

FESCHOTTE LAB WEBSITE: <http://feschotte.genetics.utah.edu/>

## BIOGRAPHICAL DATA

---

**Current Appointment** Associate Professor (with tenure), Department of Human Genetics, University of Utah School of Medicine, Salt Lake City, UT

### Previous Appointments

Sept 2009-June 2012 Associate Professor (with tenure), Department of Biology, University of Texas, Arlington  
 Aug 2004-Aug 2009 Assistant Professor, Department of Biology, UT Arlington  
 Nov 2000-July 2004 Postdoctoral Research Associate, Departments of Plant Biology and Genetics, University of Georgia, Athens, GA

### Academic Pedigree

1992-1996	B.Sc.	Université Paul Sabatier, Toulouse, France
1996-1997	M.Sc.	Université Pierre & Marie Curie, Paris, France
1997-2001	Ph.D.	Université Pierre & Marie Curie, Paris, France (with Pr. Claude Mouchès)
2000-2004	Postdoc	University of Georgia, Athens, GA, USA (with Dr. Susan Wessler)

## HONORS & SYNERGISTIC ACTIVITIES

---

### Honors & Awards

2009 Outstanding Research Achievement Award, College of Science, UT Arlington  
 2007 SMBE Nominating Committee for President, Councilor and Treasurer  
 1997-2000 Pre-doctoral Graduate Fellowship, French Department of Education, Research and Technology

### Editorial Boards

2013-present, co-Editor-in-Chief, *Mobile DNA*  
 2013-present: Associate Editor, *PLOS Genetics*  
 2013-present: Member, *Faculty of 1000*, Section Evolutionary/Comparative Genomics  
 2011-present: Associate Editor, *Frontiers in Evolutionary and Population Genetics*  
 2011-present: Review Editor, *Frontiers in Bioinformatics and Computational Biology*  
 2010-present: Editorial Board, *Mobile Genetic Elements*  
 2009-2013: Editorial Board, *Mobile DNA*  
 2007-2010: Associate Editor, *Gene*  
 2006-2010: Editorial Advisory Board, *Recent Patents on DNA & Gene Sequences*

### Reviewing Activities

#### Grant Panels & Study Sections:

NIH Study Section F08 fellowships, 'Genes, Genomes and Genetics', *ad hoc* member, Jun 2014  
 NIH Study Section F08 fellowships, 'Genes, Genomes and Genetics', *ad hoc* member, Nov 2013  
 NIH Study Section 'Genetic Variation and Evolution', *ad hoc* member, Feb 2013  
 NIH Special Emphasis Panel ZRG-1 'Genes, Genomes and Genetics', *ad hoc* member, October 2012

NIH Special Emphasis Panel ZRG-1 'Studies of Molecular, Genomics and Regulation of Gene Expression', *ad hoc* member, July 2012

NIH Special Emphasis Panel ZRG-1 'Molecular, Genomic, Genetics, and Evolutionary Studies, *ad hoc* member, March 2012

NIH Special Emphasis Panel 'Bacterial Pathogenesis', *ad hoc* member, Nov 2011

NIH Study Section 'Genetic Variation and Evolution', *ad hoc* member, Oct 2010

NIH Study Section 'Genetic Variation and Evolution', *ad hoc* member, Feb 2010

UT Southwestern/UT Arlington Joint Program, review panel, Feb 2007

UNTHSC/UTA Collaborative Grant Program, review panel, 2006, 2007

UTA/UTD Seed Grant Program, review panel, March 2006

#### Other Grant Proposals (14):

NSF (8), USDA (1), Royal Society UK (1), Austrian Science Foundation (1), CNRS ATIP program (1), ANR France (2)

#### Journal articles (168 articles, 47 journals):

Science (7)	Nucleic Acids Research (7)	PlanPlant Molecular Biology (1)
Nature (5)	Genetics (4)	Theoretical and Applied Genetics (1)
Nature Genetics (1)	Evolution (1)	Cytogenetics and Genome Research (1)
Nature Reviews Genetics (2)	Genomics (1)	Genome Dynamics (1)
Nature Mol Struc Biol (1)	Gene (12)	Systematic Biology (1)
Nature Communications (1)	Genetica (8)	Biology Direct (1)
Cell Host-Microbe (1)	J. Molecular Biology (1)	Recent Patents on DNA and Gene Sequences (1)
PNAS (22)	Plant Cell (1)	Trends in Parasitology (1)
PLoS Biology (3)	Plant Physiology (1)	Journal of Heredity (1)
PLoS Genetics (10)	BMC Biology (1)	Mobile DNA (3)
PLoS Computational Biology (1)	BMC Genomics (2)	Mobile Genetic Elements (1)
PLoS One (3)	BMC Evolutionary Biol. (1)	Briefings in Functional Genomics (1)
Trends in Genetics (4)	BMC Molecular Biology (1)	Proc. Trans. Royal Society B (1)
Genome Research (11)	J. Molecular Evolution (2)	
Genome Biology (4)	Heredity (1)	
Genome Biol. & Evol. (1)	Molecular Gen. & Genomics (4)	
Mol. Biol & Evol. (24)	Insect Molecular Biology (2)	

