

CURRICULUM VITAE - ANDREW J. ROGER

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Canadian citizen

ACADEMIC POSITIONS

06/10 – present Canada Research Chair (Tier I) in Comparative Genomics and Evolutionary Bioinformatics (7-year award; renewed in 2017)

06/09 – present Professor, Department of Biochemistry and Molecular Biology, Dalhousie University

06/04 – 05/09 Associate Professor, Department of Biochemistry and Molecular Biology, Dalhousie University

12/05 – 08/06 Honorary Research Fellow (sabbatical), Bioinformatics Institute, The University of Auckland, Auckland, New Zealand

07/99 – 06/04 Assistant Professor, Department of Biochemistry and Molecular Biology, Dalhousie University

EDUCATION AND POSTDOCTORAL POSITIONS

1997 – 1999 N.S.E.R.C. Postdoctoral Fellow, The Josephine Bay Paul Center for Comparative Molecular Biology and Evolution, Marine Biological Laboratory, Woods Hole, MA (with M.L. Sogin)

1991 – 1997 Ph.D., Dept. of Biochemistry, Dalhousie University, Halifax, N.S. (with W.F. Doolittle). Thesis title: Studies on the phylogeny and gene structure of early-branching eukaryotes.

1987 – 1991 B.Sc. Honours Biochemistry (Class 1), Science scholar, University of British Columbia, Vancouver, B.C. Honours thesis project with T. Cavalier-Smith

DISTINCTIONS, SCHOLARSHIPS, FELLOWSHIPS, ACADEMIC HONOURS

2017 Recipient of the **Max Forman Senior Research Prize** from the Dalhousie Medical Research Foundation

2017 **Tier 1, Canada Research Chair** renewed.

- 2014 Elected as **Fellow of the American Academy of Microbiology**
- 2012 Elected as **Fellow of the Royal Society of Canada**
- 2010 Awarded **Tier 1, Canada Research Chair** in Comparative Genomics and Evolutionary Bioinformatics
- 2010 Recipient of the **2010 Seymour Hutner Award** from the International Society of Protistologists
- 2008 – 2017 **Director** of the Centre for Comparative Genomics and Evolutionary Bioinformatics (CGEB) at Dalhousie University (www.cgeb.dal.ca)
- 2007 – 2017 **Senior Fellow**, CIFAR - Program in Integrated Microbial Biodiversity (IMB)
- 2007 – 2009 **NSERC E.W.R. Steacie Memorial Fellowship** (one of six given annually)
- 2007 **Visiting Fellow**, Isaac Newton Institute for Mathematical Sciences, Cambridge University, Cambridge, U.K.
- 2005 Dalhousie Medical Research Foundation, **Award of Excellence for Basic Research**
- 2005 **Finalist**, Emerging Professional Category, Discovery Awards in Science & Technology (Discovery Centre, Halifax, Nova Scotia)
- 2005 – 2007 **Fellow**, CIFAR Program in Evolutionary Biology
- 2004 – 2009 **Peter Loughheed/CIHR New Investigator Salary award** (award for first place in the CIHR New Investigator competition)
- 2004 **Sloan Research Fellowship** (Alfred P. Sloan Foundation)
- 1999 – 2004 **Scotiabank Scholar**, Canadian Institute for Advanced Research (CIAR), Program in Evolutionary Biology (provides external salary)
- 1997 – 1999 Natural Sciences and Engineering Research Council of Canada (NSERC) **Postdoctoral Fellowship**
- 1999 Medical Research Council of Canada **Postdoctoral Fellowship (declined)**
- 1997 Patrick Prize in Biochemistry, Dalhousie University
- 1995 - 1996 Medical Research Council of Canada Graduate Studentship
- 1991 - 1995 NSERC 1967 Science and Engineering Graduate Scholarship
- 1991 - 1993 Izaak Walton Killam Memorial Scholarship
- 1990 - 1991 University of BC Scholarship (and in 1988 - 1989)
- 1989 - 1990 Charles and Jane Banks Scholarship
- 1989 - 1990 Olof Sjobom Seaholm Memorial Scholarship

RESEARCH SUPPORT CURRENTLY HELD

- 2023-2026 Moore Foundation Symbiosis Program, \$2,178,000 CAD over 3 years (Roger's portion: \$210,000 CAD). "Symbiosis methods development" (Lead PI J.M. Archibald, **Co-I** (1 of 5): **A. J. Roger**)
- 2020-2024 **Simons Foundation Life Sciences Grant**, \$364,031 USD (\$460,143 CAD) over 4 years (as part of the Moore–Simons Project on the Origin of the Eukaryotic Cell) – "*New phylogenomic models and methods to resolve the prokaryote to eukaryote transition*" (**Lead PI – A.J. Roger**)
- 2019 – 2026 **Canadian Institutes of Health Research, Foundation Grant**, \$1,374,947 CAD over 7 years – "*Genomic, proteomic and microbiomic approaches to understanding the biology and pathogenesis of anaerobic protozoa*" (**PI – A.J.**)

Roger)

- 2017 – 2024 **Canada Research Chair – Tier I (CIHR)** in Comparative Genomics and Evolutionary Bioinformatics, \$200,000/year (includes 7-yr. salary award, 20% of which is research allowance); 7-year renewal from 2010-2017
- 2022 – 2027 **Natural Sciences and Engineering Research Council of Canada (NSERC)** Discovery Grant, \$78,000/year for 5 years - *“Phylogenomic approaches to understanding the phylogeny and early evolution of eukaryotes”* (PI – A.J. Roger)

RESEARCH SUPPORT HELD IN THE PAST

- 2016 – 2021 **Natural Sciences and Engineering Research Council of Canada (NSERC)** Discovery Grant, \$52,000/year for 5 years - *“Phylogenomic approaches to inferring ancient relationships among eukaryotes”* (PI – A.J. Roger)
- 2015 – 2019 **Canadian Institutes of Health Research, Transitional Operating Grant**, \$144,993/year for 4 years – *“Anaerobic eukaryotic microbes and the human microbiome: a genomic and metagenomic study”* (PI – A.J. Roger, with co-applicant A.G.B. Simpson)
- 2018 **Dalhousie Medical Research Foundation, Capital Equipment Grant**, \$30,000 (co-applicant with PI – G. Dellaire, and 6 others)
- 2015 – 2017 **Nova Scotia Health Research Foundation, Scotia Support Grant**, \$24,750/year for 2 years – *“Genomic and metagenomic approaches to elucidating the roles of protozoan parasites in the human gut microbiome”* (PI – A.J. Roger)
- 2012 – 2017 **Canadian Institute for Advanced Research (CIFAR)**, \$24,000/year research support funds for 5 years (PI – A.J. Roger)
- 2010 – 2017 **Canada Research Chair – Tier I (CIHR)** in Comparative Genomics and Evolutionary Bioinformatics, \$200,000/year (includes 7-yr. salary award, 20% of which is research allowance)
- 2011 - 2016 **Natural Sciences and Engineering Research Council of Canada (NSERC)** Discovery Grant, \$54,000/year for 5 years (plus \$40,000/year for first 3 years (2011-14) as an NSERC Accelerator Supplement) - *“Phylogenomic approaches to inferring ancient relationships amongst eukaryotes”* (PI – A.J. Roger)
- 2014 - 2016 **Dalhousie University – Strategic Research Initiatives Fund**, \$100,000/year for 2 years – *“An integrated resource for metagenomics and microbiomics in Atlantic Canada”* (co-applicant with PI – W.F. Doolittle, and 9 others)
- 2014 - 2015 **Faculty of Medicine, Dalhousie University**, \$40,000 (bridge funding), PI – A.J. Roger

