weeks KM.

LINKS, ABSTRACT, ETC.:

Journal of Virology. 2013

Mar;87(6):2994-3002. Epub 2012 Dec 26.

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.

LINKS, ABSTRACT, ETC.:

Endocrinology. 2011

Oct;152(10):3791-802. Epub 2011 Jul 26.

Differential effects of growth hormone versus insulin-like growth factor-I on the mouse plasma proteome.

Ding J, List EO, **Bower BD**, Kopchick JJ.

LINKS, ABSTRACT, ETC.:

Diabetologia. 2009

Aug;52(8):1647-55. Epub 2009 May 26.

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.

LINKS, ABSTRACT, ETC.:

Infectious Disorders Drug Targets. 2008

Mar;8(1):31-45.

The use of proteomics to study infectious diseases.

List EO, Berryman DE, **Bower B**, Sackmann-Sala L, Gosney E, Ding J, Okada S, Kopchick JJ.

LINKS, ABSTRACT, ETC.:

ACKNOWLEDGEMENTS:

BOOK CHAPTERS:

Kopchick, JJ and **Bower, B.** (2011). Cancer. In: Laron, Z and Kopchick, JJ. *Laron Syndrome – From Man to Mouse*. Heidelberg: Springer-Verlag GmbH Berlin. 495-505.

LINKS, ABSTRACTS, ETC.:

DISSERTATION:

Bower, B. (2014). *An In Vitro Characterization of Functional Interactions Between Purified Telomere Repeat Binding Factors 1 and 2 and Rad51 Recombinase* (Doctoral Dissertation). Retrieved from Carolina Digital Repository. (UMI No. 14904)

LINKS, ABSTRACTS, ETC.:

POSTERS, & PUBLISHED ABSTRACTS:

1) **Bower B**, Jih G, Sam K, Catalano A, Gullick B, Hays A, Ramachandran I. (T1130-01-02) Evaluating a Merged Well Analysis Strategy for Validation of a Cellular Kinetics Assay to Quantify an Allogeneic Cell Product in Human Blood by ddPCR. *2023 American Association of Pharmaceutical Scientist National Biotechnology Conference Poster Session*. April 25, 2023.

2) **Bower B**, Garratt M, Farooqui M, Namkong S, Lee JH, Miller R. STRESS RESISTANCE PATHWAYS IN LONG-LIVED MICE. *10th Annual Aging Research Symposium Poster Session*. May 18, 2016. [Click for Poster](#)

3) **Bower B**. ATF4 is Not Consistently Elevated in Long-Lived Mouse Models. *Career Training in the Biology of Aging*. Ann Arbor, Michigan. April 21, 2016. [Click for PPT](#)