#### Conferences & Symposia Organized

**2014 Keystone Symposium on Mobile Genetic Elements and Genome Evolution**, Santa Fe, NM, March 9-14, 2014 (co-organized with N. Craig and H. Levin)

**2013 FEMS Congress Symposium 'Paleovirology: endogenous viruses and consequences of ancient viral infections'**, Leipzig, Germany, July 21-25 (co-organized with H. Malik)

**2013 SMBE Symposium 'Paleovirology: endogenous retroviruses, molecular arms-races, and evolutionary consequences'**, Chicago, IL, July 7-11 (co-organized with N. Elde)

**2010 SMBE Symposium on 'Horizontal Transfer in Eukaryotic Genome Evolution'**, Annual Meeting of the Society for Molecular Biology and Evolution, Lyon, France, July 4-8, 2010 (co-organized with I. Arkhipova)

**2010 ASM Conference on Mobile DNA**, Montréal, Canada, April 24-28, 2010 (co-organized with D. Voytas, H. Levin, G. Chaconas, N. Craig, P. Rice)

**2006 UT Metroplex Days, Symposium on Genomics and Bioinformatics**, Arlington, TX, December 4, 2006

---

**PUBLICATIONS**


---

All articles downloadable as PDF at: <http://feschotte.genetics.utah.edu/publications.htm>

‡ Corresponding Author \* Equal contribution

- xx. Lynch V.J.<sup>‡</sup>, Nnamani M., Brayer K.J., Wertheim J.O., Kosakovsky-Pond S.L., Grützner F., Bauersachs S., Kapusta A., Feschotte C. & Wagner G.P. Lineage-specific transposons drove massive gene expression recruitment during the evolution of pregnancy in mammals. *Cell Reports* (under review)
72. Kapusta A. & Feschotte C. (2014) Volatile evolution of long noncoding RNAs: mechanisms and biological implications. *Trends in Genetics* (under review)  
[review article]
71. Ha H., Song J., Wang S., Kapusta A., Feschotte C., Chen K.C. & Xing J. (2014) A comprehensive analysis of piRNAs from adult human testis and their relationship with genes and mobile elements. *BMC Genomics* 15: 545-561 [Jul 1]
70. Han M-J, Xu H-E, Zhang H-H, Feschotte C. & Zhang Z. (2014) *Spy*: a new superfamily of eukaryotic DNA transposons without target site duplications. *Genome Biology and Evolution* 6: 1748-1757 [Jun 24]
69. Zhang H-H, Feschotte C., Han M-J, Zhang Z. (2014) Recurrent horizontal transfer of *Chapae* transposons in diverse invertebrate and vertebrate animals. *Genome Biology and Evolution* 6: 1375-1386 [May 27]
68. Campos-Sanchez R., Kapusta A., Feschotte C. Chiaromonte F. & Makova K.D.<sup>‡</sup> (2014) Genomic Landscape of human, bat and ex vivo DNA transposon integrations. *Molecular Biology and Evolution* 31: 1816-1832 [May 7]
67. Castoe T.A.<sup>‡</sup> et al. (C.F. one of 39 authors) (2013) The Burmese python genome reveals the molecular basis for extreme adaptation in snakes. *Proceedings of the National Academy of Sciences USA* 110: 20645-20650 [Dec 15]
66. Chuong E. & Feschotte C. (2013) Transposons Up the Dosage. *Science* 342: 812-813 [Nov 15]  
[perspective]
65. Feschotte C.<sup>‡</sup> & McCormick J.F. (2013) Evolutionary history and impact of human DNA transposons. In: *Encyclopedia of Life Sciences*, John Wiley and Sons, Ltd.  
[book chapter]
64. Zhuo X., Rho M. & Feschotte C.<sup>‡</sup> (2013) Genome-wide characterization of endogenous retroviruses in the bat *Myotis lucifugus* reveals recent and diverse infections. *Journal of Virology* 87: 8493-8501 [May 29]  
[cover article] ['spotlight' article]