- 2013 - 2015 **CIHR Operating Grant - Priority Announcement: Regional Partnership Program Nova Scotia**, \$82,686/year for 2 years – “*Eukaryotic organelles, parasites and multicellularity: Comparative genomic and proteomic approaches*” (PI – A.J. Roger)
- 2007 – 2015 **Tula Foundation**, Centre for Comparative Genomics and Evolutionary Bioinformatics (CGEB) – Administration support, Seminar Series and Student Travel Grant, \$50,000/year for 8 years (PI – A.J. Roger, with 9 others)
- 2008 – 2013 **Canadian Institutes of Health Research, Operating Grant** (renewal of MOP - 62809), \$719,381 over 5 years – “*Major transitions in eukaryotic cell evolution*” (PI – A.J. Roger, with A.G.B. Simpson as co-investigator)
- 2012 – 2013 **Natural Sciences and Engineering Research Council of Canada (NSERC) EQPEQ – Research Tools and Instruments - Category 1**: \$147,455 (PI – C. Slamovits, co-investigators: A.J. Roger and J.M. Archibald)
- 2007 – 2012 **Canadian Institute for Advanced Research (CIFAR)**, \$25,000/year research support funds for 5 years (PI – A.J. Roger)
- 2011 - 2012 **Canada Foundation for Innovation/NSRIT/Dalhousie University Faculty of Medicine** – A new laboratory for comparative genomics and evolutionary bioinformatics, \$301,664 (renovation and equipment grant accompanying CRC) (PI – A.J. Roger)
- 2007 – 2012 **Tula Foundation**, CGEB Molecular Biology Postdoctoral Fellowship, \$64,000/year for 5 years (funding for postdoctoral fellowship and research expenses) (PI – A.J. Roger)
- 2005 – 2010 **Natural Sciences and Engineering Research Council of Canada (NSERC) Discovery Grant**, \$41,300/year for 5 years – “*Phylogenomic approaches to inferring ancient relationships amongst eukaryotes*” (PI – A.J. Roger)
- 2007 – 2009 **E.W.R. Steacie Fellowship Supplement, NSERC**, \$238,624 over 2 years – “*Determining the super-kingdoms of eukaryotes*” (PI – A.J. Roger)
- 2007 **NSERC Research Tools and Infrastructure Grant** \$55,591 – “*An Xserve computer cluster for phylogenetic and comparative genomic analysis*” (PI – A.J. Roger)
- 2004 – 2008 **Alfred P. Sloan Foundation Research Fellowship**, \$40,000 USD – “*Understanding genome and proteome evolution*” (PI – A.J. Roger)
- 2004 – 2007 **CIHR/Peter Loughheed New Investigator Award Research Grant** \$250,000 over 3 years – “*The origins and evolution of genes and organelles in eukaryotes*” (PI – A.J. Roger)

- 2003 – 2008 **Canadian Institutes for Health Research, Operating Grant** (MOP - 62809), \$107,815/year for 5 years – "*The origins and evolution of genes and organelles in eukaryotes*" (**PI – A.J. Roger**)
- 2002 – 2005 **Canadian Institutes for Health Research, Multiuser Equipment/Maintenance Grant**, \$593,792 – "*A new TEM for the Faculty of Medicine Electron Microscope Facility/EM Maintenance contract for existing TEM in EM facility*" (PI – G.C. Johnston, **co-investigator: A.J. Roger** and others)
- 2001 – 2005 **Genome Atlantic - Genome Canada/Atlantic Innovation Fund Large-scale Project: "The Protist EST Program"**, Genomics Grant: ~\$3,208,612 over 4 years (PI – M.W. Gray, **Co-investigators: A.J. Roger** and 8 others)
- 2001 – 2005 **Genome Atlantic - Genome Canada/ Atlantic Innovation Fund Large-Scale Project: "Prokaryotic genome evolution and diversity: from genomics to metagenomics"**, Genomics grant: ~\$4,442,900 budgeted over 4 years (PI – W. F. Doolittle, **co-investigators: A.J. Roger** and 5 others)
- 2000 – 2004 **NSERC Operating Grant** (#227085-00) \$35,000/year for 4 years – "*Exploring eukaryote evolution with protein phylogeny*" (**PI – A.J. Roger**)
- 2000 – 2003 **NSERC Genomics Grant** (#228263-99) \$431,775 over 3 years – "*Gene discovery in protists by random sequencing and comparative genomics*" (**PI – A.J. Roger**, co-investigators: T. M. Embley, J. M. Logsdon and M. Ragan)
- 2000 – 2001 **Dalhousie Medical Research Foundation** – equipment grant for \$26,762.25 for 1 year (**PI – A.J. Roger**)
- 1999 – 2000 **Dalhousie University, Faculty of Medicine Intramural Operating Support** – grant for \$9990 for 1 year – "*Protein phylogenetics and early eukaryote evolution*" (**PI – A. J. Roger**)
- 1999 - 2000 **Canada Foundation for Innovation (CFI) New Investigator Grant** - \$200,000 (to set up automated sequencing facility) – "*A laboratory for comparative genomics*" (**PI – A.J. Roger** with W. F. Doolittle and M. W. Gray as co-investigators)
- 1999 - 2000 **Startup funds from Dept. of Biochemistry and Molecular Biology/Faculty of Medicine, Dalhousie University** - \$120,000 (\$50,000 was used as matching funds for CFI above)
- 1998 – 2003 **National Aeronautics & Space Administration (NASA) Cooperative Agreement, Astrobiology Institute** – "*Environmental Genomes and the Evolution of Complex Systems in Simple Organisms*" (PI – M.L. Sogin with **A. J. Roger** as one of 8 **co-investigators**)

GENOME PROJECT INVOLVEMENT/ADVOCACY

- 2006 **Main applicant** in “*Animals and Fungi: Common Origin, but Independent Approaches to Multicellularity*”, a multiple genome sequencing project funded by the National Human Genome Research Institute (NHGRI) in May 2006

RESEARCH MANUSCRIPTS – SUBMITTED/PREPRINTS:

183. Zhao D., Salas-Leiva D.E., Williams S.K., Dunn K. and Roger A.J. (2024) Eukfinder: a pipeline to retrieve microbial eukaryote genomes from metagenomic sequencing data. *bioRxiv* <https://www.biorxiv.org/content/10.1101/2023.12.28.573569v2> [under review in *mSystems*]
182. Jerlström-Hultqvist J., Gallot-Lavallée L., Salas-Leiva D.E., Curtis B.A., Záhonová K., Čepička I., Stairs C.W., Pipaliya S., Dacks J.B., Archibald J.M. and **Roger A.J.** (2023) A unique symbiosome in an anaerobic single-celled eukaryote. *bioRxiv* <https://www.biorxiv.org/content/10.1101/2023.03.03.530753v1> [in revision, *Nat. Communications*]
181. Williams S.K., Jerlstrom-Hultqvist J., Eglit, Y., Salas-Leiva, D.E., Curtis, B. Orr, R.J.S., Stairs, C.W., Simpson, A.G.B, and **Roger A. J.** (2023) Extreme mitochondrial reduction in a newly-discovered group of free-living protists. *bioRxiv* <https://www.biorxiv.org/content/10.1101/2023.05.03.539051v1> [in revision, *Nat. Communications*]

**RESEARCH MANUSCRIPTS PUBLISHED, OR IN PRESS:
(ROGER LAB TRAINEES ARE UNDERLINED)**

180. Baker B., Gutiérrez-Preciado A., Rodríguez del Río A., McCarthy C.G.P, López-García P., Huerta-Cepas J., Susko E., **Roger A.J.**, Eme L. and Moreira D. (2024) Expanded phylogeny of extremely halophilic archaea shows multiple independent adaptations to hypersaline environments. *Nat. Microbiol.* (in press)
179. Eglit Y., Shiratori T., Jerlström Hultqvist J., Williamson K., **Roger, A.J.**, Ishida K., and Simpson A.G.B. (2023) *Meteora sporadica*, a protist with incredible cell architecture, is related to Hemimastigophora. *Curr. Biol.* 34:451-459
178. Záhonová K., Füßy Z., Stairs C.W., Leger M.M., Tachezy J., Čepička I., **Roger A.J.**, and Hampl V. (2023) Comparative analysis of mitochondrion-related organelles in anaerobic amoebozoans. *Micro. Gen.* 11:00143
177. Gallot-Lavallée L., Jerlström-Hultqvist J., Salas-Leiva D.E., Stairs C.W., Čepička I., **Roger A.J.** and Archibald J.M. (2023) Massive intein content in *Anaeramoeba* reveals new aspects of intein mobility in eukaryotes. *Proc. Natl Acad. Sci. USA* 120: e2306381120

176. Muñoz-Gómez S.A., Cadena L.R., Gardiner A.T., Leger M.M., Sheikh S., Connell L.B., Bily T., Kopejtko K., Beatty J.T., Koblížek M., **Roger, A.J.**, Slamovits C.H., Lukeš J. and Hashimi H. (2023) Intracytoplasmic-membrane development in alphaproteobacteria involves the homolog of the mitochondrial crista-developing protein Mic60. *Curr. Biol.* 33:1099-1111
175. Higuera A., Salas-Leiva D.E., Curtis B.A., Patiño L.H., Zhao D., Jerlström-Hultqvist J., Dlutek M., Muñoz M., **Roger A.J.**, Ramírez J.D. (2023) Draft genomes of *Blastocystis* subtypes from human samples of Colombia. *Parasites & Vectors* 1:1-10.
174. Hess S., Williams S.K., Busch A., Irisarri I., Delwiche C.F., de Vries S., Darienko T., **Roger A.J.**, Archibald J.M., Buschmann H., von Schwartzberg K. and de Vries J. (2022) A phylogenomically informed five-order system for the closest relatives of land plants. *Curr. Biol.* 32:4473-4482.e7
173. Gerbracht J.V., Harding T., Simpson A.G.B., **Roger A.J.**, Hess S. (2022) Comparative transcriptomics reveals the molecular toolkit used by an algivorous protist for cell wall perforation. *Curr. Biol.* 32:3374-3384. e5
172. Mathavarajah S., Vergunst K.L., Williams, S.K., He R., Maliougina M., Habib E.B., Park M., Salsman J., Roy s., Braasch I. **Roger A.J.**, Langelaan D.N. and Dellaire G. (2022) PML and PML-like exonucleases restrict retrotransposons in jawed vertebrates. *Nucleic Acids Res.* **51**: 3185-3204
171. **Baños, H.**, Susko E. and **Roger A.J.** (2022) Are profile mixture models overparameterized? *bioRxiv* doi: <https://doi.org/10.1101/2022.02.18.481053> [accepted in *Syst. Biol.*]
170. Youssef N., Susko E., **Roger A.J.** and Bielawski J.P. (2022) Evolution of amino acid propensities under stability-mediated epistasis. *Mol. Biol. Evol.* 39:msac030 <https://doi.org/10.1093/molbev/msac030>
169. Muñoz-Gómez S.A., Susko E., Williamson K., Eme L., Slamovits C.H., Moreira D., López-García P. and **Roger A.J.** (2022) Site-and-branch-heterogeneous analyses of an expanded dataset favors mitochondria as sister to known *Alphaproteobacteria*. *Nat. Ecol. Evol.* <https://doi.org/10.1038/s41559-021-01638-2>
168. Salas-Leiva D.E., Tromer E.C., Curtis B.A., Jerlström-Hultqvist J., Kolisko M., Yi Z., Salas-Leiva J., Gallot-Lavallée L., Kops G.J.P.L., Archibald J.M., Simpson A.G.B., **Roger A.J.** (2021) A free-living protist that lacks canonical eukaryotic DNA replication and segregation systems. *Nat. Commun.* **12**: 6003. <https://doi.org/10.1038/s41467-021-26077-2>
167. Stairs C.W., Táborski P., Kolisko M., Pánek T., Eme L., Hradilová M., Vlček C., Jerlström-Hultqvist J., **Roger A.J.** and Čepička I. (2021) Anaeramoebae are a deeply divergent lineage of eukaryotes that clarify the transition from anaerobic mitochondria to hydrogenosomes. *Curr. Biol.* **31**: 5605-5612