- 4) Farooqui M, **Bower B**, Miller R. ATF4 is Elevated in the Livers of Long-Lived Snell Dwarf Mice via a Non-Canonical Mechanism. *Undergraduate Research Opportunity Program Poster Session*. Ann Arbor, MI. April 19, 2016. [Click for Poster](#)
- 5) **Bower B**, Richard Miller R. INVESTIGATING HOW AMINO ACID SENSING MAY INFLUENCE MOUSE LIFESPAN. *14th Annual Pathology Research Symposium Poster Session*. November 5, 2015. [Click for Poster](#)
- 6) **Bower B**, Miller R. INCREASED HEPATIC ATF4 IN MICE WITH ALTERED GROWTH HORMONE AND/OR INSULIN-LIKE GROWTH FACTOR 1 SIGNALS. *9th Annual Aging Research Symposium*. Ann Arbor, Michigan. May, 2015. [Click for Poster](#)
- 7) **Bower B**, Griffith J. TRF2 Inhibits Rad51-mediated D-loop formation *in vitro*. *9th Annual CSH Meeting on Telomeres and Telomerase*. Cold Spring Harbor, NY. April 30-May 4, 2013. [Click for Poster](#)
- 8) **Bower B**, Griffith J. Rad51 promotes telomeric displacement loop formation *in vitro*. *The Dept. of Genetics/Curriculum in Genetics 2012 Joint Retreat*, Myrtle Beach, SC. September 7-9, 2012. [Click for Poster](#)
- 9) **Bower B**, Horowitz H, Asokan A, Griffith J. Interrogating adeno-associated virus genome organization and structure. *The Dept. of Genetics/Curriculum in Genetics 2011 Joint Retreat*, Myrtle Beach, SC. September 16-18, 2011. [Click for Poster](#)
- 10) **Bower B**, Sezgin O, Compton S, Özlem A, Schmidt K, Griffith J. Human hnRNP A1 Preferentially Bind to Telomeric DNA *In Vitro*. *The Dept. of Genetics/Curriculum in Genetics 2010 Joint Retreat*, Myrtle Beach, SC. September 17-19, 2010. [Click for Poster](#)
- 11) List EO, Berryman DE, **Bower B**, Blischak JD, Wright-Piekarski J, Lubbers E, Malgor R, and Kopchick JJ. The Effects of GH, IGF-1 or Combined GH/IGF-1 Therapies on Type 2 Diabetes and Nonalcoholic Fatty Liver Disease (NAFLD) in Mice. *The Endocrine Society 92nd Annual Meeting*. San Diego, CA. June 19-22, 2010.
- 12) List EO, **Bower B**, Berryman DE, Kopchick JJ. Comparing the effects of GH and IGF-1 in a mouse model of diabetes (T2DM). *The First International Joint Meeting on Obesity Research. Madrid, Spain*. May 18, 2009.
- 13) List EO, **Bower B**, Berryman DE, Kopchick JJ. Comparing the effects of GH and IGF-1 in a mouse model of diabetes (T2DM). *The Third Annual Endocrine Society Retreat*. Rotterdam, Netherlands. May 13-15, 2009.
- 14) Zhai YF, **Bower B**, List EO, Kopchick JJ, Berryman DE. Optimizing Protein Levels in Ketogenic Diets To Induce Weight Loss in Obese C57BL/6J Mice. P2-377, *The Endocrine Society 91st Annual Meeting*. Washington DC. June 10-13, 2009.
- 15) **Bower B**, Zhai Y, Zacharias A, Blischak JD, Wright-Piekarski J, Berryman DE, Kopchick JJ, List EO. Growth Hormone Treatment in Lean Non-Diabetic Versus Obese Type 2 Diabetic Mice. P2-449, *The Endocrine Society 91st Annual Meeting*. Washington DC. June 10-13, 2009.
- 16) List EO, **Bower B**, Berryman DE, Kopchick JJ. A Study Comparing the Use of Growth Hormone, Metformin and IGF-1 for Treating Type 2 Diabetes in Mice. P2-448. *The Endocrine Society 91st Annual Meeting*. Washington DC. June 10-13, 2009.