63. Kapusta A., Kronenberg Z.\* , Lynch V.J.\* , Zhuo X., Ramsay L., Bourque G., Yandell M. & Feschotte C. † (2013) Transposable elements are major contributors to the origin, diversification, and regulation of vertebrate long noncoding RNAs. ***PLOS Genetics*** 9:e1003470 (20 pages) [Apr 25]
62. Gilbert C., Waters R., Feschotte C. & Schaack S. † (2013) Horizontal transfer of *OC1* transposons in the Tasmanian devil. ***BMC Genomics***. 14: 134-140 [Feb 27]
61. Mitra R., Li X., Kapusta A., Mayhew D., Mitra R.D., Feschotte C. & Craig N.L. † (2013) Functional characterization of *piggyBat* from the bat *Myotis lucifugus* unveils an active DNA transposon in a mammalian genome. ***PNAS*** 110: 234-239 [Dec 17]
60. Li X., Ewis H., Hice R.H., Malani N., Parker N., Zhou L., Feschotte C. Bushman F.D., Atkinson P.W. & Craig N.L. † (2013) A resurrected mammalian hAT transposable element and a closely related insect element are highly active in human cell culture. ***Proceedings of the National Academy of Sciences USA*** 110:478-487 [Oct 22]
59. Llorens C. †, Bernet G.P., Ramasamy S., Feschotte C. & Moya A. (2012) On the transposon origins of mammalian SCAND3 and ZRBA2, two zinc-finger genes carrying an integrase/transposase domain. ***Mobile Genetic Elements*** 2: 205-210 [Dec 2]
58. Arkhipova I., Batzer M.A., Brosius J. †, Feschotte C., Moran J.V., Schmitz J. & Jurka J. (2012) Genomic impact of eukaryotic transposable elements. ***Mobile DNA*** 3: 19-27 [meeting report]
57. Feschotte C. † (2012) Review of "Mobile DNA - finding treasure in junk" by Haig H. Kazazian ***Mobile DNA*** 3:16-17 [book review]
56. Feschotte C. † & Gilbert C. † (2012) Endogenous viruses: insights into viral evolution and impact on host biology. ***Nature Reviews Genetics*** 13: 283-296 [March 16] [review article]
55. Sun C., Shepard D.B., Chong R.A., Lopez-Arriaza J., Hall K., Castoe T.A., Feschotte C., Pollock D.D., Mueller R.L. † (2012) LTR retrotransposons contribute to genomic gigantism in plethodontid salamanders. ***Genome Biology and Evolution*** 4: 168-183 [Dec 26]
54. Gilbert C., Hernandez S.S., Flores J., Dao, T.M., Smith E.N. & Feschotte C. † (2012) Rampant horizontal transfer of *SPIN* transposons in squamate reptiles. ***Molecular Biology and Evolution*** 29: 503-515 [July 18]
53. Kejnovsky E. †, Hawkins J. & Feschotte C. (2012) The biology and evolution of plant transposable elements. In: ***Plant Genome Diversity Vol. 1*** (Wendel J.F, Greilhuber J., Dolezel J., Leitch I.J., eds.) Springer. Pp. 17-34 [book chapter]
52. Castoe T.A., de Koning J.A.P., Hall K.T., Yokoyama K.D., Gu W., Smith E.N., Feschotte C., Uetz P., Ray D.A., Dobry J., Bogden R., Mackessy S.P., Bronikowski A.M., Warren W.C., Secor S.M., & Pollock D.D. † (2011) Sequencing the genome of the Burmese python (*Python molurus bivittatus*) as a model for studying extreme adaptations in snakes. ***Genome Biology*** 12: 406-413 [July 28]

51. Castoe T.A., Hall K.A., Guibotsy M.L., Gu W., de Koning J.A.P., Fox S.E., Poole A.W., Vemulapalli V. Daza J.M., Mockler T. Smith E.N., Feschotte C. & Pollock D.D.<sup>‡</sup> (2011) Discovery of highly divergent repeat landscapes in snake genomes using high throughput sequencing. **Genome Biology and Evolution** 3: 641-653
50. Gilbert C.<sup>‡</sup>, Schaack S. & Feschotte C. (2010) Mobile elements jump between parasites and vertebrate hosts. **Médecine Sciences (Paris)** 26: 1025-1027 [Dec 26]  
[commentary, in French]
49. Arensburger et al. (C.F. one of 76 co-authors) (2010) Sequencing of *Culex quiquefasciatus* establishes a platform for mosquito comparative genomics. **Science** 330: 86-88 [Oct 1]
48. Gilbert C.<sup>‡</sup> & Feschotte C.<sup>‡</sup> (2010) Genomic fossils calibrate the long-term evolution of Hepadnaviruses. **PLOS Biology** 8: e1000495 (12 pages) [Sep 28]
47. Chaconas G., Craig N.L., Curcio M.J., Deininger P.L., Feschotte C., Levin H., Rice P.A. & Voytas D.F. (2010) Meeting Report for Mobile DNA 2010. **Mobile DNA** 1:20-25  
[meeting report]
46. Schaack S.\*, Gilbert C.\* & Feschotte C.<sup>‡</sup> (2010) Horizontal transfer of transposable elements and why it matters for eukaryotic evolution. **Trends in Ecology and Evolution** 25: 537-546  
[review article]
45. Gilbert C.\*, Schaack S.\*, Pace J.K, II, Brindley P.J. & Feschotte C.<sup>‡</sup> (2010) A role for host-parasite interactions in the horizontal transfer of DNA transposons across animal phyla. **Nature** 464: 1347-1350 [Apr 29]  
[evaluated by Faculty of 1000]
44. Singh A, Keswani U, Levine D, Feschotte C & Stojanovic N<sup>‡</sup> (2010) An algorithm for the reconstruction of consensus sequences of ancient segmental duplications and transposon copies in eukaryotic genomes. **International Journal of Bioinformatics Research & Applications** 6:147-162
43. Feschotte C.<sup>‡</sup> (2010) Bornavirus enters the genome. **Nature** 463: 39-40  
[News & Views]
42. Feschotte C.<sup>‡</sup> & Pritham E.J. (2009) A cornucopia of *Helitrons* shapes the maize genome. **Proceedings of the National Academy of Sciences USA** 106: 19747-19749  
[commentary]
41. Yang G., Holligan-Nagel D., Feschotte C., Hancock N.H. & Wessler S.R.<sup>‡</sup> (2009) Tuned for transposition: molecular determinants underlying the hyperactivity of a *Stowaway* MITE. **Science** 325: 1391-1394  
[accompanied by perspective article] [highlighted by *Cell*]
40. Feschotte C.<sup>‡</sup>, Keswani U.\*, Ranganathan N.\*, Guibotsy M.L. & Levine D. (2009) Exploring repetitive DNA landscapes using REPCLASS, a tool that automates the classification of transposable elements in genomic sequences. **Genome Biology and Evolution** 1: 205-220
39. Venner S.<sup>‡</sup>, Feschotte C., & Biemont C. (2009) Dynamics of transposable elements: towards a