166. Tice AK, Žihala D, Pánek T, Jones RE, Salomaki E, Nenarokov S, Burki F, Eliáš M, Eme L, **Roger A.J.**, Rokas A, Shen X, Strassert JFH, Kolísko M, Brown MW. (2021). PhyloFisher: A phylogenomic package for resolving eukaryotic relationships. *PLoS Biol.* doi: <https://doi.org/10.1371/journal.pbio.3001365>.
165. Pipaliya S., Santos R., Salas-Leiva D., Balmer E.A., Wirdnam C.D., **Roger A.J.**, Hehl A.B., Faso, C. and Dacks J.B. (2021) Unexpected organellar locations of ESCRT machinery in *Giardia intestinalis* and complex evolutionary dynamics spanning the transition to parasitism in the lineage Fornicata. *BMC Biol.* doi: <https://doi.org/10.1101/2021.02.11.430673>
164. Susko E., Steel, M. and **Roger, A.J.** (2021) Conditions under which distributions of edge length ratios on phylogenetic trees can be used to order evolutionary events. *J. Theor. Biol.* 526:110788
163. Zhang, T., Li C., Zhang Z., Wang C., **Roger A.J.** and Gao F. (2021) Characterization and comparative analyses of mitochondrial genomes in single-celled eukaryotes to shed light on the diversity and evolution of linear molecular architecture. *Int. J. Mol. Sci.* 22:2546
162. Susko E. and **Roger, A.J.** (2021) Long branch attraction biases in phylogenetics. *Syst. Biol.* 70:838-843
161. Žárský V., Klimeš V., Pačes J., Vlček C., Hradilová M., Beneš V., Nývltová E., Hrdý I., Pyrih J., Mach J., Barlow L., Stairs C.W., Eme L., Hall N., Eliáš M., Dacks J.B., **Roger, A.J.** and Tachezy J. (2021) The *Mastigamoeba balamuthi* genome and the nature of the free-living ancestor of *Entamoeba*. *Mol. Biol. Evol.* (in press) <https://doi.org/10.1093/molbev/msab020>
160. Gray M.W., Burger, G, Derelle R., Klimeš V, Leger M.M., Sarrasin M., Vlček C., **Roger A.J.**, Eliáš M., Lang B.F. (2020) The draft nuclear genome sequence and predicted mitochondrial proteome of *Andalucia godoyi*, a protist with the most gene-rich and bacteria-like mitochondrial genome. *BMC Biology* 18: 22 (<https://doi.org/10.1186/s12915-020-0741-6>)
159. Susko E. and **Roger, A.J.** (2020) On the use of information criteria for model selection in phylogenetics. *Mol. Biol. Evol.* 37: 549-562.
158. Karnkowska A., Treitli S.C., Brzoň O., Novák L., Vacek V., Soukal P., Barlow L.D., Herman E.K., Pipaliya S., Pánek T., Žihala D., Petrželková R., Butenko A., Eme L., Stairs C.W., **Roger A.J.**, Eliáš M., Dacks J.B. and Hampl V. (2019) The oxymonad genome displays canonical eukaryotic complexity in the absence of a mitochondrion. *Mol. Biol. Evol.* 36: 2292-2312.
157. Hess, S., Eme, L., **Roger, A.J.** and Simpson, A.G.B. (2019) A natural toroidal microswimmer propelled by a rotary eukaryotic flagellum. *Nature Microbiol.* 4: 1620-1626.

156. Wang, H.-C., Susko, E. and **Roger, A.J.** (2019) The relative importance of modeling site pattern heterogeneity versus partition-wise heterotachy in phylogenomic inference. *Syst. Biol.* 68: 1003-1019.
155. Muñoz-Gómez, S.A., Hess, S., Burger, G., Lang, B.F., Susko, E., Slamovits, C.H. and **Roger, A.J.** (2019) An updated phylogeny of the *Alphaproteobacteria* reveals that the parasitic *Rickettsiales* and *Holosporales* have independent origins. *eLife*, Feb. 25; 8. pii: e42535.
154. Cenci, U., Sibbald, S.J., Curtis, B.A., Kamikawa, R., Eme, L., Moog, D., Henrissat, B., Maréchal, E., Chabi, M., Djemiel, C., **Roger, A.J.**, Kim, E. and Archibald, J.M. (2018) Nuclear genome sequence of the plastid-lacking cryptomonad *Goniomonas avonlea* provides insights in the evolution of secondary plastids. *BMC Biol.* 16: 137.
153. Pyrihová, E., Motycková, A., Voleman, L., Wandyszewska, N., Fišer, R., Seydlová, G., **Roger, A.J.**, Kolísko, M. and Doležal, P. (2018) A single tim translocase in the mitosomes of *Giardia intestinalis* illustrates convergence of protein import machines in anaerobic eukaryotes. *Genome Biol. Evol.* 10: 2813-2822.
152. Lax, G., Eglit, Y., Eme, L., Bertrand, E.M., **Roger, A.J.** and Simpson, A.G.B. (2018) Hemimastigophora is a novel supra-kingdom-level lineage of eukaryotes. *Nature* 564: 410-414.
151. **Roger, A.J.** and Susko, E. (2018) Molecular clocks provide little information to date methanogenic archaea. *Nature Ecol. Evol.* 2: 1676-1677.
150. Stairs, C.W., Eme, L., Muñoz-Gómez, S., Cohen, A., Dellaire, G., Shepherd, J.N., Fawcett, J.P. and **Roger, A.J.** (2018) Microbial eukaryotes have adapted to hypoxia by horizontal acquisitions of a gene involved in rhodoquinone biosynthesis. *eLife* 7: e34292.
149. Susko, E., Lincker, L. and **Roger, A.J.** (2018) Accelerated estimation of frequency classes in site-heterogeneous profile mixture models. *Mol. Biol. Evol.* 35: 1266-1283.
148. Heiss, A.A., Kolisko, M., Ekelund, F., Brown, M.W., **Roger, A.J.** and Simpson, A.G. (2018) Combined morphological and phylogenomic re-examination of malawimonads, a critical taxon for inferring the evolutionary history of eukaryotes. *Roy. Soc. Open Sci.* 5: 171707.
147. Brown, M.W., Heiss, A.A., Kamikawa, R., Inagaki, Y., Yabuki, A., Tice, A.K., Shiratori, T., Ishida, K.I., Hashimoto, T., Simpson, A.G.B. and **Roger, A.J.** (2018) Phylogenomics places orphan protistan lineages in a novel eukaryotic super-group. *Genome Biol. Evol.* 10: 427-433.
146. Wang, H.-C., Minh, B.Q., Susko, E. and **Roger, A.J.** (2018) Modeling site heterogeneity with posterior mean site frequency profiles accelerates accurate phylogenomic estimation. *Syst. Biol.* 67: 216-235.

