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Senior Research Scientist
Center for Addiction Biology
The Jackson Laboratory
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Curriculum Vitae

Positions Held:

8/21-present	Senior Research Scientist Center for Addiction Biology The Jackson Laboratory, Bar Harbor, ME Laboratory of Dr. Elissa J. Chesler
8/18-8/21	Research Scientist The Jackson Laboratory, Bar Harbor, ME Laboratory of Dr. Elissa J. Chesler
11/1/20-present	Adjunct Professor Emory College of Arts and Sciences, Atlanta GA Department of Psychology
12/10–07/18	Associate Research Scientist The Jackson Laboratory, Bar Harbor, ME Laboratory of Dr. Elissa J. Chesler
12/09–12/10	Scientific Curator: Alleles & Phenotypes Mouse Genome Informatics, The Jackson Laboratory, Bar Harbor, ME Dr. Janan Eppig
9/09-12/13	Adjunct Instructor The University of Maine at Augusta, Ellsworth ME Adjunct Instructor of Bio 320 Microbiology 4 credits
6/04–12/09	Post-Doctoral Research Fellow The Jackson Laboratory, Bar Harbor, ME Advisor: Dr. Derry C. Roopenian, liaison Dr. John P. Sundberg
09/04-12/04	Scientific Mentor for West Bend High School Milwaukee School of Engineering, Milwaukee WI Molecular Modeling Course
08/02-12/02	Academic Tutor Marquette University, Milwaukee WI Introductory Biology and Introductory Chemistry for Educational Opportunities Program
08/97- 5/00	Teaching Assistant Marquette University <i>Experimental Genetics, Experimental Cell Biology, Molecular Basis of Life, Introductory Biology and Principles of Biological Investigation.</i>

5/97-8/97 Microchemistry Research Intern
The Jackson Laboratory, Bar Harbor, ME
Advisor: Kevin Johnson, M.S.

09/95-05/97 Calculus I and Calculus II Tutor
The University of Maine at Farmington
Advisor: Dr. Gail Lange and Dr. Elizabeth Joseph.

Education:

5/04 Doctor of Philosophy in Biological Sciences, Marquette University,
Milwaukee WI
Advisor: Michael J. Schläppi
Thesis: Characterization of the low-temperature response of *EARL1* in
Arabidopsis thaliana.
Preparing Future Faculty Certification

8/97 Bachelor of Arts, The University of Maine at Farmington, Farmington ME
Major in Biology
Minors in Chemistry and Mathematics
Honors Program Pin Recipient
Advisor: Dr. Daniel Buckley

Honors & Awards:

1997 Mills Family Internship Award, University of Maine Farmington
2001 Charles O'Hare Graduate Fellowship, Marquette University
2002 Marquette University Fellowship, Marquette University
2002 Plant Physiology Travel Grant
2002 Travel Fellowship, American Society of Plant Biologists
2003 Arthur J. Schmitt Graduate Fellowship, Marquette University
2004-2006 NIH R32 Training Grant 2004-2006
2005-2008 Arthritis Foundation Postdoctoral Fellowship
2007 Arthritis Foundation Travel Grant
2007 Baltic States Summer School Marie Curie Conferences and Training Course
Fellowship
2008 Society for Investigative Dermatology Travel Award
2019 Distinguish Toastmaster Award

Active Memberships

College on Problems of Drug Dependence
Sigma Xi
Research Society on Alcoholism
International Mammalian Genomics Society
International Behavioral and Neural Genetics Society
NIDA Genetics Consortium

Ad-hoc Journal Reviewer

Genes Brain and Behavior (8), *Experimental and Molecular Pathology*, *International Journal of Obesity*,
mSystems (2), *Genetics* (2), *Sleep*, *Alcohol*, *The Journal of Rheumatology*, *Genes and Immunity*,
Neuroscience, *Neuropsychopharmacology*, *Microbiome*, *Frontiers in Pharmacology*, *Gut microbes* (2),
Mammalian Genome (2)

Guest Editor -Genes

Grant Review

2019 UNH External Reviewer for Pilot Projects

2019 NIH Molecular Neuropharmacology and Signaling Study Section
2020 NIH Molecular Neuropharmacology and Signaling Study Section
2020 NIH Genetics of Health and Disease Study Section
2021 NIH Special Emphasis Study Section (ZRG1 MDCN-V)
2021 NIH Special Emphasis Study Section (ZDA1 IXR-Q)
2021 NIH CEBRA Study Section
2022 NIH HEAL Review (ZDA1 IXR-Q)
2022 NIH Contract Review
2022 NIH CEBRA Study Session Spring
2022 NIH CEBRA Study Session Fall
2023 NIH Fellowships: Behavioral Neuroscience ZRG1 F02A-W (20)
2023 NIH Special Emphasis Study Section ZDA1 JRB-N (O1) R
2023 NIH CEBRA Study Section Fall