- community ecology of the genome. *Trends in Genetics* 25: 317-323  
[review article]
38. Pace J.K., II, Sen S.K., Batzer M.A. & Feschotte C.<sup>‡</sup> (2009) Repair-mediated duplication by capture of proximal chromosomal DNA has shaped vertebrate genome evolution. *PLOS Genetics* 5(3): e1000425 (14 pages)
37. Gilbert C., Maxfield D.G., Goodman S.M. & Feschotte C.<sup>‡</sup> (2009) Parallel germline infiltration of a lentivirus in two Malagasy lemurs. *PLOS Genetics* 5(3): e1000425 (12 pages)
36. Gilbert C., Pace J.K., II, & Feschotte C.<sup>‡</sup> (2009) Horizontal *SPIN*ning of transposons. *Communicative and Integrative Biology* 2: 117-119  
[commentary]
35. Pace J.K., II, Gilbert C., Clark M.S. & Feschotte C.<sup>‡</sup> (2008) Repeated horizontal transfer of a DNA transposon in mammals and other tetrapods. *Proceedings of the National Academy of Sciences USA* 105:17023-17028  
[accompanied by commentary] [evaluated by Faculty of 1000]
34. Feschotte C.<sup>‡</sup> (2008) Transposable elements and the evolution of regulatory networks. *Nature Reviews Genetics* 9:397-405  
[review article]
33. Ray D.A.\*<sup>‡</sup>, Feschotte C.\*<sup>‡</sup>, Smith J.D., Pagan H.J.T., Pritham E.J., Arensburger P., Atkinson P.W. & Craig N.L. (2008) Multiple waves of recent DNA transposon activity in the bat *Myotis lucifugus*. *Genome Research* 18:717-728  
[cover article]
32. Casola C.\*<sup>‡</sup>, Hucks D.V.\*<sup>‡</sup> & Feschotte C.<sup>‡</sup> (2008) Convergent domestication of *pogo*-like transposases into centromere-binding proteins in mammals and fission yeast. *Molecular Biology and Evolution* 25:29-41
31. Feschotte C.<sup>‡</sup> (2008) Evolutionary history and impact of human DNA transposons. In: *Handbook of Human Molecular Evolution* (D. Cooper, H. Kehrer-Swatski eds.), and also published online in *Encyclopedia of Life Sciences*, John Wiley and Sons, Ltd.  
[book chapter]
30. Lin R., Ding L., Casola C., Ripoll D.R., Feschotte C. & Wang H.<sup>‡</sup> (2007) Transposase-Derived Transcription Factors Regulate Light Signaling in Arabidopsis. *Science* 318: 1302-1305  
[evaluated by F1000] [highlighted by *Science* STKE, *Nature*, *Nature Rev Genet* and NSF]
29. Feschotte C.<sup>‡</sup> & Pritham E.J. (2007) DNA transposons and the evolution of eukaryotic genomes. *Annual Review of Genetics* 41:331-368  
[review article]
28. Singh A., Feschotte C. & Stojanovic N.<sup>‡</sup> (2007) Micro-repetitive structure of genomic sequences and the identification of ancient repeat elements. *Proceedings IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2007)* pp. 165-171

