

Full Name: **Sara L. Sawyer, Ph.D.**
 Lab website: sawyerlab.org

Biography:

Dr. Sara Sawyer is a Professor at the University of Colorado Boulder. She has received national and international prizes in virology. She was awarded the Presidential Early Career Award for Scientists and Engineers by President Barack Obama at the White House. In 2022, she received the NIH's Director's Pioneer award. She serves as a Senior Editor at the journal eLIFE, and as a government consultant on the topic of pandemic preparedness. In 2020, she co-founded Darwin Biosciences, an infectious disease diagnostics company located in Boulder, Colorado. Dr. Sawyer serves on the NIH's Office of AIDS Research Advisory Council. Her research focuses on animal viruses that infect humans.

Education and Training

09/1992 - 05/1996	B.S. Chemical Engineering University of Kansas, Lawrence, KS
09/1996 - 05/2003	Ph.D. Genetics and Development Cornell University, Ithaca, NY
09/2003 - 12/2007	Postdoctoral Research Fellow Fred Hutchinson Cancer Research Center Seattle, WA, laboratory of Dr. Harmit Malik

Positions Held

2021 – pres.	Planning Committee, Workshops on Countering Zoonotic Spillover of High Consequence Pathogens National Academies of Sciences, Engineering, and Medicine
2020 – pres.	Board of Directors, Darwin Biosciences Infectious disease diagnostics company, Boulder, CO
2020 – pres.	Senior Editor, eLIFE
2015 – pres.	Professor, University of Colorado Boulder BioFrontiers Institute and the Dept of Molecular Cellular and Developmental Biology
2014 – pres.	Consultant to U.S. government on pandemic preparedness
2008-2014	Assistant and Associate Professor, University of Texas at Austin Dept of Molecular Biosciences
2003-2007	Postdoctoral Research Fellow Fred Hutchinson Cancer Research Center, Seattle, WA. Advisors: Drs. Harmit Malik, Michael Emerman. Subject: Molecular evolution of HIV restriction factors.
1996-2003	Doctoral Student, Cornell University, Ithaca, New York. Advisor: Dr. Bik Tye. Subject: Yeast chromosome replication (genetics and biochemistry)
1994-1996	Offshore Oil Drilling Engineer and Intern Amoco Corporation (New Orleans, Denver, Houston)

Honors and Awards

Research Awards

2022	Pioneer Award, National Institutes of Health
2019	Winner, Lab Venture Challenge (venture capital competition for startups)
2019	Audience Choice Award, Lab Venture Challenge (venture capital competition)
2018	Richard M. Elliott Award in Virology (University of Glasgow, Scotland)
2018	Avant-Garde award from NIH NIDA
2014	Omenn Prize for the best evolutionary medicine paper of 2013 (first author Demogines)
2013	Burroughs Wellcome Fund Investigator in the Pathogenesis of Infectious Disease
2011	Presidential Early Career Award for Scientists and Engineers (PECASE)
2011	Kavli Fellow of the National Academy of Sciences
2009	Alfred P. Sloan Fellow in Computational and Evolutionary Molecular Biology
2008-2010	Competitive renewal - NIH Health Disparities Loan Repayment Program
2007	Andy Kaplan Prize in Retrovirology (to one postdoctoral fellow in retrovirology)
2006-2011	Burroughs Wellcome Career Award in the Biomedical Sciences
2006-2008	NIH Health Disparities Loan Repayment Program
2005-2007	NIH National Research Service Award (NRSA) post-doctoral fellowship
2004-2005	NIH Postdoctoral Training Grant
2000-2001	Graduate Research Award - Cornell Dept. of Molecular Biology and Genetics
1997-2000	NIH Predoctoral Training Grant

Honors (Teaching)

2013	UT Austin College of Natural Sciences Teaching Excellence Award
2012	Named "Professor of Excellence" at UT Austin
1999	Second Place, Sigma Xi Science Writing Competition
1998	Third Place, Sigma Xi Science Writing Competition
1997	Outstanding Teaching Assistant - Cornell University

