Curriculum Vitae

JERAMIAH J. SMITH

CURRENT ADDRESS

University of Kentucky
Department of Biology
Lexington, KY 40506
Telephone: (859) 948-3674
Fax: (859) 257-1717
E-mail: jjsmit3@uky.edu

EDUCATION

University of Kentucky, Ph.D. in Biology, 2007
Colorado State University, M.S. in Biology, 2002
Black Hills State University, B.S. in Biology, *cum laude*, 1998

APPOINTMENTS

Associate Professor, University of Kentucky, Department of Biology (2017 - Current)
Assistant Professor, University of Kentucky, Department of Biology (2011 - 2017)
Postdoctoral Fellow, University of Washington Department of Genome Sciences and Benaroya Research Institute at Virginia Mason (2007 - 2011)
Research Assistant, University of Kentucky (2002 - 2007)
Research Fellow, University of Kentucky (2002 - 2003, 2006 - 2007)
Research Assistant, Colorado State University (1999 - 2002)
Teaching Assistant, Colorado State University (1999 - 2001)
Undergraduate Research Assistant, Black Hills State University (1996 - 1999)

GRANTS AND FELLOWSHIPS

ACTIVE

NIH R35 08/01/18 - 07/31/23 $1,852,090
Functional Analysis of Programmed Genome Rearrangement
Goals - The major goals of this project are dissecting the underlying molecular mechanisms of programmed genome rearrangement and the functions of eliminated genes.
Role - PI: 3.57 calendar months of effort per year.

NSF MCB - Smith (PI) 07/15/18 - 06/30/22 $900,000
Reconstructing the Biology of Ancestral Vertebrate Genomes
Goals - The major goals of this project are to characterize the evolution of genome biology and structure, over deep vertebrate ancestry.
Role - PI: 1.0 calendar months of effort per year.

NIH R24 - Voss (PI) 04/01/12 - 06/30/20 $4,124,739*
Research Resources for Model Amphibians
Goals - The major goals of this project are to support research using the *Ambystoma mexicanum* by developing a genome assembly and epigenomic datasets.
Role - Co-I with 2.5 calendar months of effort per year *(reduced to 1.79 months effort in 2019 to adjust for effort on R35)*. My specific duties include the design and analysis of all genomic and epigenomic studies.
*Funding includes two 4-year grant cycles and a supplement that was awarded in the amount of $150,000 in 2015.

DOD/ARO - Voss (PI) 08/01/17 - 07/31/21 $443,419
Identification of Regeneration-Specific Enhancers from a Highly Regenerative Amphibian Model
Goals - The major goals of this project are identify enhancers and epigenetic signatures that mediate reprogramming in the context of regeneration.
Role - Co-I with 0.5 calendar months of effort per year.

NIH R01 - Seifert (PI) 03/13/17 - 02/29/21 $1,655,500
Macrophage phenotype orchestrates mammalian tissue regeneration
Goals - The major goals of this project are to identify macrophage subtypes that regulate regeneration and manipulate inflammation to stimulate regeneration in response to injury.
Role - Co-I with 0.24 calendar months of effort per year *(reduced to 0.15 months effort in 2019 to adjust for effort on R35)*. My specific duties include consultation and participation in bioinformatics analyses.

COMPLETED AT UNIVERSITY OF KENTUCKY

NIH R01 08/23/13 - 08/22/19 $1,414,708
*** Replaced by current R35 ***
Programmed Genome Rearrangement and the Genetics of Somatic Recombination
Goals - The major goals of this project are dissecting the molecular basis of programmed genome rearrangement and testing the hypothesis that deleted genes contribute to cancer or other genomic disease.
Role - PI: 2.0 calendar months of effort per year.

NIH S10 - Morris (PI) 07/01/16 - 06/30/17 $597,054
Equipment Grant for Purchase of a Light Sheet Microscope
Goals – Purchase of a light sheet microscope to enhance ongoing research activities supported by NIH.
Role - Co-I, one of several primary users.

BioNano Genomics Grant Program 04/13/15 - 04/13/16 4 optical maps
Improving the Lamprey Genome Assembly
Goals - The major goals of this project are to improve the assembly of the lamprey genome and understanding of the process of programmed genome rearrangement by generating optical maps from somatic (blood) and germline (sperm) DNA. http://www.bionanogenomics.com/grant/
Role – PI

MBL-UC Collaboration Award 02/20/15 - 02/19/16 $40,000
The Molecular Evolution of a Neuron
Goals - The major goals of this are to sequence individual neurons from zebrafish and lamprey in order to identify transcriptional signatures characteristic of Mauther neurons.

Role - Co-PI: my specific duties included the development of computational approaches to the analysis of transcriptomic datasets and cross-species comparisons. Collaboration with Morgan (Woods Hole Marine Biological) and Hale (University of Chicago) labs.

Department of Defense (ARO: Voss PI) 08/25/11 - 10/31/15 $375,000
Genome Sequencing to Enable a Model Salamander for Tissue Regeneration Research
Goals - The major goals of this project are to support regeneration research by developing genomic sequence information for Ambystoma mexicanum and a draft assembly of chromosome 14.
Role - Co-I with 1.2 calendar months of effort per year. My specific duties include the development of chromosome microdissection techniques and analysis of resulting datasets.

Subaward (from NIH-R24: Amemiya PI) 04/01/12 - 3/31/15 $63,950
Germline sequence resources & analyses in a vertebrate model that undergoes PGR
Goals - The major goal of this project are to generate an annotated draft assembly of the lamprey germline genome via next gen sequencing.
Role – Subcontract with 1.0 calendar months of effort per year. My specific duties included the design of sequencing studies and analysis of resulting datasets.