- 17) Wright-Piekarski J, Zacharias A, **Bower B**, Wright-Piekarski M, Kopchick JJ, Berryman DE, List EO. The effects of diet cycling on food consumption and body composition in a mouse model of type 2 diabetes. *The 3rd Annual Diabetes Research Initiative Conference*. Athens, OH. April 3-4, 2009.
- 18) Blischak J, Sackmann-Sala L, Ding J, **Bower B**, Berryman DE, Kopchick JJ, List EO. The effects of insulin-like growth factor-1 on the mouse skin proteome. *The 3rd Annual Diabetes Research Initiative Conference*, Athens, OH. April 3-4, 2009.
- 19) Zacharias A, **Bower B**, Ivins D, Bently A, Hines A, Iwafor N, Tanda H, Esch D, Tarnowski M, Hall K, Kopchick JJ, Berryman DE, List EO. Comparison of metformin versus IGF-1 when used in combination with GH for treating obesity and diabetes. *The 3rd Annual Diabetes Research Initiative Conference*. Athens, OH. April 3-4, 2009.
- 20) **Bower B**, Berryman DE, Kopchick JJ, List EO. A study comparing growth hormone, metformin and IGF-1 therapies for treating type 2 diabetes in mice. *The 3rd Annual Diabetes Research Initiative Conference*. Athens, OH. April 3-4, 2009.
- 21) List EO, **Bower B**, Zhai Y, Berryman DE, Zacharias A, Wright-Piekarski J, Blischak J, Kopchick JJ. The effects of growth hormone treatment in lean versus obese mice. *The 3rd Annual Diabetes Research Initiative Conference*. Athens, OH. April 3-4, 2009.
- 22) List EO, Berryman DE, Palmer A, **Bower B**, Kopchick JJ. High Dose and Not Low Dose Growth Hormone Reverses Type 2 Diabetes in Mice. *The 4th International Congress of the GRS and the IGF Society*. Genoa, Italy. GH and IGF Research vol.18(suppl#1). Sept, 2008.
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- 23) Gosney, ES, **Bower, B**, Kopchick, JJ. Efficient Production of Biologically Active Mouse and Human Growth Hormone Antagonist in Escherichia coli. *Endocrine Society, 90th Annual Meeting*, San Francisco, CA. June 2008.
- 24) List EO, Berryman DE, Palmer A, **Bower B**, Hines A, Tanda H, Bentley A, Bogosian G, Kopchick JJ. Slow Release Growth Hormone (GH) Preferentially Alters Lean Mass and Not Fat Mass Compared to Once Daily GH Injections. *The Endocrine Society 90th Annual Meeting*, San Francisco. CA. June 2008.
- 25) Zhai YF, Bower B, List EO, Kopchick JJ, Palmer AJ, Berryman DE. Optimizing Ketogenic Diets To Promote Weight Loss in Mice. *The Endocrine Society 90th Annual Meeting*. San Francisco, CA. June 2008.
- 26) List EO, Berryman DE, Palmer A, Tanda H, Wright-Piekarski J, **Bower B**, Bentley A, Bogosian G, Kopchick JJ. Obese Mice Treated with GH Results in Depot Specific Changes in Adipose Tissue. *The Endocrine Society 90th Annual Meeting*. San Francisco, CA. June 2008.

MEETINGS, SYMPOSIA AND CONFERENCES:

- 1) 2023 American Association of Pharmaceutical Scientist
National Biotechnology Conference
April 23rd to 26th Philadelphia, PA
- 2) 15th Annual Pathology Research Symposium
November 1-2, 2015 Ann Arbor, MI.



- 3) 10th Annual Aging Research Symposium
May, 2016 Ann Arbor, MI.
- 4) 14th Annual Pathology Research Symposium
November 5, 2015 Ann Arbor, MI.
- 5) 13th Annual Pathology Research Symposium
November 14, 2014 Ann Arbor, MI.
- 6) 9th Annual Aging Research Symposium
May 12, 2015 Ann Arbor, MI.
- 7) 9th Annual CSH Meeting on Telomeres and Telomerase
May, 2013 Cold Spring Harbor, NY.
- 8) Nexus of Gene Therapy and Regenerative Medicine
February 7, 2013 Winston-Salem, NC
- 9) The Dept. of Genetics/ Curriculum in Genetics 2012 Joint Retreat
September, 2012 Myrtle Beach, SC.
- 10) The Dept. of Genetics/ Curriculum in Genetics 2011 Joint Retreat
September, 2011 Myrtle Beach, SC.
- 11) 2011 Meeting on Genetics and Mechanisms of Aging & Genome Maintenance
June, 2011 Girdwood, AK.
- 12) 8th Annual CSH Meeting on Telomeres and Telomerase
May, 2011 Cold Spring Harbor, NY.
- 13) The Dept. of Genetics/Curriculum in Genetics 2010 Joint Retreat
September, 2010 Myrtle Beach, SC.
- 14) The Dept. of Genetics/ Curriculum in Genetics 2009 Joint Retreat
September, 2009 Asheville, NC.
- 15) First International Joint Meeting on Obesity Research
May, 2009 Madrid, Spain.
- 16) Third Annual Endocrine Society Retreat
May, 2009 Rotterdam, Netherlands.
- 17) Endocrine Society 91st Annual Meeting
June, 2009 Washington DC.
- 18) The 3rd Annual Diabetes Research Initiative Conference
April, 2009 Athens, OH.
- 19) Endocrine Society 90th Annual Meeting
June, 2008 San Francisco, CA.
- 20) 2008 Ohio University Research & Creative Activity Expo
May, 2008 Athens, OH.