Support

National Institutes of Health (NIAID, NIDA)

Defense Threat Reduction Agency

Burroughs Wellcome Fund

Colorado Office of Economic Development

Press

Live at ASV in Madison

[This Week In Virology Podcast](#) (July 29, 2012)

How Ebola Adapted to Us

[The Atlantic](#) (Nov 03, 2016)

This Week In Evolution Podcast

"Looking at straw colored fruit bats through a straw"

[This Week In Evolution Podcast](#) (Feb 20, 2016)

There are more viruses than stars in the universe. Why do only some infect us?

[National Geographic](#) (April 15, 2020)

CRISPR And Spit Might Be Keys To Faster, Cheaper, Easier Tests For The Coronavirus

[NPR](#) (April 17, 2020)

Is COVID-19 here to stay? A team of biologists explains what it means for a virus to become endemic

Arturo Barbachano-Guerrero, Cody Warren, Sara Sawyer

[The Conversation](#) (Nov 05, 2021)

Guest Opinion: Tom Cech: How CU tackled COVID-19 testing

[The Boulder Daily Camera](#) (June 2, 2021)

About half of COVID-infected people may not be contagious, CU Boulder study finds

[The Denver Post](#) (March 15, 2021)

TWiV 757: Supershedders and super vaccines

[This Week In Virology Podcast](#) (May 20, 2021)

At-home COVID-19 testing 101: A Q&A with virologist Sara Sawyer

[CU Boulder](#) (Feb 02, 2022)

When will the COVID-19 pandemic end? 4 essential reads on past pandemics and what the future could bring

Arturo Barbachano-Guerrero, Cody Warren, Sara Sawyer

[The Conversation](#) (Jan 26, 2022)

Alpha then delta and now omicron – 6 questions answered as COVID-19 cases once again surge across the globe

Arturo Barbachano-Guerrero, Cody Warren, Sara Sawyer

[The Conversation](#) (Jan 21, 2022)

When Will the COVID Pandemic End?

<https://www.voanews.com/a/when-will-the-pandemic-end-/6447548.html>

[Voice of America](#) (Feb 19, 2022)

Are COVID-19 Restrictions Stunting Children's Immune Systems?

<https://www.voanews.com/a/are-covid-19-restrictions-stunting-children-s-immune-systems-/6459684.html>

[Voice of America](#) (Feb 26, 2022)

Monkeypox may be here to stay

<https://www.politico.com/news/2022/08/14/monkeypox-here-to-stay-00051560>

[Politico](#) (Aug, 14, 2022)

On the lookout for viruses that could leap from animals into humans

<https://www.nature.com/articles/d41586-022-03357-5>

[Nature](#) (Oct 26, 2022)

Monkeypox Emergency: Urgent Questions and Perspectives

[https://www.cell.com/cell/fulltext/S0092-8674\(22\)00983-7#relatedArticles](https://www.cell.com/cell/fulltext/S0092-8674(22)00983-7#relatedArticles)

[Cell](#) (Aug 28, 2022)

Could an algorithm predict the next pandemic?

<https://www.nature.com/articles/d41586-022-03358-4>

[Nature](#) (Oct 26, 2022)

How Viruses Hop from Wild Animals to Humans

<https://www.scientificamerican.com/article/how-viruses-hop-from-wild-animals-to-humans/>

[Scientific American](#) (Nov 15, 2022)

Scientists as Storytellers

Featured on the [Herstory Podcast](#)

Interviewed by former Director of the CDC, Dr. Julie Gerberding.