Service

2023 IBANGS Windsor Meeting Planning Committee
2023- Advisory Council for Hands and Voices association with MECDDH
2023- JAX Student Symposium Poster and Presentation Judge
2023- International Committee on Standardized Genetic Nomenclature for Mice
2023 IBANGS Galway Meeting Organization Committee
2023 JAX Faculty Retreat Planning Committee
2022- Appointed by Governor Mills to the Maine Educational Center for the Deaf and Hard of hearing.
2022 IBANGS Memphis Meeting Organization Committee
2022 JAX Faculty Retreat Planning Committee
2022 Member of IBANGS Membership Committee

Training

Shaunna Bennett (SSP)

Co-authored (PMID: 17911475), earned her Ph.D. at the University of Michigan and teaches at Georgetown University

Caitlin Deane (SSP)

Earned her Ph.D. at the University of Illinois Urbana-Champaign and is now a scientific writer at St. Jude

Nkima Stephenson (SSP)

Received 2nd Honors in the Georgia State Science Fair for her work, "*Data Analysis of the Epigenetics of Drug and Alcohol Dependence.*" She took her work to the Intel International Science and Engineering Fair in Los Angeles, CA, where she was awarded the 2nd prize Addiction Science Award for her work.

(<https://www.drugabuse.gov/news-events/news-releases/2017/05/epigenetics-takes-center-stage-years-addiction-science-awards>).

Axis Fuksman-Kumpa (Academic Year Intern)

MDI high school student and a co-author (PMID: 30978202).

Christian Monroy Hernandez (Post-Baccalaureate Student)

Prepared for the MCAT applied and was accepted with a full scholarship to the Medical Scientist Training Program (MD/Ph.D.) at Washington University in St. Louis. He presented his work internally at JAX, the regional Neuroscience Conference at Colby, and the National Society for Advancement of Chicanos/Hispanics & Native Americans in Science Conference (SACNAS 2019). He contributed significantly to several projects, including the Opioid-Induced Respiratory Depression project, which he was a co-author on (PMID: 32917924) and a more recently published microbiome study (PMID: 37114320)

Invited Talks

11/01/03 "Cold induction of EARLI1, a putative Arabidopsis lipid transfer protein, is light- and calcium-dependent" Carroll College, Waukesha WI
4/15/05 "IL-21 and SLE" The University of Maine at Farmington, Farmington ME
11/29/06 "Treatment of BXSB-Yaa mice with IL-21R-Fc fusion protein minimally attenuates systemic lupus erythematosus." 5th International Congress on Autoimmunity Sorrento Italy
4/27/07 "A QTL regulating Marginal Zone B cells in MRL x B6 F2 mice" 34th Maine Biological and Medical Sciences Bar Harbor, ME

10/2/09 "Searching for Secondary Modifiers of Junctional Epidermolysis Bullosa in Mice" Pfizer Groton CT

3/21/12 "Host-microbiome interactions in the Collaborative Cross Mice" The University of Maine at Farmington, Farmington ME

4/2012 "Accelerating Discovery for Complex Neurological and Behavioral Disorders Through Systems Genetics and Integrative Genomics in the Laboratory Mouse" Maine Society for Neuroscience, University of New England Biddeford ME

11/2013 "Effect of genetic diversity of collaborative cross mice on intestinal microbial communities and their association with disease related traits in mice." Maine Society for Neuroscience, Colby College Waterville ME

6/24/16 "Bidirectional translational genetics of Alcohol Use Disorder through integrative functional genomics" at RSA Denver CO

5/9/17 "GeneWeaver" at Neurogenetic Tools workshop Bar Harbor

11/14/17 "Detecting genetic variation in morphine LD50 in founder strains of the Collaborative Cross and Diversity Outbred mouse populations" Maine Society for Neuroscience UNE Biddeford ME

1/9/2018 "Detecting genetic variation in morphine LD50 in founder strains of the Collaborative Cross and Diversity Outbred mouse populations. NIDA Genetic Consortium. Bethesda MD

1/17/18 "Heterogeneous data integration for cross-species functional genomics in GeneWeaver" Colby College Course Waterville Maine (Virtual)

2/8/18 "Heterogeneous data integration for cross-species functional genomics in GeneWeaver" Graduate Mammalian Genetics Course, Bar Harbor ME

2/15/18 "Heterogeneous data integration for cross-species functional genomics in GeneWeaver" Davidson University, NC (Virtual)

5/3/18 "GeneWeaver" at Neurogenetic Tools workshop Bar Harbor

5/22/18 "Heterogeneous data integration for cross-species functional genomics in GeneWeaver" JAX Genomic Medicine Farmington CT

11/11/18 "GeneWeaver for Integrative Functional Genomics" Rio Grande, Puerto Rico

11/30/18 "Heterogeneous data integration for cross-species functional genomics in GeneWeaver" Systems Neurogenetics Workshop and Presentations University of Tennessee Health Sciences Center, Memphis TN