Bell Fellowship - Woods Hole MBL 07/01/14 - 08/31/14 $25,000*
Defining the conserved molecular pathways underlying successful regeneration after SCI
Goals – development of comparative genomics approaches to identify conserved molecular responses underlying successful regeneration after SCI in lamprey and salamander, utilizing parallel injury models, data collection, molecular manipulations, and data analysis methods.
Role - Co-I, my duties include the development of computational methods for characterizing gene expression and comparing patterns between species.
*Award administrated by MBL and covered travel costs.

Subaward (from NIH-R01: Tsonis PI) 04/01/12 - 05/31/13 $100,000
Development of a genome resources for newt
Goals – Develop a linkage map for the newt (*Notophthalmus viridescens*)
Role – Subcontract: my specific duties include the development of an informative cross, development of methods for genotyping this large genome and analysis of multilocus genotypes. Collaboration with Voss lab.

OTHER COMPLETED GRANTS/FELLOWSHIPS

Ruth L. Kirschstein NRSA Individual Fellowship (NIH, F32) (2009 - 2010)
UW Genome Training Grant Postdoctoral Fellowship (NIH, T32-NSRA) (2007-2008)
Presidential Graduate Fellowship, University of Kentucky (2006)
Graduate Student Support Grant, University of Kentucky (2003)
Travel Support: G. Flora Ribble Enrichment Fund (2002 - 2005)
Graduate Academic Fellowship, University of Kentucky (2002)
Black Hills State University Biology Scholarship (1997)

REFEREED JOURNAL ARTICLES

***Equal contribution for primary authorship or corresponding authorship**

56) Timoshevskaya N, Voss SR, Labianca CN, High CR, ***Smith JJ**** (2020) **Large-scale variation in SNP density within the laboratory axolotl (Ambystoma mexicanum).** *Developmental Dynamics*, Online ahead of in print.

55) Marks RA, ***Smith JJ;*** van Buren R, McLetchie, DN (2020) **Expression dynamics of dehydration tolerance in the tropical plant *Marchantia inflexa***. *The Plant Journal,* 8722.

54) ***Smith JJ****, Timoshevskiy VA, Saraceno C (2020) **Programmed DNA Elimination in Vertebrates** *Annual Review of Animal Biosciences*. 9: Online ahead of in print.

53) Hess JE, ***Smith JJ***, Timoshevskaya N, Baker C, Caudill C, Graves D, Keefer M, Kinziger A, Moser M, Laurie Porter L, Greg Silver G, Whitlock S, Narum SR (2020) **Genomic islands of divergence infer a phenotypic landscape in Pacific lamprey.** *Molecular Ecology,* **29:** 3841-3856.

52) Liscano, Y, Arenas Gómez CM, ***Smith JJ,*** Voss SR, Paul Delgado JP (2020) **A tree frog (*Boana pugnax*) dataset of skin transcriptome for the identification of biomolecules with potential antimicrobial activities.** *Data in Brief*, **36:** 106084.

51) Voss SR, Rodgers AK, ***Smith JJ*** (2020) **Identification of immune and non-immune cells in regenerating axolotl limbs by single-cell sequencing.** *Experimental Cell Research*, **394:** 112149.

.

50) Nail AN, ***Smith JJ***, Peterson ML, Spear BT (2020) **Evolutionary Analysis of the Zinc Finger and Homeoboxes Family of Proteins Identifies Multiple Conserved Domains and a Common Early Chordate Ancestor.** *Genome Biology and Evolution*, **12**: 174-184.

49) Arenas Gómez CM, Woodcock RM, ***Smith JJ,*** Voss SR, Delgado JP (2020) **A de novo reference transcriptome for *Bolitoglossa vallecula*, an Andean mountain salamander in Colombia**. *Data in Brief*, **29**: 105256.

48) Timoshevskiy VA, Timoshevskaya N, ***Smith JJ**** (2019) **Germline specific repetitive elements in programmatically eliminated chromosomes of the sea lamprey (*Petromyzon marinus*).** *Genes*, ***10***: 832.

47) Hockman D, Chong-Morrison V, Green SA, Gavriouchkina D, Candido-Ferreira I, Ling ITC, Williams RM, Amemiya CT, Smith JJ, Bronner ME, Sauka-Spengler T (2019) **A genome-wide assessment of the ancestral neural crest gene regulatory network.** *Nature Communications,***10**: 4689.

46) Marks RA, ***Smith JJ***, Cronk Q, Grassa CJ, McLetchie DN (2019) **Genome of the tropical plant Marchantia inflexa: implications for sex chromosome evolution and dehydration tolerance.** *Scientific Reports*, **19:**8722.

45) ***Smith JJ****, Timoshevskaya N, Timoshevskiy VA, Keinath MC, Hardy D, Voss SR (2019) **A chromosome-scale assembly of the axolotl genome.** *Genome Research, **29**: 317-324*.

44) Keinath MC, Timoshevskaya N, Timoshevskiy VA, Voss SR, ***Smith JJ**** (2018) **Miniscule differences between sex chromosomes in the giant genome of a salamander.** *Scientific Reports*, **8**:17882.

43) Arenas Gómez CM, Woodcock RM, **Smith JJ,** Voss SR, Paul Delgado JP (2018) **Using transcriptomics to enable a plethodontid salamander (*Bolitoglossa ramosi*) for limb regeneration research.** *BMC Genomics*, **19**:704.

42) Dwaraka V, Woodcock MR, ***Smith JJ***, Voss SR (2018) **Comparative Transcriptomics of Limb Regeneration: Identification of Conserved Expression Changes Among Three Species of *Ambystoma*.** Genomics, **18**: 30362-30368.

41) Gatto KP, ***Smith JJ***, Lourenço LB (2018) **The mitochondrial genome of the endemic Brazilian paradoxical frog *Pseudis tocantins* (Hylidae).** Mitochondrial DNA Part B: Resources, **3**: 1106-1107.