<https://www.youtube.com/watch?v=moWxOQBCJ7I>

5. Publications

Primate hemorrhagic fever-causing arteriviruses are poised for spillover to humans

Cody J. Warren, Shuiqing Yu, Douglas K. Peters, Arturo Barbachano-Guerrero, Qing Yang, Bridget L. Burris, Gabriella Worwa, I-Chueh Huang, Gregory K. Wilkerson, Tony L. Goldberg, Jens H. Kuhn, Sara L. Sawyer

[Cell](#), <https://doi.org/10.1016/j.cell.2022.09.022> (2022)

On the lookout for viruses that could leap from animals into humans

Q&A with Sara L. Sawyer

[Nature](#), doi: <https://doi.org/10.1038/d41586-022-03357-5> (2022)

Monkeypox Emergency: Urgent Questions and Perspectives

Stefan Rothenburg, Zhilong Yang, Pip Beard, Sara L. Sawyer, Boghuma Titanji, Gregg Gonsalves, Jason Kindrachuk

[Cell](#), DOI: [10.1016/j.cell.2022.08.002](https://doi.org/10.1016/j.cell.2022.08.002) (2022)

Human ACE2 Polymorphisms from Different Human Populations Modulate SARS-CoV-2 Infection

Pan Hu, Vanessa L. Bauer, Sara L. Sawyer, Felipe Diaz-Griffero

[Viruses](#), <https://doi.org/10.1101/2021.08.12.455589> (2022)

Estimating the effect of non-pharmaceutical interventions on US SARS-CoV-2 infections in the first year of the pandemic

NA Duncan, GF L'Her, AG Osborne, Sara L Sawyer, MR Deinert

[Royal Society Open Science](#), <https://doi.org/10.1098/rsos.210875> (2022)

RNase L activation in the cytoplasm induces aberrant processing of mRNAs in the nucleus

James M Burke, Nina Ripin, Max B Ferretti, Laura A St Clair, Emma R Worden-Sapper, Sara L Sawyer, Rushika Perera, Kristen W Lynch, Roy Parker

[PLoS Pathogens](#), <https://doi.org/10.1371/journal.ppat.1010930> (2022)

Positive natural selection in primate genes of the type I interferon response

Elena Judd, AR Gilchrist, NR Meyerson, SL Sawyer

[BMC Ecology and Evolution](#) **21** (1), 1-11 (2021)

Nuku, a family of primate retrocopies derived from *KU70*

Paul A Rowley, Aisha Ellahi, Kyudong Han, Jagdish Suresh Patel, James T Van Leuven, Sara L Sawyer
G3 11 (8), jkab163 (2021)

RNase L limits host and viral protein synthesis via inhibition of mRNA export

James M Burke, Alison R Gilchrist, Sara L Sawyer, Roy Parker
Science Advances 7 (23), eabh2479 (2021)

Just 2% of SARS-CoV-2- positive individuals carry 90% of the virus circulating in communities

Qing Yang, Tassa K Saldi, Patrick K Gonzales, Erika Lasda, Carolyn J Decker, Kimngan L Tat, Morgan R Fink, Cole R Hager, Jack C Davis, Christopher D Ozeroff, Denise Muhrad, Stephen K Clark, Will T Fattor, Nicholas R Meyerson, Camille L Paige, Alison R Gilchrist, Arturo Barbachano-Guerrero, Emma R Worden-Sapper, Sharon S Wu, Gloria R Brisson, Matthew B McQueen, Robin D Dowell, Leslie Leinwand, Roy Parker, Sara L Sawyer

Proceedings of the National Academy of Sciences 118 (21) (2021)

- Featured in a commentary in PNAS, <https://doi.org/10.1073/pnas.2108044118>
- Featured on This Week In Virology Podcast, TWiV 757: Supershedders and super vaccines (May 20, 2021)