11/30/18 "Genetic Variation in Opioid Induced Respiratory Depression in Mice" Systems Neurogenetics Workshop and Presentations University of Tennessee Health Sciences Center, Memphis TN

5/8/19 "Microbiome and addiction or addiction predictive behaviors" Gut Biology: Bates College. Mount Desert Island Biological Laboratory Bar Harbor ME

5/13/19 "GeneWeaver for Integrative Functional Genomics" Big Data Genomics Workshop. The Jackson Laboratory Bar Harbor ME

6/9/19 "The relationship between host genetics, microbiome composition and addictive or addictive-predictive behavior" Complex Trait Consortium. La Jolla CA

7/19/19 "Genetic Variation in Opioid-Induced Respiratory Depression in Mice" From Research to Recovery: New Approaches to the Opioid Crisis. Case Western Reserve University Cleveland OH

8/16/19 "Genetic Variation in Opioid-Induced Respiratory Depression in Mice" Developing Countermeasures to Rescue Opioid-Induced Respiratory Depression. Trans NIH Meeting Bethesda MD

9/7/19 "Microbiome in Health and Disease" Frontiers in Hepatobiliary and Gastrointestinal Physiology course. Mount Desert Island Biological Laboratory Bar Harbor ME

9/15/19 "GeneWeaver for Integrative Functional Genomics" at Short Course on Addiction Genetics. The Jackson Laboratory Bar Harbor ME

9/24/19 "GeneWeaver for Integrative Functional Genomics" International Mammalian Genetics Conference. Strasbourg, France

3/4/20 "Personal Genetics, Addiction and Opioid Induced Respiratory Depression" Maine Health Allies, Portland ME

6/5/20	"The microbial community dynamics of cocaine sensitization in two behaviorally divergent collaborative cross strains" NIDA Science Friday (Virtual)
5/6/21	"Host genetics, microbiome, and behavior" (Virtual) to the Leeds Institute of Medical Research at St James's Virtual Seminar Series
9/23/22	"Genetic Control of Addiction by Host and Microbiome", Marquette University Milwaukee WI.
10/12/22	"Host genetic control of a microbe that regulates host serotonin production," Faculty Retreat Westin Hotel Portland Maine.
3/31/2023	"Genetic Variation in Respiratory Function and Opioid Sensitivity" IMGC Tuskuba, Japan
5/24/2023	"Closing the loop on Turicibacter" IBANGS, Galway, Ireland.
6/21/2023	"Host and Genetic Control of Addiction" College on Problems of Drug Dependence. Denver, CO
7/20/2023	Governor Mills' 5 th Annual Opioid Summit, Portland Maine
10/11/2023	"Conditional inference trees to visualize dense systems genetics data." Complex Trait Consortium, Memphis TN (Remote)
10/17/2023	"Biological Basis of Addiction"- Panel Member Maine Biomedical Innovation and Technology Conference Portland Maine.
11/15/2023	"Who's calling the shots: Host and microbiome control of addiction and addiction-related behavior in mice." University of Maine at Farmington, <i>invited talk</i>

Publications <https://scholar.google.com/citations?user=RtykxjgAAAAJ&hl=en>

1. **Bubier, JA** and Schläppi, MR. 2004 Cold induction of EARL11, a putative Arabidopsis lipid transfer protein, is light and calcium dependent. *Plant, Cell and Environment*. 2004 July; 27(7):929-936. doi: 10.1111/j.1365-3040.2004.01198.x.
2. **Bubier JA**, Bennett SM, Sproule TJ, Lyons BL, Olland S, Young DA, Roopenian DC. Treatment of BXSB-Yaa mice with IL-21R-Fc fusion protein minimally attenuates systemic lupus erythematosus. *Ann N Y Acad Sci*. 2007 Sep;1110:590-601. doi: 10.1196/annals.1423.063. PubMed PMID: 17911475.
3. Ghim S, Jenson AB, **Bubier JA**, Silva KA, Smith RS, Sundberg JP. Cataracts in transgenic mice caused by a human papillomavirus type 18 E7 oncogene driven by KRT1-14. *Exp Mol Pathol*. 2008 Oct;85(2):77-82. doi: 10.1016/j.yexmp.2008.07.004. Epub 2008 Aug 6. PubMed PMID: 18723014; PubMed Central PMCID: PMC2650106.
4. **Bubier JA**, Sproule TJ, Foreman O, Spolski R, Shaffer DJ, Morse HC 3rd, Leonard WJ, Roopenian DC. A critical role for IL-21 receptor signaling in the pathogenesis of systemic lupus erythematosus in BXSB-Yaa mice. *Proc Natl Acad Sci U S A*. 2009 Feb 3;106(5):1518-23. doi: 0.1073/pnas.0807309106. Epub 2009 Jan 21. PubMed PMID: 19164519; PubMed Central PMCID: PMC2635818.
5. **Bubier JA**, Sproule TJ, Alley LM, Webb CM, Fine JD, Roopenian DC, Sundberg JP. A mouse model of generalized non-Herlitz junctional epidermolysis bullosa. *J Invest Dermatol*. 2010 Jul;130(7):1819-28. doi: 10.1038/jid.2010.46. Epub 2010 Mar 25. PubMed PMID: 20336083; PubMed Central PMCID: PMC3010368.
6. Derbyshire K, Addey C, Coe D, Stuckey DW, Muezzin H, **Bubier JA**, Shaffer DJ, Roopenian DC, Chai JG, Scott DM. Molecular mechanisms of induction of antigen-specific allograft tolerance by intranasal peptide administration. *J Immunol*. 2011 May 15;186(10):5719-28. doi: 10.4049/jimmunol.1002444. Epub 2011 Apr 13. PubMed PMID: 21490154; PubMed Central PMCID: PMC3321310.