40) ***Smith JJ*,*** Timoshevskaya N, Ye C, Holt C, Keinath MC, Parker HJ, Cook ME, Hess JE, Narum SR, Lamanna F, Kaessmann H, Timoshevskiy VA, Waterbury CKM, Saraceno C, Wiedemann LM, Robb SMC, Baker C, Eichler EE, Hockman D, Sauka-Spengler T, Yandell M, Krumlauf R, Elgar G, Amemiya CT (2018) **The Sea Lamprey Germline Genome Provides Insights Into Programmed Genome Rearrangement and Vertebrate Evolution.** *Nature Genetics*, **50:**270-277**.**

39) Herman PE, Papatheodorou A, Bryant SA, Waterbury CKM, Herdy JR, Arcese AA, Buxbaum JD, ***Smith JJ***, Morgan JR, Bloom O (2018) **Highly conserved molecular pathways, including Wnt signaling, promote functional recovery from spinal cord injury in lampreys.** *Scientific Reports,* **8:**742.

38) Marks RA, ***Smith JJ****,* Cronk Q, McLetchie DN (2017) **Variation in the Bacteriome of the Tropical Liverwort, *Marchantia inflexa*, Between the Sexes and Across Habitats**. *Symbiosis,* **75**: 93-101.

37) Timoshevskiy VA, Lampman RT, Hess JE, Porter LE, ***Smith JJ**** (2017) **Deep Ancestry of Programmed Genome Rearrangement in Lampreys.** *Developmental Biology*, **429:**31-34.

36) Woodcock MR, Vaughn-Wolfe J, Elias A, Kump DK, Kendall KD, Timoshevskaya N, Timoshevskiy V, Perry DW, ***Smith JJ,*** Spiewak JE, Parichy DM, Voss SR (2017) **Identification of Mutant Genes and Introgressed Tiger Salamander DNA in the Laboratory Axolotl, *Ambystoma mexicanum*.** *Scientific Reports*, **7:**6.

35) Timoshevskiy VA, Herdy JR, Keinath MC, ***Smith JJ**** (2016) **Cellular and molecular features of developmentally programmed genome rearrangement in a vertebrate (sea lamprey: *Petromyzon marinus*).** *PLoS Genetics*, **12**:e1006103.

34) Bryant SR, Herdy JR, Amemiya CT, ***Smith JJ**** (2016) **Characterization of somatically-eliminated genes during development: Lamprey (*Petromyzon marinus*).** *Molecular Biology and Evolution*, **33**:2337-2344.

33) Keinath MC, Voss SR, Tsonis PA, ***Smith JJ**** (2016) **A linkage map for the newt *Notophthalmus viridescens*: Insights in vertebrate genome and chromosome evolution.** *Developmental Biology*, S0012-1606:30355-30359.

32) Gawriluk TR, Simkin, J, Thompson KL, Biswas SK, Clare-Salzler Z, Kimani JM, Kiama SG, ***Smith JJ***, Ezenwa VO, & Seifert AW (2016) **Comparative analysis of ear hole closure identifies epimorphic regeneration as a discrete trait in mammals.** *Nature Communications,* **7**:11164.

31) Braasch I, Gehrke AR, ***Smith JJ***, Kawasaki K, Manousaki T, Pasquier J, Amores A, Desvignes T, Batzel P, Catchen J, Berlin AM, Campbell MS, Barrell D, Martin KJ, Mulley JF, Ravi V, Lee AP, Nakamura T, Chalopin D, Fan S, Wcisel D, Cañestro C, Sydes J, Beaudry FEG, Sun Y, Hertel J, Beam MJ, Di Palma F, Fasold M, Ishiyama M, Johnson J, Kehr S, Lara M, Letaw JH, Litman GW, Litman RT, Mikami M, Ota T, Saha NR, Williams L, Stadler PF, Wang H, Taylor JS, Fontenot Q, Ferrara A, Searle SMJ, Aken B, Yandell M, Schneider I, Yoder JA, Volff J-N, Meyer A, Amemiya

CT, Venkatesh B, Holland PWH, Guiguen Y, Bobe J, Shubin NH, Alföldi J, Lindblad-Toh K, Postlethwait JH (2016) **The spotted gar genome illuminates vertebrate evolution and facilitates human-teleost comparisons.** *Nature Genetics*, **48:**427-437.

30) Mukendi C, Dean N, Lala R, ***Smith JJ***, Bronner ME, Nikitina NV (2016) **Evolution of the vertebrate claudin gene family: Insights from the most basal vertebrate the sea lamprey.** *International Journal of Developmental Biology*, **60:**39-51.

29) Keinath MC, Timoshevskaya, NY, Timoshevskiy VA, Tsonis PA, Voss SR, ***Smith JJ**** (2015) **Initial characterization of the large genome of the salamander *Ambystoma mexicanum* using shotgun and laser capture chromosome sequencing.** *Scientific Reports*, **5:**16413.

28) ***Smith JJ***, Keinath MC (2015) **The sea lamprey meiotic map improves resolution of ancient vertebrate genome duplications.** *Genome Research*, **25:**1081-1090.

27) Decatur WA, Hall JA, ***Smith JJ***, Li W, Sower SA. (2013) **Insight from the lamprey genome: Glimpsing early vertebrate development via neuroendocrine-associated genes and shared synteny of gonadotropin-releasing hormone (GnRH).** *Gen Comp Endocrinol.,* **192**:237-245.