27. Casola C., Lawing A.M. Betran E. & Feschotte C.<sup>‡</sup> (2007) PIF-like transposons are common in *Drosophila* and have been repeatedly domesticated to generate new host genes. ***Molecular Biology and Evolution*** 24: 1872-1888
26. Singh A., Feschotte C. & Stojanovic N.<sup>‡</sup> (2007) A study of the repetitive structure and distribution of short motifs in human genomic sequences. ***International Journal of Bioinformatics Research & Applications*** 3: 523-535
25. Pace J.K, II & Feschotte C.<sup>‡</sup> (2007) The evolutionary history of human DNA transposons: evidence for intense activity in the primate lineage. ***Genome Research*** 17: 422-432  
[evaluated by Faculty of 1000]
24. Pritham E.J.\*<sup>‡</sup> & Feschotte C.\*<sup>‡</sup> (2007) Massive amplification of rolling-circle transposons in the lineage of the bat *Myotis lucifugus*. ***Proceedings of the National Academy of Sciences USA*** 104: 1895-1900
23. Feschotte C.<sup>‡</sup> & Pritham E.J. (2007) Computational analysis and paleogenomics of interspersed repeats in eukaryotic genomes. In: ***Computational Genomics: Current Methods*** (N. Stojanovic, ed.) Pp. 31-53, Horizon Bioscience  
[book chapter]
22. Bai Y, Casola C, Feschotte C & Betran E.<sup>‡</sup> (2007) Constant rate of origination and convergent acquisition of functional retrogenes in *Drosophila*. ***Genome Biology*** 8:R11 (9 pages)
21. Pritham E.J.<sup>‡</sup>, Putliwala T. & Feschotte C. (2007) *Mavericks*, a novel class of giant transposable elements widespread in eukaryotes and related to DNA viruses. ***Gene*** 390: 3-17  
[evaluated by Faculty of 1000]
20. Feschotte C.<sup>‡</sup> (2006) The *piggyBac* transposon holds promises for human gene therapy. ***Proceedings of the National Academy of Sciences USA*** 103: 14981-14982  
[commentary]
19. Feschotte C.<sup>‡</sup> & Pritham E.J. (2006) Mobile DNA: genomes under the influence. ***Genome Biology*** 7: 320-324  
[meeting report]
18. Cordaux R., Udit S., Batzer M.A. & Feschotte C.<sup>‡</sup>. (2006) Birth of a chimeric primate gene by capture of the transposase gene from a mobile element. ***Proceedings of the National Academy of Sciences USA*** 103: 8101-8106  
[cover article] [accompanied by commentary] [evaluated by Faculty of 1000]
17. Ranganathan N., Feschotte C. & Levine D.<sup>‡</sup>. Cluster- and Grid-based classification of transposable elements in eukaryotic genomes. (2006) ***Proceedings of the sixth IEEE International Symposium on Cluster Computing and the Grid (CCGRID2006)***
16. Feschotte C.<sup>‡</sup> & Pritham E.J. (2005) Non-mammalian c-integrases are encoded by giant transposable elements. ***Trends in Genetics*** 21: 551-552
15. Pritham E.J.<sup>‡</sup>, Feschotte C. & Wessler S.R. (2005) Unexpected diversity of DNA transposons in the compact genomes of *Entamoeba* protozoans. ***Molecular Biology and Evolution*** 9: 1751-1763

[evaluated by Faculty of 1000]

14. Feschotte C.\*, Osterlund M.\*, Peeler M. & Wessler S.R.<sup>†</sup> (2005) DNA binding specificity of rice *mariner*-like transposases and interactions with *Stowaway* MITEs. ***Nucleic Acids Research*** 33: 2163-2165
13. Feschotte C.<sup>‡</sup> (2004) *Merlin*: a new superfamily of DNA transposons present in diverse animal genomes and related to the bacterial IS1016 insertion sequences. ***Molecular Biology and Evolution*** 21: 1769-1780  
[evaluated by Faculty of 1000]
12. Jiang N., Feschotte C., Zhang X. & Wessler S.R.<sup>†</sup> (2004) Understanding the origin and amplification of MITEs using rice. ***Current Opinion in Plant Biology*** 7: 115-119  
[review article]
11. Zhang X., Jiang N., Feschotte C. & Wessler S.R.<sup>†</sup> (2004) *PIF*- and *Pong*-like transposable elements: distribution, evolution and relationship with *Tourist*-like MITEs. ***Genetics*** 166: 971-986
10. Pritham E.J., Zhang Y.H., Feschotte C. and Kesseli R.V.<sup>‡</sup> (2003) An *Ac*-like transposable element family with transcriptionally active Y-linked copies in the white campion, *Silene latifolia*. ***Genetics*** 165: 799-807
9. Feschotte C.<sup>‡</sup>, Swamy L. and Wessler S.R. (2003) Genome-wide analysis of *mariner*-like transposable elements in rice reveals complex relationships with *Stowaway* MITEs. ***Genetics*** 163: 747-758
8. Feschotte C., Jiang N. & Wessler S.R.<sup>†</sup> (2002) Plant transposable elements: where genetics meets genomics. ***Nature Reviews Genetics*** 3: 329-341  
[review article]
7. Feschotte C.<sup>‡</sup>, Zhang X.<sup>‡</sup> & Wessler S.R.<sup>†</sup> (2002) Miniature inverted-repeat transposable elements (MITEs) and their relationship with established DNA transposons. in ***Mobile DNA II*** (Craig N., Craigie R., Gellert M. & Lambowitz A., eds.) American Society for Microbiology Press, Washington D.C.  
[book chapter]
6. Feschotte C.<sup>‡</sup> & Wessler S.R. (2002) *Mariner*-like transposases are widespread and diverse in flowering plants. ***Proceedings of the National Academy of Sciences USA*** 99: 280-285
5. Zhang X., Feschotte C., Zhang Q., Jiang N., Eggleston W.B. & Wessler S.R.<sup>†</sup> (2001) *P instability factor*: An active maize transposon system associated with the amplification of *Tourist*-like MITEs and a new superfamily of transposases. ***Proceedings of the National Academy of Sciences USA*** 98: 12572-12577  
[featured article][accompanied by commentary][evaluated by Faculty of 1000]
4. Feschotte C. & Wessler S.R.<sup>†</sup> (2001) Treasures in the attic: Rolling circle transposons discovered in eukaryotic genomes. ***Proceedings of the National Academy of Sciences USA*** 98: 8923-8924
3. Feschotte C., Fourrier N., Desmons I., Mouchès C.<sup>‡</sup> (2001) Birth of a retroposon: The *Twin* SINE family from the vector mosquito *Culex pipiens* may have originated from a dimeric tRNA precursor. ***Molecular Biology and Evolution*** 18: 74-84