7. McPhee CG, Sproule TJ, Shin DM, **Bubier JA**, Schott WH, Steinbuck MP, Avenesyan L, Morse HC 3rd, Roopenian DC. MHC class I family proteins retard systemic lupus erythematosus autoimmunity and B cell lymphomagenesis. *J Immunol.* 2011 Nov 1;187(9):4695-704. doi: 10.4049/jimmunol.1101776. Epub 2011 Sep 30. PubMed PMID: 21964024; PubMed Central PMCID: PMC3381364.
8. Taylor DK, **Bubier JA**, Silva KA, Sundberg JP. Development, structure, and keratin expression in C57BL/6J mouse eccrine glands. *Vet Pathol.* 2012 Jan;49(1):146-54. doi: 10.1177/0300985811430511. Epub 2011 Nov 30. PubMed PMID: 22135020; PubMed Central PMCID: PMC3253413.
9. Baker EJ, Jay JJ, **Bubier JA**, Langston MA, Chesler EJ. GeneWeaver: a web-based system for integrative functional genomics. *Nucleic Acids Res.* 2012 Jan;40(Database issue):D1067-76. doi: 10.1093/nar/gkr968. Epub 2011 Nov 12. PubMed PMID: 22080549; PubMed Central PMCID: PMC3245070.
10. **Bubier JA**, Chesler EJ. Accelerating discovery for complex neurological and behavioral disorders through systems genetics and integrative genomics in the laboratory mouse. *Neurotherapeutics.* 2012 Apr;9(2):338-48. doi: 10.1007/s13311-012-0111-3. Review. PubMed PMID: 22422471; PubMed Central PMCID: PMC3325414.
11. Chesler EJ, Plitt A, Fisher D, Hurd B, Lederle L, **Bubier JA**, Kiselycznyk C, Holmes A. Quantitative trait loci for sensitivity to ethanol intoxication in a C57BL/6J×129S1/SvImJ inbred mouse cross. *Mamm Genome.* 2012 Jun;23(5-6):305-21. doi: 10.1007/s00335-012-9394-2. Epub 2012 Feb 28. PubMed PMID: 22371272; PubMed Central PMCID: PMC3357470.
12. Logan RW, Robledo RF, Recla JM, Philip VM, **Bubier JA**, Jay JJ, Harwood C, Wilcox T, Gatti DM, Bult CJ, Churchill GA, Chesler EJ. High-precision genetic mapping of behavioral traits in the diversity outbred mouse population. *Genes Brain Behav.* 2013 Jun;12(4):424-37. doi: 10.1111/gbb.12029. Epub 2013 Mar 20. PubMed PMID: 23433259; PubMed Central PMCID: PMC3709837.
13. McPhee CG, **Bubier JA**, Sproule TJ, Park G, Steinbuck MP, Schott WH, Christianson GJ, Morse HC 3rd, Roopenian DC. IL-21 is a double-edged sword in the systemic lupus erythematosus-like disease of BXSB.Yaa mice. *J Immunol.* 2013 Nov 1;191(9):4581-8. doi: 10.4049/jimmunol.1300439. Epub 2013 Sep 27. PubMed PMID: 24078696; PubMed Central PMCID: PMC3807747.
14. Sproule TJ, **Bubier JA**, Grandi FC, Sun VZ, Philip VM, McPhee CG, Adkins EB, Sundberg JP, Roopenian DC. Molecular identification of collagen 17a1 as a major genetic modifier of laminin gamma 2 mutation-induced junctional epidermolysis bullosa in mice. *PLoS Genet.* 2014 Feb;10(2):e1004068. doi: 10.1371/journal.pgen.1004068. eCollection 2014 Feb. PubMed PMID: 24550734; PubMed Central PMCID: PMC3923665.
15. **Bubier JA**, Jay JJ, Baker CL, Bergeson SE, Ohno H, Metten P, Crabbe JC, Chesler EJ. Identification of a QTL in *Mus musculus* for alcohol preference, withdrawal, and Ap3m2 expression using integrative functional genomics and precision genetics. *Genetics.* 2014 Aug;197(4):1377-93. doi: 10.1534/genetics.114.166165. Epub 2014 Jun 11. PubMed PMID: 24923803; PubMed Central PMCID: PMC4125407.
16. Baker E, Culpepper C, Philips C, **Bubier J**, Langston M, Chesler E. Identifying common components across biological network graphs using a bipartite data model. *BMC Proc.* 2014;8(Suppl 6 Proceedings of the Great Lakes Bioinformatics Confer):S4. doi: 10.1186/1753-6561-8-S6-S4. eCollection 2014. PubMed PMID: 25374613; PubMed Central PMCID: PMC4202189.