26) ***Smith JJ***, Kuraku S, Holt C, Sauka-Spengler T, Jiang N, Campbell MS, Yandell MD, Manousaki T, Meyer A, Bloom OE, Morgan JR, Buxbaum JD, Sachidanandam R, Sims C, Garruss AS, Cook M, Krumlauf R, Wiedemann LM, Sower SA, Decatur WA, Hall JA, Amemiya CT, Saha NR, Buckley KM, Rast JP, Das S, Hirano M, McCurley N, Guo P, Rohner N, Tabin CJ, Piccinelli P, Elgar G, Ruffier M, Aken BL, Searle SMJ, Muffato M, Pignatelli M, Herrero J, Jones M, Brown CT, Chung-Davidson YW, Nanlohy KG, Libants SV, Yeh CY, McCauley DW, Langeland JA, Pancer Z, Fritzsch B, de Jong PJ, Zhu B, Fulton LL, Theising B, Flicek P, Bronner M, Warren WC, Clifton SW, Wilson RK, Li W. (2013) **Sequencing of the sea lamprey (*Petromyzon marinus*) genome provides insights into vertebrate evolution**. *Nature Genetics*, **45:**415-421.

25) Amemiya CT, Alföldi J, Lee AP, Fan S, Philippe H, MacCallum I, Braasch I, Manousaki T, Schneider I, Rohner N, Organ C, Chalopin D, ***Smith JJ***, Robinson M, Dorrington RA, Gerdol M, Aken B, Biscotti MA, Barucca M, Baurain D, Berlin AM, Blatch GL, Buonocore F, Burmester T, Campbell MS, Canapa A, Cannon JP, Christoffels A, De Moro G, Edkins AL, Fan L, Fausto AM, Feiner N, Forconi M, Gamieldien J, Gnerre S, Gnirke A, Goldstone JV, Haerty W, Hahn ME, Hesse U, Hoffmann S, Johnson J, Karchner SI, Kuraku S, Lara M, Levin JZ, Litman GW, Mauceli E, Miyake T, Mueller MG, Nelson DR, Nitsche A, Olmo E, Ota T, Pallavicini A, Panji S, Picone B, Ponting CP, Prohaska SJ, Przybylski D, Saha NR, Ravi V, Ribeiro FJ, Sauka-Spengler T, Scapigliati G, Searle SMJ, Sharpe T, Simakov O, Stadler PF, Stegeman JJ, Sumiyama K, Tafer H, Turner-Maier J, van Heusden P, White S, Williams L, Yandell M, Brinkmann H, Volff J-N, Tabin CJ, Shubin N, Schartl M, Jaffe D, Postlethwait JH, Venkatesh B, Di Palma F, Lander ES, Meyer A, Lindblad-Toh K. (2013) **The African coelacanth genome provides insights into tetrapod evolution.** *Nature*, **496:**311-316.

24) Voss SR, Putta S, Walker JA, ***Smith JJ***, Maki N, Tsonis PA. (2013) **Salamander Hox clusters contain repetitive DNA and expanded non-coding regions: a typical Hox structure for non-mammalian tetrapod vertebrates?** *Human Genomics*, **7:**9.

23) ***Smith JJ***, Baker C, Eichler EE, Amemiya CT (2012). **Genetic consequences of programmed genome rearrangement.** *Current Biology* **22:**1524–1529. *(This paper was highlighted in a Dispatch in the same issue).*

22) ***Smith JJ***, Sumiyama K, Amemiya CT (2012). **A living fossil in the genome of a living fossil: active Harbinger transposons in the coelacanth genome.** *Molecular Biology & Evolution* **29:**985-993.

21) Voss SR, Kump DK, Putta S, Pauly N, Reynolds A, Henry R, Basa S, Walker JA, ***Smith JJ***. (2011**) Origin of amphibian and avian chromosomes by fission, fusion, and retention of ancestral chromosomes.** *Genome Research* **21:**1306-1312.

20) Page RB, Boley MA, ***Smith JJ***, Putta S, Voss SR (2010) **A hopeful monster reveals transcriptional signatures of adaptive brain development and evolution.** *BMC Evolutionary Biology* **10:**199.

19) ***Smith JJ***, Saha NR, Amemiya CT. (2010) **Genome biology of the cyclostomes and insights into the evolutionary biology of vertebrate genomes.** *Integrative and Comparative Biology* **50:**130-137.

18) ***Smith JJ***, Stuart A, Sauka-Spengler T, Clifton S, Amemiya CT. (2010) **Development and analysis of a germline BAC resource for the sea lamprey, a vertebrate that undergoes substantial chromatin diminution.** *Chromosoma* **119:**381-389.

17) Saha NR, ***Smith JJ***, Amemiya CT. (2010) **Evolution of adaptive immune recognition in jawless vertebrates.** *Seminars in Immunology* **22:**25-33*.*

16) Fitzpatrick BM, Johnson JR, Kump DK, ***Smith JJ***, Voss SR, Shaffer HB (2010) **Rapid spread of invasive genes into a threatened native species**. *PNAS* **107:**3606-3610.

15) ***Smith JJ***, Antonacci F, Eichler EE, Amemiya CT. (2009) **Programmed loss of millions of base pairs from a vertebrate genome.** *PNAS* **106:**11212-11217. *(This paper was recognized in several news articles, including ScienceNOW.org* & *Science 26 June 2009: Vol. 324. no. 5935, p. 1631).*

14) Fitzpatrick BM, Johnson JR, Kump DK, Shaffer HB, ***Smith JJ***, Voss SR (2009) **Rapid fixation of non-native alleles revealed by genome-wide SNP analysis of hybrid tiger salamanders.** *BMC Evolutionary Biology* **9**:176.

13) ***Smith JJ***, Voss SR. (2009) **Amphibian sex determination: segregation and linkage analysis using members of the tiger salamander species complex (*Ambystoma mexicanum* and *A. t. tigrinum*).** *Heredity* **102:**542-548. *(This paper was recognized in the issue highlights).*

12) ***Smith JJ***, Putta S, Zhu W, Pao GM, Verma I, Hunter T, Bryant SV, Gardiner DM, Harkins TT, Voss SR. (2009) **Genic regions of a large salamander genome contain long introns and novel genes**. *BMC Genomics* **10:**19.