2. Feschotte C. & Mouchès C<sup>‡</sup> (2000) Recent amplification of miniature inverted-repeat transposable elements in the genome of the vector mosquito *Culex pipiens*: characterization of the *Mimo* family. *Gene* 250:109-116
1. Feschotte C. & Mouchès C<sup>‡</sup> (2000) Evidence that a family of miniature inverted-repeat transposable elements (MITEs) from the *Arabidopsis thaliana* genome has arisen from a *pogo*-like DNA transposon. *Molecular Biology and Evolution* 17:730-737

## RESEARCH FUNDING

---

### Current:

#### **National Institutes of Health / NIGMS**

R01 GM077582 (PI Feschotte) 8/1/2012-7/31/2016  
*DNA transposons: evolutionary history and genomic impact in vertebrates*

Goal: to gain a better understanding of the forces driving the evolution and transmission of DNA transposons in vertebrates and to evaluate their contribution to genomic variation and novelty.

### Completed:

#### **National Institutes of Health / NIGMS**

R01 GM077582 (PI Feschotte) 2/1/2007-7/31/2012  
*Human DNA transposons: evolutionary history and genomic impact*  
Amount funded: \$ 811,940

Goal: assess the contribution of DNA transposons in shaping the genomes of humans and other mammals using a combination of *in silico* and functional approaches.

#### **National Institutes of Health / NIAID**

R01 AI068908 (PI Kissinger, University of Georgia) 2/1/2007-1/31/2011  
*Genome evolution, innovation and adaptation in the Apicomplexa*  
Amount funded: \$ 1,250,000  
Subcontract to UTA: \$ 204,799 (PI Pritham, co-PI Feschotte)

Goal (subcontract): to identify and analyze the repetitive DNA complement of four Apicomplexan genomes, including malaria, toxoplasmosis and East Coast fever parasites.

## SEMINARS AND TALKS

---

### Invited

**Workshop on Endogenous Retroviruses**, Graves Mountain Lodge, Syria, VA, Aug 7-9, 2014.

**36th Annual Meeting of the Molecular Biology Society of Japan**, Kobe, Japan, Dec 3-6, 2013.  
*Transposable elements as catalysts of regulatory innovation during mammalian evolution*

**FEMS Microbiology Congress**, Leipzig, Germany, July 21-25, 2013. *In n' out: the dual life of endogenous retroviruses*

**Annual Meeting of the Society for Molecular Biology and Evolution (SMBE 2013)**, Chicago, IL, July 7-11. *ibid*

**5<sup>th</sup> FASEB Summer Research Conference on Mobile DNA in Mammalian Genomes**, Big Sky, MT, June 9-14, 2013. *Transposable elements as drivers of lncRNA evolution*

**Iowa State University**, Department of Genetics, Development, and Cell Biology. Ames, IA, Oct 12, 2012. *Genomes without borders: Mobile DNA, horizontal transfer, and the misfit origins of genetic novelty*

**Bioscience Symposium, University of Utah**, Sep 29, 2012. *Mobile genetic elements: catalysts of mammalian evolution*

**University of Idaho**, Initiative for Bioinformatics and Evolutionary Studies Seminar Series, Moscow, ID. Sep 13, 2012. *ibid*

**Max Planck Institute for Developmental Biology, Tübingen, Germany**, Apr 18, 2012. *ibid*

**University of Georgia**, Department of Genetics, Mar 21, 2012. *Genomes without borders: Mobile DNA, horizontal transfer, and the misfit origins of genetic novelty*

**3<sup>rd</sup> International Conference/Workshop on Genomic Impact of Eukaryotic Transposable Elements**, Asilomar, CA, Feb 24-28, 2012. *Genomes without borders - the misfit origins of genetic novelty*

**3<sup>rd</sup> Biological Evolution Workshop, Porto Alegre, Brazil**, Nov 7-9, 2011. *ibid*

**Purdue University**, Department of Forestry and Natural Resources, Sep 27, 2011. *ibid*

**North East Mobile Genetic Element Meeting**, MBL Woods Hole, MA, Sep 1-3, 2011. *ibid*

**4<sup>th</sup> FASEB Summer Research Conference on Mobile DNA in Mammalian Genomes**, Snowmass, CO, Aug 7-12, 2011. *ibid*

**Texas Tech University**, Lubbock, TX, Department of Biology, June 1st, 2011. *ibid*

**Texas Genetics Society 38<sup>th</sup> Annual Meeting**, Dallas, Apr 1, 2011. *ibid*

**University of Utah School of Medicine**, Department of Human Genetics, Feb 28, 2011. *Genomes without borders: Mobile DNA, horizontal transfer, and the uncanny origins of genetic novelty*