17. Phillips C, Wang K, **Bubier J**, Baker E, Chesler E, Langston M. Scalable multipartite subgraph enumeration for integrative analysis of heterogeneous experimental functional genomics data. Proceedings of the 6th ACM Conference on Bioinformatics, Computational Biology and Health Informatics - BCB '15. the 6th ACM Conference; ; Atlanta, Georgia. New York, New York, USA: ACM Press; c2015.
18. **Bubier JA**, Phillips CA, Langston MA, Baker EJ, Chesler EJ. GeneWeaver: finding consilience in heterogeneous cross-species functional genomics data. *Mamm Genome*. 2015 Oct;26(9-10):556-66. doi: 10.1007/s00335-015-9575-x. Epub 2015 Jun 20. PubMed PMID: 26092690; PubMed Central PMCID: PMC4602068.
19. Baker E, **Bubier JA**, Reynolds T, Langston MA, Chesler EJ. GeneWeaver: data driven alignment of cross-species genomics in biology and disease. *Nucleic Acids Res*. 2016 Jan 4;44(D1):D555-9. doi: 10.1093/nar/gkv1329. Epub 2015 Dec 9. PubMed PMID: 26656951; PubMed Central PMCID: PMC4702926.
20. **Bubier JA**, Wilcox TD, Jay JJ, Langston MA, Baker EJ, Chesler EJ. Cross-Species Integrative Functional Genomics in GeneWeaver Reveals a Role for Pafah1b1 in Altered Response to Alcohol. *Front Behav Neurosci*. 2016;10:1. doi: 10.3389/fnbeh.2016.00001. eCollection 2016. PubMed PMID: 26834590; PubMed Central PMCID: PMC4720795.
21. Dickson PE, Miller MM, Calton MA, **Bubier JA**, Cook MN, Goldowitz D, Chesler EJ, Mittleman G. Systems genetics of intravenous cocaine self-administration in the BXD recombinant inbred mouse panel. *Psychopharmacology (Berl)*. 2016 Feb;233(4):701-14. doi: 10.1007/s00213-015-4147-z. Epub 2015 Nov 19. PubMed PMID: 26581503; PubMed Central PMCID: PMC4803082.
22. **Bubier JA**, Langston MA, Baker EJ, Chesler EJ. Integrative Functional Genomics for Systems Genetics in GeneWeaver.org. *Methods Mol Biol*. 2017;1488:131-152. doi: 10.1007/978-1-4939-6427-7_6. PubMed PMID: 27933523.
23. Delprato A, Algéo MP, Bonheur B, **Bubier JA**, Lu L, Williams RW, Chesler EJ, Crusio WE. QTL and systems genetics analysis of mouse grooming and behavioral responses to novelty in an open field. *Genes Brain Behav*. 2017 Nov;16(8):790-799. doi: 10.1111/gbb.12392. Epub 2017 Jun 22. PubMed PMID: 28544613; PubMed Central PMCID: PMC5800503.
24. ***Bubier J**, *Hill D, *Mukherjee G, *Reynolds T, Baker EJ, Berger A, Emerson J, Blake JA, Chesler EJ. Curating gene sets: challenges and opportunities for integrative analysis. *Database (Oxford)*. 2019 Jan 1;2019. doi: 10.1093/database/baz036. PubMed PMID: 30888410; PubMed Central PMCID: PMC6424415. *co-first author
25. Phillips C, Wang K, Baker E, **Bubier J**, Chesler E, Langston M. On Finding and Enumerating Maximal and Maximum k-Partite Cliques in k-Partite Graphs. *Algorithms*. 2019 January; 12(1):23-. doi: 10.3390/a12010023
26. **Bubier JA**, Sutphin GL, Reynolds TJ, Korstanje R, Fuksman-Kumpa A, Baker EJ, Langston MA, Chesler EJ. Integration of heterogeneous functional genomics data in gerontology research to find genes and pathway underlying aging across species. *PLoS One*. 2019;14(4):e0214523. doi: 10.1371/journal.pone.0214523. eCollection 2019. PubMed PMID: 30978202; PubMed Central PMCID: PMC6461221.
27. Li Q, Philip VM, Stearns TM, **Bubier JA**, King BL, Low BE, Wiles MV, Saeidian AH, Sundberg BA, Uitto J, Sundberg JP. Quantitative Trait Locus and Integrative Genomics Revealed Candidate Modifier Genes for Ectopic Mineralization in Mouse Models of Pseudoxanthoma Elasticum. *J Invest Dermatol*. 2019 Jun 14;. doi: 10.1016/j.jid.2019.04.023. [Epub ahead of print] PubMed PMID: 31207231.