11) Page RB, Voss SR, Samuels AK, ***Smith JJ***, Putta S, Beachy CK. (2008) **Effect of thyroid hormone concentration on the transcriptional response underlying induced metamorphosis in the Mexican axolotl (*Ambystoma*).** *BMC Genomics* **9:** 78.

10) ***Smith JJ***, Voss SR. (2007) **Bird and mammal sex chromosome orthologs map to the same autosomal region in a salamander (*Ambystoma*).** *Genetics* **177:** 607-613. *(This paper was recognized in the issue highlights).*

9) Putta S, ***Smith JJ****, Staben C, Voss SR. (2007) **MapToGenome: a comparative genomic tool that aligns transcript maps to sequenced genomes.** *Evolutionary Bioinformatics Online* **2:** 15-25.

8) ***Smith JJ***, Voss SR. (2006) **Gene order data from a model amphibian (*Ambystoma*): new perspectives on vertebrate genome structure and evolution.** *BMC Genomics* **7**: 219.

7) Page RB, Monaghan JR, Samuels AK, ***Smith JJ***, Beachy CK, Voss SR. (2006) **Microarray analysis identifies keratin loci as sensitive biomarkers for thyroid hormone disruption in the salamander *Ambystoma mexicanum*.** *Comparative Biochemistry and Physiology, Part C*. **145:** 15-27.

6) ***Smith JJ***, Kump DK, Walker JA, Parichy DM, Voss SR. (2005) **A comprehensive expressed sequence tag linkage map for tiger salamander and Mexican axolotl: enabling gene mapping and comparative genomics in *Ambystoma*.** *Genetics* **171:** 1161-1171.

5) Voss SR, ***Smith JJ****. (2005) **Evolution of salamander life cycles: A major-effect quantitative trait locus contributes to discrete and continuous variation for metamorphic timing.** *Genetics* **170:** 275-281. *(This paper was highlighted by the Faculty of 1000 in Biology, June 2005).*

4) ***Smith JJ***, Putta S, Walker JA, Kump DK, Samuels AK, Monaghan JR, Weisrock DW, Staben C, Voss SR. (2005) **Sal-Site: Integrating new and existing ambystomatid salamander research and informational resources.** *BMC Genomics* **6:** 181.

3) Samuels AK, Weisrock DW, ***Smith JJ***, France KJ, Walker JA, Putta S, Voss SR. (2005) **Transcriptional and phylogenetic analysis of five complete ambystomatid salamander mitochondrial genomes.** *Gene* **349:** 43-53.

2) Putta S, ***Smith JJ****, Walker JA, Rondet M, Weisrock DW, Monaghan J, Samuels AK, Kump K, King DC, Maness NJ, Habermann B, Tanaka E, Bryant SV, Gardiner DM, Parichy DM, Voss SR. (2004) **From biomedicine to natural history research: EST resources for ambystomatid salamanders.** *BMC Genomics* **5:** 54.

1) Voss SR, ***Smith JJ***, Gardiner DM, Parichy DM. (2001) **Conserved vertebrate chromosome segments in the large salamander genome.** *Genetics* **158:** 735-746.

OTHER ARTICLES / CHAPTERS

2) Smith JJ (2018) **Programmed DNA elimination: Keeping germline genes in their place** (Dispatch). *Current Biology* **2:** R601-603.

1) Smith JJ (2017) **Chapter 2, Large-Scale Programmed Genome Rearrangements in Vertebrates**; p.45-51. 405p. in Somatic Genome Variation. Li X, editor. Hoboken, NJ: Wiley Blackwell; 2017.

ORAL PRESENTATIONS

INVITED PRESENTATIONS

2020 - University of Illinois PEEC - **Deep Evolutionary Perspectives on Vertebrate Genome Reprogramming** (Zoom)