**University of Pennsylvania School of Medicine**, Department of Microbiology, Feb 25, 2011. *Genomes without borders: mobile DNA, paleovirology, and the origins of genetic novelty*

**University of Rochester**, Department of Biology, Feb 1, 2011. *Genomes without borders: Mobile DNA, horizontal transfer, and the origins of genetic novelty*

**University of Chicago**, Department of Ecology and Evolution, Nov 22, 2010. *Genomes without borders: Mobile DNA, horizontal transfer, and the origins of genetic novelty*

**University of Houston**, TX, Department of Biology, Nov 10, 2010. *Promiscuous DNA: horizontal transfer of DNA transposons and why it matters for evolution*

**Texas A&M University**, College Station, TX, Department of Veterinary Integrative Biosciences, Oct 28, 2010. *ibid*

**University of Texas, San Antonio**, Department of Cell and Molecular Biology, Sep 20, 2010. *ibid*

**Carnegie Institution**, Baltimore, MD, Department of Embryology, May 2, 2010. *DNA transposons:*

*germline invaders with a lasting impact on genome evolution*

**2<sup>nd</sup> ASM Conference on Mobile DNA**, Montréal, Canada, April 24-28, 2010. *Transposable elements as a source of primate-specific conserved noncoding sequences.*

**79<sup>th</sup> Annual Meeting of the American Association of Physical Anthropologists**, Albuquerque, NM, April 14-17, 2010. Symposium on Pathogens and the Evolution of Human and Non-human Primates. *Tracking ancient lentiviral infiltrations in the genome of Malagasy lemurs*

**Washington University in St Louis**, MO, Biology Department, Mar 29, 2010. *ibid*

**Ohio State University**, Mathematical Biosciences Institute, Columbus, OH, Feb 22-26, 2010, Workshop 'Inference in Stochastic Models of Sequence Evolution'. *ibid*

**Penn State University**, State College, PA, Department of Biology, Feb 2, 2010. *ibid*

**Yale University**, New Haven, CT, Department of Ecology and Evolutionary Biology, Jan 13, 2010. *ibid*

**55<sup>th</sup> Brazilian Congress of Genetics**, Aguas de Lindoia, Brazil, Aug 30-Sep 2, 2009. *DNA transposons: germline invaders with a lasting impact on genome evolution*

**University of Texas System Chancellor's Council Annual Meeting, 'Treasures of the UT System'** Austin, TX, May 1<sup>st</sup> 2009. *What if you had genes that didn't come from your family?*

**3<sup>rd</sup> FASEB Summer Research Conference on Mobile Elements in Mammalian Genomes**, Snowmass, CO, July 5-9, 2009. *Rampant horizontal transfer of DNA transposons in mammals*

**2<sup>nd</sup> International Conference/Workshop on Genomic Impact of Eukaryotic Transposable Elements**. Asilomar, CA, Feb 6-10, 2009. *Mammalian transposable elements and the evolution of lineage-specific functions*

**NIH - National Institute of Child Health and Development**, Laboratory of Gene Regulation and Development, Bethesda, MD, Jan 23, 2009. *Transposon-derived transcription factors and evolutionary tinkering of regulatory networks*

**Indiana University**, Bloomington, Department of Biology, Nov 7, 2008. *ibid*

**University of Texas, Arlington**, Department of Biology, Sep 25, 2008. *ibid*

**Baylor University**, Waco, TX, Department of Biology, Sep 17, 2008. *Evolutionary history and genomic impact of mammalian DNA transposons*

**Annual Meeting of the Society for Molecular Biology and Evolution (SMBE 2008)** Barcelona, Spain, June 5-8, 2008. *Transposon-derived transcription factors and de novo assembly of regulatory networks*

**University of North Texas Health Sciences Center**, Fort Worth, Department of Molecular Biology and Immunology, Feb 25, 2008. *Transposon-mediated assembly of gene regulatory networks*

**Plant and Animal Genome XVI Conference (PAG 2008)** San Diego, CA, Jan 12-16, 2008. *Building Genetic Networks From Transposable Elements In Plant And Animal Genomes*

**Texas Women University**, Denton, Department of Biology, Sep 21, 2007. *How the genome put selfish DNA to work*

**2<sup>nd</sup> FASEB Summer Research Conference on Mobile Elements in Mammalian Genomes**, Tucson, AZ, June 2-7, 2007. *Impact of DNA transposons to mammalian genetic innovation*

**Universite Claude Bernard/CNRS Laboratoire Biometrie et Biologie Evolutive, France**. Dec 22, 2006. *ibid*

**Michigan State University. Symposium on Transposable Elements and Genome Evolution.** Dec 8, 2006. *Life after death: reincarnation of DNA transposons into genetic networks. A case study in the human genome*

**UT Metroplex Days, UT Arlington,** Dec 4, 2006. *Evolutionary and comparative genomics at UT Arlington*

**1st International Conference/Workshop on Genomic Impact of Eukaryotic Transposable Elements.** Asilomar, CA, Mar 31-Apr 4, 2006. *Life after death: reincarnation of DNA transposons into genetic networks. A case study in the human genome*