28. Recla JM, **Bubier JA**, Gatti DM, Ryan JL, Long KH, Robledo RF, Glidden NC, Hou G, Churchill GA, Maser RS, Zhang ZW, Young EE, Chesler EJ, Bult CJ. Genetic mapping in Diversity Outbred mice identifies a *Trpa1* variant influencing late-phase formalin response. *Pain*. 2019 Aug;160(8):1740-1753. doi: 10.1097/j.pain.0000000000001571. PubMed PMID: 31335644; PubMed Central PMCID: PMC6668363.
29. **Bubier, JA**, Philip, VM, Quince, C, Campbell, J, Zhou, Y, Vishnivetskaya, T, Duvvuru, S, Hageman-Blair, R, Ndukum, J, Donohue, KD, Foster, CM, Mellert, DJ, Weinstock, G, Culiati, CT, O'Hara, B, Palumbo, AV, Podar, M, Chesler, EJ A microbe associated with sleep revealed by a novel systems-genetic analysis of the microbiome in Collaborative Cross mice. *Genetics* March 1, 2020 vol. 214 no. 3 719-733; <https://doi.org/10.1534/genetics.119.303013> PMID: 31896565
30. Datta U, Schoenrock SE, **Bubier JA**, Bogue MA, Jentsch JD, Logan RW, Tarantino LM, Chesler EJ Prospects for finding the mechanisms of sex differences in addiction with human and model organism genetic analysis *Genes Brain Behav*. 2020 Mar;19(3):e12645. doi: 10.1111/gbb.12645. Epub 2020 Feb 11 PMID: 32012419
31. Huggett, S.B., **Bubier, J.A.**, Chesler, E.J. and Palmer, R.C. 2020 Do gene expression findings from mouse models of cocaine use recapitulate human cocaine use disorder in reward circuitry? *Genes Brain and Behavior*. 2020 Jul 27;e12689. PMID: 32720468 <https://doi.org/10.1101/2020.01.31.929406> PMID: 32720468
32. Reynolds, T, **Bubier J.A.**, Langston, M.A., Chesler, E.J., Baker, E.J. Finding human gene-disease associations using a Network Enhanced Similarity Search (NESS) of multi-species heterogeneous functional genomics data. *bioRxiv* 2020.03.11.987552; doi: <https://doi.org/10.1101/2020.03.11.987552>
33. **Bubier, J.A.**, Philip, V.M., Dickson, P.D., Mittleman, G, Chesler, E.J.C. 2020 Discovery of a role for *Rab3b* in habituation and cocaine induced locomotor activation in mice using heterogeneous functional genomic analysis. *Front Neuroscience* 14:721 doi:10.3389/fnins.2020.00721 PMID: 32742255
34. Reynolds, T, Johnson, E, Huggett, S, **Bubier, JA**, Palmer, RHC, Agrawal, A, Baker, EJ and Chesler, EJ 2020 Interpretation of psychiatric genome wide association studies with multi-species heterogeneous functional genomic data integration. *Neuropsychopharmacology* 2020 Aug 13. doi: 10.1038/s41386-020-00795-5. PMID: 32791514
35. Ouellette AR, Neuner SM, Dumitrescu L, Anderson LC, Gatti DM, Mahoney ER, **Bubier JA**, Churchill G, Peters L, Huentelman MJ, Herskowitz JH, Yang HS, Smith AN, Reitz C, Kunkle BW, White CC, De Jager PL, Schneider JA, Bennett DA, Seyfried NT; Alzheimer's Disease Genetics Consortium, Chesler EJ, Hadad N, Hohman TJ, Kaczorowski CC. 2020 Cross-Species Analyses Identify *Dlgap2* as a Regulator of Age-Related Cognitive Decline and Alzheimer's Dementia *Cell Rep* Sep 1;32(9):108091 doi: 10.1016/j.celrep.2020.108091. PMID: 32877673
36. **Bubier, JA**, He, H, Philip, VM, Roy, T, Monroy-Hernandez, C, Bernat, R Donohue, KD, O'Hara, BF and Chesler, EJ. 2020 Genetic Variation Regulates Opioid-Induced Respiratory Depression in Mice *Sci Rep* Sep 11;10(1):14970. doi: 10.1038/s41598-020-71804-2. doi: 10.1038/s41598-020-71804-2. PMID: 32917924
37. *Palmer, RHC, *Benca-Bachman, C.E., ***Bubier, J.A.**, *McGeary, J.E, Ramgiri, N, Srijevanthan, J, Huggett, S, Yang, J, Visscher, P, Yang, J, Knopik, V and Chesler, E.J. Cross-Species Multi-omic and multi-species meta-analyses of nicotine consumption. 2021 Feb 4;11(1):98 PMID: 33542196 *co-first author
38. Hitzemann, R.H., Bergeson, S.E., Erman, A.E., **Bubier, J.A.**, Chesler, E.J., Finn, D.A., Hein, L, Hoffman, P, Holmes, A, Kisby, B.R., Lockwood, D, Lodowski, K.H., McManus, M., Owen, J.A.