145. Gentekaki, E., Curtis, B.A., Stairs, C.W., Klimes, V., Elias, M., Salas-Leiva, D.E., Herman, E.K., Eme, L., Arias, M.C., Henrissat, B., Hilliou, F., Klute, M.J., Suga, H., Malik, S.-B., Pightling, A.W., Kolisko, M., Rachubinski, R.A., Schlacht, A., Soanes, D.M., Tsaousis, A.D., Archibald, J.M., Ball, S.G., Dacks, J.B., Clark, C.G., van der Giezen, M. and **Roger, A.J.** (2017) Extreme genome diversity in the hyper-prevalent parasitic eukaryote *Blastocystis*. *PLoS Biol.* 15: e2003769.
144. Harding, T., **Roger, A.J.** and Simpson, A.G.B. (2017) Adaptations to high salt in a halophilic protist: differential expression and gene acquisitions through duplications and gene transfers. *Front Microbiol.* 8: 944.
143. Kang, S., Tice, A.K., Spiegel, F.W., Silberman, J.D., Pánek, T., Cepicka, I., Kostka, M., Kosakyan, A., Alcântara, D.M., **Roger, A.J.**, Shadwick L.L., Smirnov A., Kudryavstev A., Lahr D.J.G. and Brown, M.W. (2017) Between a pod and a hard test: the deep evolution of amoebae. *Mol. Biol. Evol.* 34: 2258-2270.
142. Takishita, K., Chikaraishi, Y., Tanifuji, G., Ohkouchi, N., Hashimoto, T., Fujikura, K. and **Roger, A.J.** (2017) Microbial eukaryotes that lack sterols. *J. Eukaryot. Microbiol.* 64: 897-900.
141. Yang, J., Harding, T., Kamikawa, R., Simpson, A.G.B. and **Roger, A.J.** (2017) Mitochondrial genome evolution and a novel RNA editing system in deep-branching heteroloboseids. *Genome Biol. Evol.* 9: 1161-1174.
140. Leger, M.M., Kolisko, M., Kamikawa, R., Stairs, C.W., Kume, K., Čepicka, I., Silberman, J.D., Andersson, J.O., Xu, F., Yabuki, A., Eme, L., Zhang, Q., Takishita, K., Inagaki, Y., Simpson, A.G.B., Hashimoto, T. and **Roger, A.J.** (2017) Organelles that illuminate the origins of *Trichomonas* hydrogenosomes and *Giardia* mitosomes. *Nature Ecol. Evol.* 1: 0092.
139. Eme L., Gentekaki, E., Curtis, B., Archibald, J.M. and **Roger A.J.** (2017) Lateral gene transfer in the adaptation of the anaerobic parasite *Blastocystis* to the gut. *Curr. Biol.* 27: 807-820.
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40. Inagaki, Y., Simpson, A.G.B., Dacks, J. and **Roger, A.J.** (2004) Phylogenetic artifacts can be caused by leucine, serine and arginine codon usage heterogeneity: dinoflagellate plastid origins as a case study. *Syst. Biol.* 53:582-593
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38. Simpson, A.G.B. and **Roger, A.J.** (2003) Protein phylogenies robustly resolve the deep-level relationships within Euglenozoa. *Mol. Phylogenet. Evol.* 30:201-212.
37. Susko, E., Field, C., Blouin, C. and **Roger, A.J.** (2003) Estimation of rates-across-sites distributions in phylogenetic substitution models. *Syst. Biol.* 52:594-603.
36. Dacks, J.B., Davis, L.A.M., Sjögren, Å.M., Andersson, J.O., **Roger, A.J.** and Doolittle, W.F. (2003) Evidence for Golgi bodies in proposed 'Golgi-lacking' lineages. *Proc. Roy. Soc. Lond. B* 270 (Suppl. 2): S168-S171.
35. Shan, Y., Milios, E., **Roger, A.**, Blouin, C. and Susko, E. (2003) Automatic recognition of regions of intrinsically poor multiple alignment using machine learning. *Proceedings of the 2003 IEEE Bioinformatics Conference (CSB2003)*, pp. 482-483.
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31. Blouin, C., Boucher, Y. and **Roger, A.J.** (2003) Inferring functional constraints and divergence in protein families using 3D mapping of phylogenetic information. *Nucleic Acids Res.* 31: 790-797.
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29. Susko, E., Inagaki, Y., Field, C., Holder, M.E. and **Roger, A.J.** (2002) Testing for differences in rates across sites distributions in phylogenetic subtrees. *Mol. Biol. Evol.* 19:1514-1523.
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15. **Roger, A.J.**, Morrison, H.G. and Sogin, M.L. (1999) Primary structure and phylogenetic relationships of a malate dehydrogenase gene from *Giardia lamblia*. *J. Mol. Evol.* 48:750-755.
14. Dacks, J. and **Roger, A.J.** (1999) The first sexual lineage and the relevance of facultative sex. *J. Mol. Evol.* 48: 779-783.
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3. **Roger, A.J.** and Brown, J.R. (1996) A chimaeric origin for eukaryotes re-examined. *Trends Biochem. Sci.* 21: 370-371.
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1. Keeling, P.J. and **Roger, A.J.*** (1995) The selfish pursuit of sex. *Nature* 375: 283.

REVIEW ARTICLES/COMMENTARIES/BOOK CHAPTERS:

31. **Roger A.J.** (2021) Thomas Cavalier-Smith (1942-2021) *Curr. Biol.* 31: R977-R981 (Obituary)
30. Youssef N., Susko E., **Roger A.J.** and Bielawski J.P. (2021) Shifts in amino acid preferences as proteins evolve: a synthesis of experimental and theoretical work. *Protein Sci.* doi: 10.1002/pro.4161.
29. **Roger A.J.**, Susko E. and Leger M.M. (2021) Evolution: Reconstructing the timeline of eukaryogenesis (Dispatch). *Curr. Biol.* 31: R193-R196
28. Sibbald S.J., Eme L., Archibald J.M. and **Roger A.J.** (2020) Lateral gene transfer mechanisms and pan-genomes in eukaryotes. *Trends Parasitol.* 36:927-941
27. Burki, F., **Roger, A.J.**, Brown, M.W. and Simpson, A.G.B. (2020) The New Tree of Eukaryotes. *Trends Ecol. Evol.* 35: 43-55.
26. **Roger, A.J.** (2018) Q & A. *Curr. Biol.* 28: R1233-R1234.
25. **Roger, A.J.** (2018) Reply to 'Eukaryote lateral gene transfer is Lamarckian.' *Nature Ecol. Evol.* 2: 755.