Saliva TwoStep for rapid detection of asymptomatic SARS-CoV-2 carriers

Qing Yang, Nicholas R Meyerson, Stephen K Clark, Camille L Paige, Will T Fattor, Alison R Gilchrist, Arturo Barbachano-Guerrero, Benjamin G Healy, Emma R Worden-Sapper, Sharon S Wu, Denise Muhrad, Carolyn J Decker, Tassa K Saldi, Erika Lasda, Patrick Gonzales, Morgan R Fink, Kimngan L Tat, Cole R Hager, Jack C Davis, Christopher D Ozeroff, Gloria R Brisson, Matthew B McQueen, Leslie A Leinwand, Roy Parker, Sara L Sawyer

Elife 10, e65113 (2021)

Selective Use of Primate CD4 Receptors by HIV-1

Warren Cody J, Meyerson Nicholas R, Dirasantha Obaiah, Feldman Emily R, Wilkerson Greg K, Sawyer Sara L

PLoS Biology. 17(6):e3000304 (2019)

A glycan shield on chimpanzee CD4 protects against infection by primate lentiviruses (HIV/SIV)

Warren CJ, Meyerson NR, Stabell AC, Fattor WT, Wilkerson GK, Sawyer SL.

Proc. Natl. Acad. Sci. USA. 116(23):11460-11469 (2019)

A metaanalysis of bat phylogenetics and positive selection based on genomes and transcriptomes from 18 species

Hawkins John A, Kaczmarek Maria E, Müller Marcel A, Drosten Christian, Press William H, Sawyer SL.

Proc. Natl. Acad. Sci. USA. 116(23):11351-11360 (2019)

How host genetics dictates successful viral zoonosis

Warren CJ and Sawyer SL.

PLoS Biology 17(4): e3000217 (2019)

TRIM5 restricts flavivirus replication by targeting the viral protease for proteasomal degradation

Chiramel AI, Meyerson NR, McNally KL, Broeckel RM, Montoya VR, Méndez-Solís O, Robertson SJ, Sturdevant GL, Lubick KJ, Nair V, Youseff BH, Ireland RM, Bosio KM, Kim K, Luban J, Hirsch VM, Bouamr F, Taylor RT, Sawyer SL, Best SM.

Cell Reports, 27(11):3269-3283.e6 (2019)

dsRNA-Seq: Identification of Viral Infection by Purifying and Sequencing dsRNA

Decker CJ, Steiner HR, Hoon-Hanks LL, Morrison JH, Haist KC, Stabell AC, Poeschla EM, Morrison TE, Stenglein MD, Sawyer SL, Parker R.

Viruses. 2019 Oct 14;11(10). pii: E943 (2019)

Species-specific vulnerability of RanBP2 shaped the evolution of SIV as it transmitted in African apes
Meyerson NR, Warren CJ, Vieira DASA, Diaz-Griffero F, Sawyer SL
PLoS Pathogens 14(3): e1006906. (2018)

Dengue viruses cleave STING in humans but not in non-human primates, their presumed natural reservoir
Stabell AC, Meyerson NR, Gullberg RC, Gilchrist AR, Webb KJ, Old WM, Perera R, Sawyer SL.
eLIFE, e31919 (2018)

Control of Genetic Parasites Mediated Through Nucleoporin Evolution
Rowley P, Patterson K, Sandmeyer S, Sawyer SL.
PLoS Genetics, e1007325. (2018)

Species-specific deamidation of cGAS facilitates herpes simplex virus lytic replication
Zhang J, Zhao J, Li J, Xu S, He S, Zeng Y, Xie L, Xie N, Liu T, Lee K, Seo GJ, Chen L, Stabell AC, Sawyer SL, Jung J, Huang C, Feng P.
Cell Host and Microbe. 24(2):234-248.e5 (2018)

TRIM25 is a restriction factor that specifically targets influenza virus ribonucleoproteins to block the onset of RNA chain elongation
Meyerson NR, Zhou L, Guo YR, Zhou C, Tao YJ, Krug RM, Sawyer SL.
Cell Host and Microbe, 22(5):627-638.e7. (2017)