Ozburn, A.R., Pathagani, P., Ponomarev, I, Sabe, L, Tabakoff, B, Walchale, A., Williams, R.W., Phillips, T.J. 2021 Sex Differences in the Brain Transcriptome Related to Alcohol Effects and Alcohol Use Disorder *Biological Psychiatry* 10.1016/j.biopsych.2021.04.016

39. **Bubier JA**, Chesler EJ, Weinstock GM. 2021 Host genetic control of gut microbiome composition. *Mamm Genome* 32(4):262-281 PMID: 34159422
40. Suri K, **Bubier JA**, Wiles MV, Shultz LD, Amiji MM, Hosur V. 2021 Role of MicroRNA in Inflammatory Bowel Disease: Clinical Evidence and the Development of Preclinical Animal Models. *Cells* 10(9)-2204 PMID: 34571853
41. Russell JT, Zhou Y, Weinstock GM, **Bubier JA**. 2021 The Gut Microbiome and Substance Use Disorder. *Front Neurosci* Aug 31;15:725500 PMID: 34531718
42. Huggett SB, Johnson EC, Hatoum AS, Lai D, Srijevantham J, **Bubier JA**, Chesler EJ, Agrawal A, Palmer AA, Edenberg HJ, Palmer RHC. 2021 Genes identified in rodent studies of alcohol intake are enriched for heritability of human substance use. *Alcohol Clin Exp Res* Nov 9 PMID: 34751961
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54. Bates, JN, Getsy, PM, Coffee, GA, Baby, SM, MacFarlane, PM Hsieh, Y, Knauss, Z, **Bubier, JA**, Mueller, D, Lewis, SJ. Lipophilic analogues of D-cysteine prevent and reverse physical dependence to fentanyl in male rats (submitted)

*Co-first Authors.

OTHER SUPPORT

Name of Individual: **Bubier, J.A.**

Commons ID: **BUBIERJA**

Other Support - Project/Proposal

<u>Active</u>			
Title: Genetic Control of Addiction by Host and Microbiome			
Major Goals: This project aims to define the role of the gut microbiome in addictive behavior, both by showing that changes in bacterial abundances or gene expression can affect such behavior, and by showing how host gene variants can affect addictive behavior via their effects on the gut microbiome.			
Status of Support:	Active		
Project Number:	5 U01 DA043809-05		
Name of PD/PI:	Bubier, J.A		
Source of Support:	NIH/NIDA		
Primary Place of Performance:	The Jackson Laboratory - Bar Harbor, ME		
Project/Proposal Start and End Date:	9/2018 - 7/2023		
Total Award Amount (including indirect costs):	\$3,967,478		
Person months per budget period			
	Year	Person Months	
5.	2023	4.6 calendar	
Title: Genetic Variation in Opioid Induced Respiratory Depression in Mice			
Major Goals: The long term goal is to define the biological basis of opioid overdose risk and to discover safe and effective novel reversal agents.			

Status of Support:	Active		
Project Number:	5 R01 DA048890-04		
Name of PD/PI:	Bubier, J.A.		
Source of Support:	NIH/NIDA		
Primary Place of Performance:	The Jackson Laboratory - Bar Harbor, ME		
Project/Proposal Start and End Date:	4/2020 - 1/2025		
Total Award Amount (including indirect costs):	\$3,352,516		
Person months per budget period			
	Year	Person Months	
4.	2024	2.8 calendar	
5.	2025	3.6 calendar	
Title: The Kinship Risk Score: An Integrative Tool to Prioritize Alcohol and Drug-Addiction Related Genes for Enhanced Risk Prediction			
Major Goals: The goal for this project involves the discovery, characterization, prioritization of addiction phenotypes using a set of genetic factors that contribute to the observed additive genetic effects due to genotyped and imputed SNPs.			
Status of Support:	Active		
Project Number:	5 DP1 DA042103-05 (NCE)		
Name of PD/PI:	Palmer, R.		
Source of Support:	NIH/NIDA		
Primary Place of Performance:	The Jackson Laboratory - Bar Harbor, ME		
Project/Proposal Start and End Date:	9/2017 - 7/2023		
Total Award Amount (including indirect costs):	\$83,100		
Person months per budget period			
	Year	Person Months	
5.	2023	0.06 calendar	
Title: Integrative Prioritization of Alcohol and Drug-Addiction Related Genetic Loci			
Major Goals: This project aims to address the problem of limited predictive power in alcohol and tobacco/nicotine genetic studies by using an integrative approach and existing data and bioinformatics resources to: (1) localize genetic variants that comprise the additive genetic effects on alcohol and tobacco use and dependence, and (2) develop a novel and freely-available resource that enhances the way existing genetically informed samples are used for alcohol and tobacco risk prediction.			
Status of Support:	Active		
Project Number:	5 R01 DA042742-05 (NCE)		
Name of PD/PI:	Palmer, R.		
Source of Support:	NIH/NIDA		