24. Leger, M.M., Eme, L., Stairs, C.W. and **Roger, A.J.** (2018) Demystifying eukaryote lateral gene transfer (Response to Martin 2017 DOI: 10.1002/bies.201700115). *Bioessays* 40: e1700242.
23. **Roger, A.J.**, Munoz-Gomez, S.A. and Kamikawa, R. (2017) The origin and diversification of mitochondria. *Curr. Biol.* 27: R1177-R1192.
22. Dacks, J., Field, M., Buick, R., Eme, L., Gribaldo, S., **Roger, A.J.**, Brochier, C. and Devos, D.P. (2016) The changing view of eukaryogenesis - fossils, cells, lineages and how they all come together. *J. Cell Sci.* 129: 3695-3703.
21. Munoz-Gomez, S.A. and **Roger, A.J.** (2016) Leaving negative ancestors behind. *eLIFE* 5: e20061.
20. Sharpe, S.C., Eme, L., Brown, M.W. and **Roger, A.J.** (2015) Timing the origins of multicellular eukaryotes through phylogenomics and relaxed molecular clock analyses. In *Evolutionary Transitions to Multicellular Life, Advances in Marine Genomics 2*, I. Ruiz-Trillo and A.M. Nedelcu (Eds.), pp. 3-29, Springer Science.
19. Tsaousis, A.D., Leger, M.L., Stairs, C.W. and **Roger, A.J.** (2012) The biochemical adaptations of mitochondrion-related organelles of parasitic and free-living microbial eukaryotes to low oxygen environments. In *Anoxia, Vol. 21: Cellular Origin, Life in Extreme Habitats and Astrobiology*, pp. 51-81, A.V. Altenbach, J.M. Bernhard and J. Seckbach (Eds.), Springer.
18. **Roger, A.J.**, Kolisko, M. and Simpson, A.G.B. (2012) Phylogenomic analysis. In *Evolution of Virulence in Eukaryotic Microbes*, pp. 44-69, L.D. Sibley, B.J. Howlett, and J. Heitman (Eds.), Wiley-Blackwell.
17. Gaston, D., Tsaousis, A.D. and **Roger, A.J.** (2009) Predicting proteomes of mitochondria and related organelles from genomic and expressed sequence tag data. *Methods Enzymol.* 457: 21-47.
16. Susko, E. and **Roger, A.J.** (2009) Chapter 13. Statistical analysis of expressed sequence tags. In *Expressed Sequence Tags (ESTs): Generation and Analysis*, J. Parkinson (Ed.), *Methods in Molecular Biology*, Vol. 533: 277-287, Humana Press, NY.
15. **Roger, A.J.** and Simpson A.G.B. (2009) Evolution: Revisiting the root of the eukaryote tree. (Dispatch) *Curr. Biol.* 19: R165-167.
14. Ruiz-Trillo, I., Burger, G., Holland, P., King, N., Lang, B.F., **Roger, A.J.** and Gray, M.W. (2007) The origins of multicellularity: a multi-taxon genome initiative. *Trends Genet.* 23:113-118 [peer-reviewed]
13. Barberà, M. J., Ruiz-Trillo, I., Leigh, J. Hug, L.A. and **Roger, A.J.** (2007) Chapter 10. The diversity of mitochondrion-related organelles amongst eukaryotic microbes. In: *Origins of*

Mitochondria and Hydrogenosomes, pp. 239-268, W. Martin and M. Müller (Eds.), Springer-Verlag [**peer-reviewed**]

12. **Roger A.J.** (2006) Telling evolutionary tales. (book review) *Nat. Rev. Genet.* 38:1357
11. **Roger, A.J.** and Hug, L. A. (2006) The origin and diversification of eukaryotes: problems with molecular phylogenetics and molecular clock estimation. *Phil. Trans. R. Soc. B* **361**:1039-1054 [**peer-reviewed**]
10. Keeling, P.J., Burger, G., Durford, D.G., Lang, B.F., Lee, R.W., Pearlman, R.E., **Roger, A.J.** and Gray, M.W. (2005) The tree of eukaryotes. *Trends Ecol. Evol.* 20: 670-676 [**peer-reviewed**]
9. Simpson, A.G.B and **Roger, A.J.** (2004) The real 'kingdoms' of eukaryotes. *Curr. Biol.* 14: R693-696
8. Simpson, A.G.B. and **Roger, A.J.** (2004) Excavata and the origin of amitochondriate eukaryotes. *In: Organelles, Genomes and Eukaryote Phylogeny: An Evolutionary Synthesis in the Age of Genomics*, pp. 27-53, R.P. Hirt and D.S. Horner (Eds.), CRC Press, Boca Raton, Florida, USA [**peer-reviewed**]
7. Doolittle, W.F., Boucher, Y., Nesbo, C.L., Douady, C.J., Andersson, J.O. and **Roger, A.J.** (2003) How big is the iceberg of which organellar genes in nuclear genomes are but the tip? *Proc. Roy. Soc. Lond. Soc. Ser. B* 358:39-57 [**peer-reviewed**]
6. Simpson, A.G.B. and **Roger, A.J.** (2002) Eukaryote evolution: Getting to the root of the problem. (Dispatch) *Curr. Biol.* 12:R691-R693 [**not peer-reviewed**]
5. O'Malley, M.A., Roger, A.J. and Doolittle, W.F. (2002) Can commercial protection be good for research? *Nature* **419**: 111 [**not peer-reviewed**]
4. **Roger, A.J.**, and Silberman, J.D. (2002) Cell evolution: Mitochondria in hiding. (News & Views) *Nature* 418:827-829 [**not peer-reviewed**]
3. **Roger, A.J.** Reconstructing early events in eukaryotic evolution (1999) *American Naturalist* **154**: S146-S163 [**peer-reviewed**]
2. **Roger, A.J.**, Keeling, P.J. and Doolittle, W.F. (1994) Introns, the broken transposons. *J. Gen. Physiol.* **49**:27-37 [**not peer-reviewed**]
1. **Roger, A.J.** and Doolittle W.F. (1993) Molecular evolution. Why introns-in-pieces? *Nature* **364**:289-299.

SYMPOSIUM ORGANIZATION/COORDINATION

- 2020 Co-organizer of the ISEP Online Seminar Series on Protist Genomics, Diversity and Evolution (<https://www.isep-protists.com/seminars>)
- 2013 Co-organizer of Symposium entitled “Phylogenomic Approaches to Understanding Early Eukaryote Evolution,” **ICOP XIV**, Vancouver, July 2013
- 2010 Co-organizer of the Canadian Institute for Advanced Research - Integrated Microbial Biodiversity Program, **Workshop on Genome Annotation**, Dalhousie University, June 2010.
- 2008 Member of Organizing Committee of **Protist 2008** (joint meeting of International Society for Evolutionary Protistology (ISEP) and International Society for Protozoologists (ISOP), held at Dalhousie University, July 2008
- 2008 Organizer of Symposium entitled “Protistan Phylogenomics” at **Protist 2008** meeting, Dalhousie University, July 2008
- 2007 Member of Organizing Committee for **Society for Molecular Biology and Evolution (SMBE) Annual Meeting**, Dalhousie University, June 2007
- 2007 Organizer of Symposium entitled “Modeling protein evolution” at **Society for Molecular Biology and Evolution (SMBE) Annual Meeting**, Dalhousie University, June 2007
- 2005 Organizer of a Phylogenetics Workshop at the **International Conference on Microbial Genomes** held at the Westin Hotel, Halifax, April 2005

PRESENTATIONS (110 INVITED)

- 2024 Geobiology Gordon Research Conference. Galveston, Texas Jan. 16th Title: *A unique symbiosome in an anaerobic protist from marine sediments* [invited]
- 2023 Phylomania 2023, Hobart, Tasmania Nov. 22nd Title: *New phylogenetic models of amino acid sequence evolution for probing the relationships between prokaryotes and eukaryotes.*
- 2023 Simons Foundation/Moore Foundation Project on the Origins of the Eukaryotic Cell Annual meeting, Moore Foundation, Palo Alto. Oct. 16th Title: *New datasets and phylogenetic models shed light on the origin of eukaryotes.* [invited]
- 2023 Canadian Society of Microbiologists (CSM) 2023 Conference, Dalhousie Univ. Halifax, N.S., June 26th, Title: *A novel symbiosomal organelle housing deltaproteobacteria in an anaerobic amoeba.* [invited]