Owl monkey CCR5 reveals synergism between CD4 and CCR5 in HIV-1 entry
Nahabedian J, Sharma A, Kaczmarek ME, Wilkerson GK, Sawyer SL, Overbaugh J.
Virology, 512:180-186. (2017)

Non-human Primate Schlafen11 Inhibits Production of Both Host and Viral Proteins
Stabell AC, Hawkins J, Li M, Gao X, David M, Press WH, Sawyer SL
PLoS Pathogens 12(12): e1006066. (2016)

XRN1 is a Species-Specific Virus Restriction Factor in Yeasts
Rowley PA, Ho B, Bushong S, Johnson A, Sawyer SL
PLoS Pathogens, 12(10):e1005890 (2016)

Modulation of LINE-1 Retrotransposition by a Human SAMHD1 Polymorphism
White TE, Brandariz-Nuñez A, Han K, Sawyer SL, Kim B, Diaz-Griffero F
Virology Reports 6: 53-60. (2016)

An Intrinsically Disordered Region of the DNA Repair Protein, Nbs1, Constitutes a Block to Herpes Simplex Virus 1 Spillover into New Primate Hosts
Lou DI, Kim ET, Meyerson NR, Pancholi NJ, Mohni KN, Weller SK, Weitzman MD, Sawyer SL
Cell Host and Microbe, 20(2):178-88 (2016)

At the mercy of viruses
Wilke CO and Sawyer SL.
eLIFE, 5, e16758. (2016)

A putative SUMO interacting motif in the B30.2/SPRY domain of rhesus macaque TRIM5α important for NF-κB/AP-1 signaling and HIV-1 restriction
Nepveu-Traversy M, Demogines A, Fricke T, Plourde MB, Riopel K, Veillette M, Diaz-Griffero F, Sawyer SL, Berthoux L

Heliyon, e00056 (2016)

Niemann-Pick C1 contributes to species-specific patterns of ebolavirus susceptibility in bats

Ng M,* Ndungo E,* Kaczmarek ME,* Herbert AS, Binger T, James R, Jangra RK, Hawkins JA, Gifford RJ, Biswas R, Demogines A, Kuehne AI, Yu M, Brummelkamp TR, Drosten C, Wang L, Kuhn JH, Müller MA, Dye JM*, Sawyer SL,* Chandran K.*
eLIFE, 4:e11785. (2015)

Understanding biases in ribosome profiling experiments reveals signatures of translation dynamics in yeast

Hussmann J, Patchett S, Johnson A, Sawyer SL, Press WH.
PLoS Genetics, 11(12):e1005732. (2015)

Computational and functional analysis of the virus-receptor interface reveals host range trade-offs in New World arenaviruses

Kerr SA, Jackson EL, Lungu OI, Meyer AG, Demogines A, Ellington AD, Georgiou G, Wilke CO*, Sawyer SL*
J of Virology, 89(22):11643-53. (2015)

Identification of owl monkey CD4 receptors broadly compatible with early-stage HIV-1 isolates

Meyerson NR, Sharma A, Wilkerson GK*, Overbaugh J*, Sawyer SL*
J of Virology, 89(16):8611-22. (2015)

The effect of species representation on the detection of positive selection in primate gene datasets

McBee RM, Rozmiarek SA, Meyerson NR, Rowley PA, Sawyer SL
Molecular Biology and Evolution, 32 (4), 1091-1096 (2015)

Rapid Evolution of BRCA1 and BRCA2 in Humans and Other Primates

Lou DI, RM McBee, UQ Le, AC Stone, GK Wilkerson, A Demogines, SL Sawyer
BMC Evolutionary Biology, 14:155. (2014)

Widespread sequence variations in VAMP1 across vertebrates suggest a potential selective pressure from botulinum neurotoxins

Peng L, A Borrell, A Demogines, H Liu, WH Tepp, S Zhang, EA Johnson, SL Sawyer, M Adler, M Dong
PLoS Pathogens, 10(7):e1004177. (2014)