**EMBO Workshop “Molecular mechanisms of transposition, its regulation and evolution”,** Roscoff, France, June 26-30, 2004. *Rice DNA transposons: mechanism of amplification and diversification*

**University of Texas, Arlington, TX,** Department of Biology, Dec 2003. *ibid*

**University of Colorado,** Boulder, Department of Molecular, Cellular and Developmental Biology, Nov 4, 2003. *ibid*

**University de Montréal,** Canada, Department of Biochemistry, Oct 23, 2003. *ibid*

**Duquesne University,** Pittsburgh, Department of Biological Sciences, Oct 3, 2003. *ibid*

**University of Georgia,** Athens, Department of Genetics, Sep 27, 2003. *Unraveling the origin and amplification of miniature inverted repeat transposable elements in the genomic era*

**CNRS, Gif-sur-Yvette,** France, May 30, 2001. *Genomic paleontology: origin and amplification mechanism of miniature inverted-repeat transposable elements*

**University of Chicago,** Department of Ecology and Evolution, Jan 15, 2000. *A model for the origin of miniature inverted-repeat transposable elements in plants, insects and humans*

**XX<sup>th</sup> International Congress of Entomology,** Foz do Iguassu, Brazil, Aug 20-24, 2000. *Transposable elements and genome evolution: what can we learn from Culex pipiens mosquitoes?*

### Contributed Talks

**International Congress on Transposable Elements (ICTE 2008),** Saint Malo, France, Apr 20-23, 2008. *Transposon-derived genes and the origin of regulatory networks*

**ASM Conference on Mobile DNA,** Banff, Canada, Feb 24-Mar 1, 2006. *Life after death: reincarnation of DNA transposons into genetic networks. A case study in the human genome*

**12<sup>th</sup> Annual Meeting on Transposable Elements,** Tours, France, July 3-5, 2004. *Rice DNA transposons: mechanism of amplification and diversification*

**Joint Meeting Society for Molecular Biology and Evolution/American Genetics Association ‘Genomes & Evolution’,** Penn State University, USA, June 17-20, 2004. *Cross-mobilization as a mechanism contributing to the amplification of MITEs*

**Symposium ‘Transposition, Recombination and Application to Plant Genomics’,** Iowa State University, USA, June 5-8, 2003. *Functional genomics of MITE-transposase interactions in rice*

**44<sup>th</sup> Annual Maize Genetics Conference,** Orlando, USA, Mar 14-17, 2002. *Two new families of transposases are responsible for the origin and amplification of MITEs*

**Annual Meeting of the Society for Molecular Biology and Evolution**, Athens, USA, July 7-10, 2001.  
*Masters, slaves and hijackers: clarifying the relationship between MITEs and DNA transposons*

**9<sup>th</sup> Annual Meeting on Transposable Elements**, Strasbourg, France, July 3-5, 2000. *Genealogy of a MITE family from the genome of Arabidopsis thaliana*

---

## TEACHING & MENTORING

---

**Undergraduate courses taught:** Genetics (fall 05, 07, 08, 09, 10; spring 06, 07, 11, 12)

**Graduate courses taught:** Genome Structure and Dynamics (fall 06, spring 08, spring 10, fall 11),  
Genome Biology Seminars (spring 07), Mobile DNA (spring 07-09)

**Graduate students advised:** N. Ranganathan (MSc., 04-05, co-advisor: D. Levine, CSE), D. Hucks (MSc. 05-08), J. Pace (PhD, '05-09), U. Keswani (MSc., 07-08, co-advisor: D. Levine, CSE), D. Szalay (MSc., 08-10, co-advisor: E. Betran), M. Varma (MSc., 08-11), Q. Wang (PhD, 07-10 left program), X. Zhuo (PhD, Fall 2010-present), J. McCormick (Jun 2013-present)

**Undergraduates supervised** in the lab: 30 (since Sept 2004)

**Postdocs advised:** C. Casola (with E. Betran, 06-07), C. Gilbert (Mar 08-Feb 11), S. Schaack (with E. Pritham, Jan 09-Dec 10), S. Cheng (with E. Pritham, Feb 09-Dec 10), A. Kapusta (Jan 11-present), R. Malfavon-Borja (Mar 13-present), Edward Chuong (with N. Elde, Aug 13-present)

### Awards received by students under my mentorship:

- 2010 **V. Wrenn:** NSF Louis Stokes Alliance for Minority Participation scholarship
- 2010 **S. Hernandez:** Outstanding Undergraduate Research Award
- 2009 **S. Hernandez:** McNair Scholarship
- 2008 **D. Hucks:** Outstanding Graduate Research Award, UTA College Of Science
- 2008 **J. Pace:** Provost's Award for best presentation at the Annual Celebration of Excellence by Students (ACES)
- 2007 **J. Pace** Outstanding Graduate Research Award, UTA College of Science
- 2007 **A. Denton:** NSF Louis Stokes Alliance for Minority Participation scholarship
- 2006 **S. Udit:** Outstanding Undergraduate Research Award, UTA College of Science;
- 2006 **S. Udit:** Provost's Award for best presentation, Annual Celebration of Excellence by Students (ACES)
- 2006 **T. Putliwala:** NSF Louis Stokes Alliance for Minority Participation scholarship