- 2023 Symposium on Protein Evolution, Münster, Germany, July 3rd, 2023. Title: *Modeling protein evolution for phylogenetics on the billion-year timescale.* [invited]
- 2023 Molecular Evolution group, University of Sydney, Sydney Australia, Feb. 13th. Title: *Advances in deep phylogenetic models and understanding eukaryogenesis.* [invited]
- 2022 Simons Foundation/Moore Foundation Project on the Origins of the Eukaryotic Cell Annual meeting at the Simons Foundation head office in NYC. Oct. 11 2022. Title: *New datasets and phylogenetic models shed light on the origin of eukaryotes.* [invited]
- 2021 Biochem & Mol. Biol. Dept., Dept. Seminar (Dalhousie). Nov. 2021. Title: *Coevolving Genomes, Organelles and Symbionts in Anaerobic Protozoa.*
- 2021 ISOP / ISEP Virtual Symposium to Honour Thomas Cavalier-Smith – 23 July 2021. Title: *The evolution of Tom Cavalier-Smith's views on the history of life over five decades.* (see <https://www.youtube.com/watch?v=SfeRKaDZyz0&t=8580s>) 1504 views as of April 19, 2023 [invited]
- 2021 Mathematical, Inferential and Computational Phylogenomics (MIC-Phy) (virtual). Title: *Ordering the events in the ancient tree of life with edge length ratio distributions.* (see <https://www.youtube.com/watch?v=l0z6WuMlhqw>)
- 2019 The Origin of Eukaryotes Meeting, The Agouron Institute, Pasadena, CA. Title: *The nature and timing of the mitochondrial endosymbiosis: knowns and unknowns.* [invited]
- 2019 Unusual Cell Components in Lower Eukaryotes Workshop, Marburg, Germany. Title: *Origin and evolution of anaerobic mitochondria across eukaryotic diversity.* [invited]
- 2019 14th International Colloquium on Endocytobiology and Symbiosis, Lille, France. Title: *Coevolution of genomes, organelles and endosymbionts in anaerobic protists.*
- 2019 VIII ECOP-ISOP Joint Congress, Rome, Italy. Title: *Coevolution of mitochondria and bacterial symbionts in anaerobic protists.*
- 2019 Symposium on “Geobiology of Symbiosis”, California Institute of Technology, USA. Title: *Symbiosis in eukaryotic cell evolution: from mitochondrial origins to anaerobic adaptations.* [invited]
- 2018 Third Global Invertebrate Genomics Alliance Research Conference and Workshop, Curacao. Title: *Improvements in phylogenetic models for estimating deep evolutionary divergences.*

- 2018 2nd International Blastocystis Conference Workshop, Universidad del Rosario, Bogota, Colombia. Title: *Blastocystis comparative genomics and evolution*.
- 2018 2nd International Blastocystis Conference, Bogota, Colombia. Title: *Insights into Blastocystis genome plasticity and subtype differences from comparative genomics (Keynote)*
- 2018 Department of Microbiology Seminar, Ohio State University, Columbus. Title: *Evolving genomes, mitochondria, and endosymbionts in anaerobic protists*.
- 2018 2nd Joint Congress on Evolutionary Biology, Montpellier, France. Title: *Realism in phylogenetic models is essential for reconstructing early eukaryote evolution*.
- 2018 Canadian Institute for Advanced Research, Integrated Microbial Biodiversity Program Meeting, Banff. Title: *Protists as eukaryotes and as microbial community members – whose side are they on*.
- 2018 XXII Meeting of the International Society of Evolutionary Protistology, Cyprus. Title: *Genomes, organelles and endosymbionts of anaerobic protists*.
- 2018 Endosymbiosis Workshop, Kiel University, Germany. Title: *Adaptation of protists to low oxygen environments and the ‘wild west’ of mitochondrial evolution*.
- 2018 EMBO and Royal Society International Scientific Seminar Meeting – Using Genomic Comparisons to Understand Cellular Complexity in our Ancient Ancestors, Buckinghamshire, UK. Title: *Knowns and unknowns in eukaryogenesis and the early course of eukaryotic evolution*.
- 2018 Reef Microbiome Workshop, Holetown, Barbados. Title: *Anaerobic protists and their endosymbionts in marine sediments*.
- 2017 Institute for Cell and Molecular Biology, Uppsala University, Sweden. Title: *Lateral gene transfer is an important mechanism facilitating adaptation of eukaryotic microbes to new environments*.
- 2017 Laboratory of Parasitic Diseases, NIH, Bethesda, Maryland. Title: *Comparative genomic investigations into the adaptation of Blastocystis to the gut environment*.
- 2017 15th International Congress of Protistology, Prague, Czech Republic. Title: *Lateral gene transfer is an important mechanism facilitating evolutionary adaptation in protists*.
- 2017 Canadian Institute for Advanced Research, Integrated Microbial Biodiversity Program Meeting, Whistler. Title: *Eukaryogenesis and mitochondria: knowns, unknowns and crazy ideas*.

- 2017 115th International Titisee Conference, Black Forest, Germany. Title: *The evolutionary history of anaerobic mitochondrion-related organelles in microbial eukaryotes.*
- 2017 12th Annual DOE Joint Genome Institute – Genomics of Energy & Environment Meeting, Walnut Creek, CA. Title: *Adaptation of microbial eukaryotes to low oxygen conditions and the gastrointestinal tract.*
- 2016 Genome Atlantic Human Genetics/Genomics Seminar Series, Dalhousie University. Title: *Genomic mechanisms of adaptation of eukaryotic microbes to anaerobic conditions and the gut environment.*
- 2016 Eukaryogenesis Workshop, Seville, Spain. Title: *The root of the tree of eukaryotes and the nature of the last eukaryotic common ancestor.*
- 2016 Department of Biological Sciences, Mississippi State University, USA. Title: *Genomic mechanisms of adaptation of eukaryotic microbes to anaerobic conditions and the gut environment.*
- 2016 Dalhousie Microbiome Research Symposium, Halifax. Title: *Understanding the gut-infecting protozoan Blastocystis through comparative genomics and microbiomics.*
- 2016 Molecular Structure & Function Seminar Series, The Hospital for Sick Children, Toronto. Title: *Genomic mechanisms of adaptation of eukaryotic microbes to anaerobic conditions and the gut environment.*
- 2016 University of Exeter, College of Life and Environmental Science, Exeter, UK. Title: *Adaptation of eukaryotes and their mitochondria to low oxygen.*
- 2015 International Symposium of Global Collaboration on Education, Research and Business in Environmental Studies, Kyoto University, Japan. Title: *From mud-flats to the human gut: Anaerobic eukaryotic microbes.*
- 2015 VII ECOP-ISOP Joint Meeting, Seville, Spain. Title: *Diversity and origins of anaerobic metabolism in mitochondria and related organelles.*
- 2015 The Company of Biologists Workshop – Eukaryo-/Archaeogenesis: Where Do We Stand, West Sussex, UK. Title: *The origin of eukaryotes and mitochondria: theories and evidence.*
- 2014 Evolutionary Biology Center, Uppsala University, Sweden. Title: *Eukaryote and mitochondrial origins; theories and evidence.*
- 2014 Arthur M. Sackler Colloquia of the National Academy of Sciences, Irvine, CA. Title: *Organelle reduction.*