2020 - SMBE 2020 virtual symposium on germline / soma distinctions – **Programmed Genome Rearrangement in Lamprey** (Zoom)
2020 -
2019 - BYU Radio: Small Wonders - **The axolotl** (Sirius Radio)
2019 - University of Manitoba, International Lamprey Genomics Workshop - **Current and emerging genomic resources for various lamprey species** (Winnipeg, Canada)
2019 - University of California Merced - **The sea lamprey (*Petromyzon marinus*): Genome reprogramming over eons and embryogenesis** (Merced, CA)
2019 - Carnegie Institute for Embryology - **The sea lamprey (*Petromyzon marinus*): Genome reprogramming over eons and embryogenesis.** (Baltimore, MD)
2019 - François Jacob Conference: Evolution, Structure and Function of Chromosomes High Order Structure - **Evolution of Vertebrate Genome Biology: Eons and Embryogenesis.** (Paris, France)
2019 - Muséum National d'Histoire Naturelle - **Lessons from extreme vertebrate genomes: Big (axolotl) and ugly (lamprey).** (Paris, France)
2018 - Purdue University - **The sea lamprey (*Petromyzon marinus*): Genome reprogramming over eons and embryogenesis** (West Lafayette, IN)
2018 - Aquatic Models of Human Disease - **The sea lamprey (*Petromyzon marinus*): Genome reprogramming over eons and embryogenesis** (Woods Hole, MA)
2018 - NIGMS Director's Early-Career Investigator Lectures - **Ancient Bloodsuckers, Disposable Genes, and What It All Means [**https://www.nigms.nih.gov/News/meetings/Pages/2018-NIGMS-Directors-Early-Career-Investigator-Lecture.aspx or https://videocast.nih.gov/summary.asp?live=27347&bhcp=1] (Bethesda, MD).
2017 - Pennsylvania State University - **Evolution of Vertebrate Genome Biology: Eons and Embryogenesis** (State College, PA)
2017 - University of Louisville - **A Deep Evolutionary Perspective on Genome Reprogramming and Stability** (Louisville, KY)
2016 - University of New Hampshire - **Evolution Vertebrate Genome Biology: Eons and Embryogenesis** (Durham, NH)
2016 - Stowers Institute Genome Assembly Technology Group - **A Deep Evolutionary Perspective on Vertebrate Genome Biology** (Stowers Institute for Medical Research, Kansas City, MO)
2016 - American Museum of Natural History - **Evolution Vertebrate Genome Biology: Eons and Embryogenesis** (New York, NY)
2015 - Cellular and Structural Biology Postgraduate Programme - **The Biology of Ancestral Vertebrate Genomes** (Instituto de Biologia, UNICAMP, Brazil)
2015 - 4th Brazilian Meeting of Cytogenetics - **Evolution of Genome Structure in the Vertebrate Lineage** (Atibaia, Brazil)
2015 - Genome 10K Conference - **Evolution of Genome Structure in the Vertebrate Lineage** (Santa Cruz, CA)
2015 - Department of Molecular and Cell Biology Departmental Seminar Series - **Large-Scale Genomic Change on Developmental and Geological Timescales** (University of Connecticut, Storrs)
2014 - Society for Molecular Biology & Evolution - **Evolution of Genome Structure in the Vertebrate Lineage.** (San Juan, Puerto Rico)
2014 - Departmental Seminar Series - **Large-Scale Genomic Change on Developmental and Geological Timescales** (HudsonAlpha Institute for Biotechnology, Huntsville)
2014 - Evolution and Development Seminar - **Evolution of Genome Structure in the Vertebrate Lineage.** (University of Colorado, Boulder)
2014 - Cell Biology, Stem Cells and Development Program Seminar Series - **Large-Scale Genomic Change on Developmental and Geological Timescales** (University of Colorado Anschutz Medical Campus, Denver)
2014 - UVA Biochemistry And Molecular Genetics Department Seminar Series - **Large-Scale Genomic Change on Developmental and Geological Timescales** (University of Virginia, Charlottesville)

2013 - Departmental of Veterinary Sciences Seminar Series - **Changes in Genome Structure Over Evolutionary and Developmental Time: Lessons from the Lamprey Genome.** (University of Kentucky)
2013 - University Seminar Series - **Lessons from the Lamprey Genome: Origin and Evolution of Large-Scale Change.** (University of Nebraska, Kearney)
2013 - Science Pub - **Why Should We Care About the Genome of an Ugly Fish?** (University of Nebraska, Kearney)
2013 - MATH and PIZZA - **Lessons from the Lamprey Genome: Origin and Evolution of Large-Scale Change.** (University of Kentucky)
2013 - Stowers Institute Seminar Series - **Origin and Evolution of Large-Scale Genomic Change.** (Stowers Institute for Medical Research, Kansas City, MO)
2013 - 24th CDB Meeting: Genomics and Epigenomics with Deep Sequencing - **Lessons from the Lamprey Genome: Origin and Evolution of Large-Scale Change.** (Kobe, Japan)
2013 - Plant and Animal Genomes Conference - **Programmed Genome Rearrangements and the Genetic Consequences of Pluripotency.** (San Diego, CA)
2013 - NSF EPSCoR Bioinformatics Workshop - **Evolution of Recombination and Genome Structure.** (Little Rock, AR)
2011 - North American Society for Comparative Endocrinology - **Co-Chair NASCE 2011 Workshop: Genomic tools and applications in comparative endocrinology: Development and analysis of lamprey genome assembly: challenges and insights.** (University of Michigan, Ann Arbor, MI)
2010 - Plant and Animal Genomes Conference - **Tight Regulation of Large-Scale Somatic Rearrangement in a Vertebrate Genome.** (San Diego, CA)
2010 - University of Kentucky - **Vertebrate Genome Rearrangement and Developmentally Regulated Gene Loss.** (Lexington, KY)
2008 - Black Hills State University - **Deep Evolutionary Perspectives on the Structure of Vertebrate Genomes.** (Spearfish, SD)
2006 - Centre College - **Gene Order Data from a Model Amphibian (*Ambystoma*): New Perspectives on Vertebrate Genome Structure and Evolution.** (Danville, KY)

INTERNATIONAL MEETINGS

2017 - Latin American Society for Developmental Biology - **Developmentally Programmed Rearrangement of the Lamprey Genome** (Medellin, Colombia)
2016 - Lamprey Immunity Conference 2016 - **Genome Rearrangements Over Evolution and Development** (Liaoning Normal University, Dalian, China)
2014 - Plant and Animal Genomes Conference - **A Fishy Tale of Two Sequenced Vertebrate Genomes: Lamprey and Coelacanth.** (San Diego, CA)
2012 - The Biology of Genomes - **Programmed gene deletions segregate pluripotent germline cell lineages in a vertebrate.** (Cold Springs Harbor Laboratories, NY)
2011 - Stem Cell Biology - **Involvement of programmed genome rearrangements in lineage sorting of pluripotency functions in a basal vertebrate** (Cold Springs Harbor Laboratories, NY) (J. Smith first Author, presented by C. T. Amemiya)
2010 - Society for Integrative and Comparative Biology - **Tight Regulation of Large-Scale Genome Rearrangement: The Sea Lamprey (*Petromyzom marinus*).** (Seattle, WA)
2009 - Fifth International Symposium on Vertebrate Sex Determination - **The Salamander (Ambystoma mexicanum): Perspectives on Very Old and Very Young Sex Chromosomes.** (Kona, HI)
2005 - Evolution Meeting - **Evolution of Vertebrate Genomes: Perspectives from Tiger Salamander.** (Fort Collins, CO)
2004 - Evolution Meeting - **Comparative Genetics of Amphibian Metamorphosis: *Ambystoma tigrinum* Species Complex.** (Fairbanks, AK)