Effects of human SAMHD1 Polymorphisms on HIV-1 Susceptibility

White TE, A Brandariz-Nunes, JC Valle-Casuso, C Knowlton, B Kim, SL Sawyer, F Diaz-Griffero
Virology, 460-461:34-44. (2014)

Positive Selection of Primate Genes that Promote HIV-1 Replication

Meyerson NR, Rowley PA, Swan CH, Le DT, Wilkerson GK, Sawyer SL
Virology, 454-455: 291-298. (2014)

Reply to Schmitt et al: Data Filtering Schemes for Avoiding Double-Counting in Circle Sequencing

Hussmann JA, Lou DI, Sawyer SL, Press WH
Proc Natl Acad Sci USA, 111(16):E1561. (2014)

Analyzing machupo virus-receptor binding by molecular dynamics simulations

Meyer AG, Sawyer SL, Ellington, AD, Wilke CO.
PeerJ, 2:e266. (2014)

Circle Sequencing: High Efficiency, Low Error-Rate Next-Generation DNA Sequencing

Lou DI*, Hussmann JA*, McBee R, Acevedo A, Andino R, Press WH, Sawyer SL.

Proc Natl Acad Sci USA, 110 (49): 19872-77. (2013)

- Highlighted article at Proc Natl Acad Sci USA, week of Nov 11, 2013

An evolutionary screen highlights canonical and noncanonical candidate antiviral genes within the primate TRIM gene family

Malfavon-Borja R, Sawyer SL, Wu, L, Emerman M, Malik HS.

Genome Biology and Evolution 5(11): 2141-54. (2013)

Dual Host-Virus Arms Races Shape an Essential Housekeeping Protein

Demogines A, Abraham J, Choe H, Farzan M, Sawyer SL

PLoS Biology 11(5): e1001571. (2013)

- Awarded **Omenn Prize** in 2013 for the best Evolution Paper of the Year related to Medicine and Health
- Featured in the "Editor's Choice" section of **Science** (June 14, 2013)
- Featured in the "Research Highlights" section of **Nature Reviews Microbiology** (July, 2013)
- Chosen as "Weekly Editor's Pick" at **PLoS Biology** (May 30, 2013)
- Highlighted with an accompanying commentary by John Coffin, **PLoS Biology** 11(5): e1001574.
- Episode 242 of **This Week in Virology (TWiV)** podcast devoted to the discussion of this paper.

Recent Host-Shifts in Ranaviruses: Signatures of Positive Selection in the Viral Genome

Abrams AJ, Cannatella DC, Hillis DM, Sawyer SL.

Journal of General Virology 94 (Pt 9): 2082-93. (2013)

D316 is critical for the enzymatic activity and HIV-1 restriction potential of human and rhesus APOBEC3B

McDougle RM, Hultquist JF, Stabell AC, Sawyer SL, Harris RS.

Virology 441: 31–39. (2013)

Generation of an HIV Resistant T-Cell Line by Targeted "Stacking" of Restriction Factors

Voit RA, McMahon M, Sawyer SL, Porteus MH.

Molecular Therapy, 21(4):786-95. (2013)

- Paper covered by CBS, ABC, FOX News, San Francisco Chronicle, Austin Statesman, Huffington Post

A cross-species view on viruses

Sawyer SL and Elde NC.

Current Opinion in Virology, 2(5): 561–8. (2012)

Evidence for ACE2-Utilizing Coronaviruses (CoVs) Related to Severe Acute Respiratory Syndrome CoV in Bats

Demogines A, Farzan M, Sawyer SL.

Journal of Virology, 86(11):6350-3. (2012)

- Chosen as a "**Spotlight**" article in this issue of Journal of Virology

Evolutionary reconstructions of the transferrin receptor of Caniforms supports canine parvovirus being a re-emerged and not a novel pathogen in dogs

Kaelber JT, Demogines A, Harbison CE, Allison AB, Goodman LB, Ortega AN, Sawyer SL, Parrish CR.