Primary Place of Performance:	The Jackson Laboratory - Bar Harbor, ME		
Project/Proposal Start and End Date:	4/2018 - 1/2024		
Total Award Amount (including indirect costs):	\$54,240		
Person months per budget period			
	Year	Person Months	
5.	2023	.12 calendar	

Title: Center for Systems Neurogenetics of Addiction

Major Goals: The Center for Systems Neurogenetics of Addiction (CSNA) seeks to identify the biological relationships among the stages and patterns of cocaine addiction and behaviors that predict drug abuse.

Status of Support:	Active		
Project Number:	2 P50 DA039841-06A1		
Name of PD/PI:	Chesler, E.J.		
Source of Support:	NIH/NIDA		
Primary Place of Performance:	The Jackson Laboratory - Bar Harbor, ME		
Project/Proposal Start and End Date:	9/2022 - 6/2027		
Total Award Amount (including indirect costs):	\$11,519,202		
Person months per budget period			
	Year	Person Months	
1.	2023	1.2 calendar	
2.	2024	1.8 calendar	
3.	2025	1.8 calendar	
4.	2026	1.8 calendar	
5.	2027	1.8 calendar	

Title: Integrative Neuroscience Initiative on Alcoholism-Neuroimmune (INIA-N)

Major Goals: The Waggoner Center for Alcohol and Addiction Research (WCAAR) at the University of Texas at Austin will collect and deposit all genomic information gathered by the different INIA-N projects into GeneWeaver, which is an established, web-based system for cross-species integration of heterogeneous genomic studies of alcohol dependence in animals and alcohol use disorder in humans.

Status of Support:	Active		
Project Number:			
Name of PD/PI:	Chesler, E.J.		
Source of Support:	University of Texas at Austin		
Primary Place of Performance:	The Jackson Laboratory - Bar Harbor, ME		
Project/Proposal Start and End Date:	2/2023 - 1/2024		
Total Award Amount (including indirect costs):	\$72,500		
Person months per budget period			

	Year	Person Months	
1.	2024	0.12 calendar	
Title: Integrative Omics Center for Accelerating Neurobiological Understanding of Opioid Addiction (ICAN)			
Major Goals: The goal of this project is to provide support for model organism opioid data aggregation and integration in the GeneWeaver system at the level of genes and variants across species with an emphasis on human, mouse and rat.			
Status of Support:		Pending – Subaward Agreement is Pending	
Project Number:		1 P50 DA054071-01A1	
Name of PD/PI:		Johnson, E.	
Source of Support:		NIH/NIDA	
Primary Place of Performance:		The Jackson Laboratory - Bar Harbor, ME	
Project/Proposal Start and End Date:		9/2022 - 5/2027	
Total Award Amount (including indirect costs):		\$1,514,625	
Person months per budget period			
	Year	Person Months	
1.	2023	.48 calendar	
2.	2024	.48 calendar	
3.	2025	.48 calendar	
4.	2026	.48 calendar	
5.	2027	.48 calendar	

COMPLETED

Status of Support:			Closed
Supporting Agency:	NIH/NIAID 5 R21 AI145400-02	PI:	Menachery
Project Title:	The Host Genetics of Age-Dependent Susceptibility		
Role:	Consortium PI	Effort:	0.72 CM
Entire Project:	07/01/2020 - 06/30/2022		\$27,679
Project Goals:	The major goal of this project is identifying genetic correlates associated with aging immunity and age-dependent susceptibility following SARS-CoV infection.		
Specific Aims:			
Overlap:	None		
Contract/Grants Officer:			

Status of Support:			Closed
Supporting Agency:	NIH/NIAAA 5 R21 AA027858-02	PI:	Zhou
Project Title:	The role of the gut microbiome as a non-genetic factor in influencing		

Title: Genetic Variation of Ultra-Potent Synthetic Opioid Sensitivity in Mice			
Major Goals: Our long-term goal is to define the biological basis of opioid overdose risk and promote the discovery of safe and effective agents that reverse fentanyl lethality			
Status of Support:	Pending		
Project Number:	R01 DA059060-01		
Name of PD/PI:	Bubier, J.A.		
Source of Support:	NIH		
Primary Place of Performance:	The Jackson Laboratory - Bar Harbor, ME		
Project/Proposal Start and End Date:	7/2023 - 6/2026		
Total Award Amount (including indirect costs):	\$1,545,677		
Person months per budget period			
	Year	Person Months	
1.	2024	1.8 calendar	
2.	2025	1.8 calendar	
3.	2026	1.8 calendar	

REFERENCES

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