POSTER PRESENTATIONS

INTERNATIONAL MEETINGS

2019 - Annual Biomedical Research Conference for Minority Students - **Developmental Atlas to Characterize the Advancement of Programmed Genome Rearrangement in Lampreys.** (Anaheim, California)
2019 - Salamander Models in Cross-Disciplinary Biological Research - **Analysis of global DNA methylation reveals a changing CpG methylation landscape during axolotl embryo tail regeneration.** (Boston, MA).
2019 - Society for Developmental Biology 79th Annual Meeting - **Understanding the role of Polycomb-group Proteins during Programmed Genome Rearrangement in Sea Lamprey.** (Boston, MA).
2019 - The Biology of Genomes - **Genome reprogramming over eons and embryogenesis—Lessons from the sea lamprey (Petromyzon marinus).** (Cold Springs Harbor Laboratories)
2019 - The Biology of Genomes - **Improving and using a chromosome-scale assembly of the enormous (32 Gb) axolotl genome.** (Cold Springs Harbor Laboratories)
2019 - The Biology of Genomes - **Functional characterization of programmatically eliminated genes in the sea lamprey.** (Cold Springs Harbor Laboratories)
2019 - Plant and Animal Genomes Conference - **Understanding the role of Polycomb-group proteins during Programmed Genome Rearrangement in sea lamprey.** (San Diego, CA)
2019 - Plant and Animal Genomes Conference - **Landscape of Repetitive Elements in Somatically Excluded Chromosomes of the Sea Lamprey (*Petromyzon marinus*).** (San Diego, CA)
2018 - Population, Evolutionary and Quantitative Genetics Conference - **Functional parallels between programmed DNA loss in sea lamprey and Polycomb-mediated silencing.** (Madison, Wisconsin)
2018 - Population, Evolutionary and Quantitative Genetics Conference - **Integrative Cytogenetics of the Sea Lamprey Chromosome Elimination.** (Madison, Wisconsin)
2018 - Population, Evolutionary and Quantitative Genetics Conference - **Comparative genomic analysis of programmed DNA elimination in lamprey.** (Madison, Wisconsin)
2017 - International Society of Developmental Biology - **A Deep Evolutionary Perspective on Vertebrate Genome Biology.** (Singapore, Singapore)
2016 - The Biology of Genomes - **A Deep Evolutionary Perspective on Vertebrate Genome Biology.** (Cold Springs Harbor Laboratories)
2016 - The Biology of Genomes - **Understanding the Sea Lamprey Transcriptome During Programmed Genome Rearrangement.** (Cold Springs Harbor Laboratories)
2016 - The Biology of Genomes - **Epigenetic, Cytogenetic and Cellular Aspects of Programmed DNA Elimination in Vertebrate Sea Lamprey (Petromyzon marinus).** (Cold Springs Harbor Laboratories)
2016 - The Biology of Genomes - **Characterization of a Large Vertebrate Genome and Sex Chromosomes Using Shotgun and Laser-Capture Chromosome Sequencing.** (Cold Springs Harbor Laboratories)
2016 - Advances in Genome Biology and Technology - **The Lamprey Genome: Deep Insights, Deep Challenges** (Orlando, Florida)
2014 - The Biology of Genomes - **The Sea Lamprey Meiotic Map Resolves Ancient Vertebrate Genome Duplications.** (Cold Springs Harbor Laboratories)
2013 - Plant and Animal Genomes Conference - **Laser Capture Microdissection and Whole Chromosome Amplification for Sequencing Large Genomes.** (San Diego, CA)
2013 - Plant and Animal Genomes Conference - **Small RNAs and Programmed Genome Rearrangement.** (San Diego, CA)

2013 - Plant and Animal Genomes Conference - **Analysis of Pluripotency Genes in Spinal Cord Regeneration of the Sea Lamprey (Petromyzon marinus).** (San Diego, CA)
2013 - Plant and Animal Genomes Conference - **Genomic Characterization of the Germline Marker vasa in a Species that Undergoes Programmed Genome Rearrangement.** (San Diego, CA)
2013 - The Biology of Genomes - **Timing and outcome of the last pan-vertebrate genome duplication.** (Cold Springs Harbor Laboratories, NY)
2013 - NSF EPSCoR Bioinformatics Workshop - **Genome Sequencing Projects at the University of Kentucky.** (Little Rock, AR)
2013 - Plant and Animal Genomes Conference - **Programmed Genome Rearrangements and the Genetic Consequences of Pluripotency.** (San Diego, CA)
2013 - Plant and Animal Genomes Conference - **Construction of a Comprehensive Linkage Map in the Sea Lamprey, Petromyzon marinus.** (San Diego, CA)
2011 - Keystone Symposium on Evolutionary Developmental Biology - **Tight Regulation of Large-Scale Somatic Rearrangement in a Basal Vertebrate Genome.** (Tahoe City, CA)
2010 - The Biology of Genomes - **Tight Regulation of Large-Scale Somatic Rearrangement in a Basal Vertebrate Genome.** (Cold Springs Harbor Laboratories, NY)
2009 - The Biology of Genomes - **Megabase-Scale Rearrangements are Tightly Regulated in a Basal Vertebrate Genome.** (Cold Springs Harbor Laboratories, NY)
2008 - The Biology of Genomes - **Developmentally Regulated Rearrangement of the Lamprey Genome.** (Cold Springs Harbor Laboratories, NY)
2002 - Microevolution of Developmental Processes - **Comparative EST Analysis of Regeneration: Axolotl Limb vs. Zebrafish Fin.** (Indiana University, IN)
2000 - Evolution Meeting - **Conserved Chromosomal Segments in the Large Salamander Genome.** (Knoxville, TN)