PLoS Pathogens, 8(5):e1002666. (2012)

HIV-1 Capsid Targeting Domain of Cleavage and Polyadenylation Specificity Factor 6

Lee K, Mulky A, Yuen W, Martin TD, Meyerson NR, Choi L, Yu H, Sawyer SL, KewalRamani VL.

Journal of Virology, 86(7):3851-60. (2012)

Species-specific features of DARC, the primate receptor for *Plasmodium vivax* and *Plasmodium knowlesi*

Demogines A, Truong KA, Sawyer SL.

Molecular Biology and Evolution, 29(2): 445-449. (2012)

Identification of a genomic reservoir for new *TRIM* genes in primate genomes.

Han K, Lou DH, Sawyer SL.

PLoS Genetics, 7(12): e1002388. (2011)

Two-stepping through time: mammals and viruses

Meyerson NR, Sawyer SL.

Trends in Microbiology, 19 (6): 286-94. (2011)

Ancient and recent adaptive evolution of primate non-homologous end joining genes.

Demogines A, East AM, Lee J-H, Grossman SR, Sabeti PC, Paull TT, Sawyer SL.

PLoS Genetics, 6(10): e1001169. (2010)

An expanded clade of rodent *TRIM5* genes

Tareen SU, Sawyer SL, Malik HS, Emerman M.

Virology, 385(2): 473-483. (2009)

Molecular evolution of the antiviral *TRIM5* gene

Johnson WE, Sawyer SL

Immunogenetics, 61(3):163-76. (2009)

Discordant evolution of the adjacent antiretroviral genes *TRIM22* and *TRIM5* in mammals

Sawyer SL, Emerman M, Malik HS.

PLoS Pathogens, 3(12): e197. (2007)

- Commentary published by David Liberles (2008) ***Heredity***.

Positive selection of yeast nonhomologous end-joining genes and a retrotransposon conflict hypothesis

Sawyer SL and Malik HS.

Proc Natl Acad Sci, 103(47): 17614-9. (2006)

High frequency persistence of an impaired allele of the retroviral defense gene *TRIM5 α* in humans

Sawyer SL, Wu LI, Akey JM, Emerman M, Malik HS.

Current Biology, 16(1): 95-100. (2006)

- With commentary by Ziheng Yang (2005) ***Proc Natl Acad Sci***, 102(9): 3179-80.
- This work is discussed in the 2010 Evolution textbook "The Tangled Bank," written by Carl Zimmer.
- This work is discussed in the 2012 textbook "Evolutionary Analysis" by Freeman/Herron (Pearson)

Positive selection of primate *TRIM5a* identifies a critical species-specific retroviral restriction domain

Sawyer SL, Wu LI, Emerman M, Malik HS.

Proc Natl Acad Sci, 102(8): 2832-7. (2005)

Ancient adaptive evolution of the primate antiviral DNA editing enzyme, APOBEC3G.

Sawyer SL, Emerman M, Malik HS.

PLoS Biology, 2(9): e275. (2004)

- With commentary by Eddie Holmes (2004) ***PLoS Biology***, 2(9): e307.

Mcm10 and Cdc45 cooperate in origin activation in *Saccharomyces cerevisiae*

Sawyer SL, Cheng IH, Chai W, Tye BK.

Journal of Molecular Biology, 340: 195-202. (2004)

The hexameric eukaryotic MCM helicase: building symmetry from nonidentical parts

Tye BK and Sawyer S.

Journal of Biological Chemistry, 275(45): 34833-6. (2000)

Mcm10 and the MCM2-7 complex interact to initiate DNA synthesis and to release replication factors from origins

Homesley L, Lei M, Kawasaki Y, Sawyer S, Christensen T, Tye BK.

Genes & Development, 14(8): 913-26. (2000)