ACADEMIC SERVICE

MENTORING

University of Kentucky (2011-): Postdoctoral Fellows: Vladimir Timoshevskiy, Nataliya Timoshevskaya, Girish Babu (visiting Scholar From Indian Central Institute of Fisheries Education)**. Graduate Students:** Cody Saraceno, Charles Cassone (Co-Advised), Courtney Waterbury, Melissa Keinath (Graduated Ph.D., 2017), Kaleb Pretto Gatto (visiting student from Brazil), Stephanie Bryant (Graduated MS, 2016), Kalen Wright (Graduated MS, 2016), Lisa Taylor, Joseph Herdy (Graduated MS, 2014). **Undergraduates:** Hunter Maxwell, Hannah Newberry, Myles Gibson, Claire Scott, Rachel Farmer, Brittany Wilkinson, Sarah Whelan, Kalen Wright, Zach Fortenberry, Morgan Siever, Aum Patel, Mackenzie Samson, Amber Hale, William Osborne, Patrick Osterhaus. **KBRIN trainees:** Gena Wilson, Taylor Stuart, Kyj Mandzy, Jacob Drescher, Matthew Lohr, Rebecca Radcliffe.

University of Washington & Benaroya Research Institute (2007-2011): Graduate Students: Anne Lyons. **Undergraduate Students:** Nicholas Noll**,** David German, Jeff Johnson. **Secondary School Students** Lauren Lewis – Internship through the Physician Scientist Training Program.

University of Kentucky (2002-2007): Undergraduates: D. Kevin Kump - four coauthored publications**,** Jonathan Hobbs**,** Shawn Mulberry**,** Brittany Dixon**. Secondary School Students:** Ryan Will – 1st Place, Central Kentucky Regional Science and Engineering Fair, Biochemistry Division 2007.

Colorado State University (1999-2002): Undergraduates: Nicholas J Maness - one coauthored publication, David C. King - one coauthored publication, Rebecca Hart - one coauthored publication.

TEACHING

Bioinformatics (Bio 520): Fall 2012-2018 (*developed this course*)
Undergraduate Seminar (Bio 425): Spring 2012, 2016, 2018, Fall 2019
Graduate Student Seminar (Bio 770): Spring 2013, 2014, 2017
Special Topics in Molecular and Cellular Genetics (Bio 601): Spring 2018, 2019

SERVICE

2020 - Appointed to ***Genome Research*** Editorial Board
2020 - Guest Editor for Special Issue on Cordate Genomics for ***Development***

Reviewer for: *Nature, Nature Genetics, Nature Communications, PLOS One, eLife, Current Biology, Genome Research, Evolution, Developmental Biology, GIGA, PEERJ, Briefings in Bioinformatics, Cellular and Molecular Life Sciences, Molecular Biology and Evolution, Molecular Ecology, Molecular Ecology Resources, Heredity, Genetica, Journal of Experimental Zoology, BMC Research Notes…*

International Outreach:
2017 - Lead Instructor, Short Course in Bioinformatics for Non-Model Species. (University of Antioquia, Medellin, Columbia).
2015 - Guest lecture on genome evolution (Instituto de Biologia, UNICAMP, Brazil).
2013 - Presentation to visiting from Xi'an Goaxin No.1 High School in (China).
2012 - Co-taught Short Course in Bioinformatics for Next-generation Sequencing. (University of Antioquia, Medellin, Columbia).

Local Recruitment & Outreach:
2016 - Developed and managed a booth that encouraged local primary and secondary students to examine chromosomes from diverse vertebrate taxa (T.H. Morgan BioBonanza).
2012-18 - Research presentations to visiting KBRIN scholars (Kentucky Biomedical Research Infrastructure Network).
2014 - Presentation to visiting NCUR scholars (National Council on Undergraduate Research).
2014 - Reviewer for internal grant applications (Spring Research Support Grant Review Committee).
2013 - Presentation to visiting students from Henry County Middle School.
2012 - Participated in College of Arts and Sciences Open House for student recruitment.
2009 - Type 1 Diabetes Open House, Benaroya Research Institute, Seattle, WA.
2008 - Co-Organizer: Genome Training Grant Symposium, Department of Genome Sciences, University of Washington.
2004 - Science fair at Morton Middle School, Lexington, KY.

Local Service:
2020 - Interim Chair of Seminar Committee (during Zoompocalypse 2020)
2012-20 - High-End Computational Support: Provided access to lab's internal computational resources for research (biology, College of Medicine and collaborators in Colombia and Brazil) and for education the Bio520 course for deep data analyses that are not feasible on the University's high-performance computing cluster.
2012-20 - Consultation: On several sequencing projects being performed by Voss, Linnen, McLetchie, OHara, Seifert, Harrison, Famulski and other labs.
2012-20 - Thomas Hunt Morgan Committee
2014-19 - Center for Computational Sciences (CCS) Faculty Advisory Committee
2018-19 - Five-Year Hiring Plan Development
2019 – Biology Seminar Committee

2019 - Faculty Merit Review Committee
2014-18 - A&S Dean's Research/Scholarship Advisory Committee
2018 - Cell Biologist Search Committee
2018 - Presidential Graduate Fellowship Proposal Review Committee
2012-13,16-17 - Graduate Affairs Committee
2016 - T.H. Morgan Sesquicentennial Celebration Committee
2015 - Cell Biologist Search Committee
2015 - Executive Committee
2014-15 - Research Support Grant Proposal Review Committee
2012-14 - Genetics Minor Committee
2013-14 - Developmental Biologist Search Committee
2012 - Cluster Hire Development Committee