- 2014 ISEP President's Lecture, Protist 2014, Banff, Alberta. Title: *The evolution of mitochondria and related organelles in eukaryotes: theories, mechanisms and evidence.*
- 2013 The 25th Commemorative Symposium for the 29th International Prize in Biology, Fukuoka, Japan. Title: *Phylogenomic approaches to clarifying the deep structure of the tree of eukaryotes.*
- 2013 12th International Colloquium on Endocytobiology and Symbiosis, Halifax, NS. Title: *Evolution of mitochondrion-related organelles in anaerobic protists.*
- 2013 ICOP XIV - International Congress of Protistology, Vancouver, BC. Title: *The deep structure of the tree of eukaryotes inferred from phylogenomic analyses.*
- 2013 Dalhousie-CAU-Kiel Joint Workshop (Life Sciences), Halifax, NS. Title: *Overview of Centre for Comparative Genomics & Evolutionary Bioinformatics.*
- 2012 Society for Molecular Biology and Evolution (SMBE) Annual Meeting, Dublin, Ireland. Symposium: Paradigm Shifts in Phylogeny. Title: *The tree of Life circa 2012: is there reasonable middle ground between tree-hugging and clearcutting?*
- 2012 Biology of Parasitism Course, Marine Biological Laboratory, Woods Hole, MA. Title: *The evolutionary history of free-living and parasitic protists and their organelles.*
- 2012 Penn Bioinformatics Forum, University of Pennsylvania. Title: *Towards Biochemical Reality in Phylogenetic Modeling of Protein Evolution.*
- 2011 EMBO Conference - Comparative Genomics of Lower Eukaryotic Microorganisms, Costa Brava, Spain. Title: *Phylogenomic approaches to deep eukaryote phylogeny: the case of the Excavata.*
- 2011 National Institute of Infectious Disease, Tokyo, Japan. Title: *Diversity in mitochondrion-related organelles in anaerobic protists; investigating evolutionary patterns and processes.*
- 2011 IUMS 2011, Sapporo, Japan. Title: *Diversity in mitochondrion-related organelles in anaerobic protists; investigating evolutionary patterns and processes.*
- 2011 Joint Meeting of the Phycological Society of America and International Society of Protistologists, Seattle, WA. Title: *The evolution of protists and their organelles: new insights from the frontiers of genomics.*
- 2011 Mechanism of Protein Evolution, Denver, Colorado. Title: *Fundi, a new tool for detecting functionally divergent sites in protein evolution.*
- 2010 Vienna Biocenter PhD Symposium 2010 - Origin of Life, Vienna, Austria.

Title: *Eukaryotic origins and the evolution of mitochondria.*

- 2010 Canadian Institute for Advanced Research, Integrated Microbial Biodiversity Program - Workshop on Eukaryotic Genome Annotation, Dalhousie University, Halifax. Title: *Phylogenomics - dataset construction and analyses.*
- 2010 Discussion meeting on “Dating early events in Earth’s history.” NASA Astrobiology Institute at UCLA, Los Angeles, CA. Title: *Early eukaryotic evolution: phylogenomics, rocks, grease and clocks.*
- 2009 Perspectives on the Tree of Life Workshop, Dalhousie University, Halifax, NS. Title: *Deconstructing deconstructions of the Tree of Life: why a tree of microbes might be realizable, meaningful and useful.*
- 2009 Canadian Institute for Advanced Research, Integrated Microbial Biodiversity Program Annual Meeting, Asilomar, CA. Title: *Diversity of mitochondrion-like organelles.*
- 2009 Canadian Institute for Advanced Research, Astrobiology Discussion Meeting, Toronto, ON. Title: *Early eukaryote evolution: New problems and paradigms.*
- 2009 Canadian Society for Ecology and Evolution & Genetics Society of Canada Annual Meeting, Dalhousie University, Halifax, NS. Title: *Problems and progress in understanding deep eukaryotic phylogeny with phylogenomic approaches.*
- 2009 American Society for Microbiology Annual Meeting -- Symposium: “Shaking the Tree of Life”, Philadelphia, PA. Title: *The true ‘kingdoms’ of eukaryotes.*
- 2009 “Darwin Day” Seminar, Department of Biological Sciences, University of Arkansas, Fayetteville, Arkansas. Title: *Early eukaryote phylogeny and evolution: New paradigms and challenges.*
- 2008 ICREA Conference on the Origin and Early Evolution of Metazoans, Barcelona, Spain. Title: *The power and pitfalls of a phylogenomic analyses in understanding early eukaryote evolution.*
- 2008 International Symposium on Evolutionary Protistology, Tsukuba, Japan. Title: *Diversity of genomes and organelles of anaerobic protists.*
- 2008 Mitochondria, Ribosomes and Cells: A Symposium in Honour of Mike Gray, Dalhousie University, Halifax. Title: *The diversity of mitochondrion-derived organelles in eukaryotes.*
- 2008 Symposium on Evolution, The Rockefeller University, NY. Title: *The deep evolutionary history of eukaryotes.*

- 2008 National Evolutionary Synthesis Centre (NESCent), Darwin Day Symposium Invited Speaker. Title: *Deep phylogeny and the origins of eukaryotes.*
- 2007 Cambridge University, Dept. of Biochemistry, Cambridge, U.K. Title: *The diversity and evolution of the mitochondrial compartment in eukaryotes.*
- 2007 Isaac Newton Institute for Mathematical Sciences, Cambridge, U.K. Title: *Markov Models of Protein Evolution: Let's get real!*
- 2007 Endocytobiology Meeting, Gmunden, Austria. Title: *Problems inferring the deep phylogeny of eukaryotes with multiple gene data.*
- 2007 Symposium Speaker, Society for Molecular Biology and Evolution 2007 Annual meeting, Dalhousie University, Halifax. Title: *Of excavates and opisthokonts – problems with inferring relationships among eukaryote superkingdoms with supermatrices.*
- 2007 Université de Montreal, Dept. Seminar, Montréal, QC. Title: *The diversity of the mitochondrial compartment in eukaryotes.*
- 2007 American Society for Microbiology (ASM) Annual Meeting, Division X symposium, Toronto, Ontario. Title: *Teasing apart conflicting signals in deep eukaryote phylogeny.*
- 2007 Review Symposium, Institute for Statistical Mathematics, Tokyo, Japan. Title: *Testing congruence in phylogenomic data sets.*
- 2006 Guest Speaker, Bioinformatics Student Symposium, The Bioinformatics Institute, University of Auckland. Title: *Improving models of protein evolution.*
- 2006 2006 Winter School in Mathematical and Computational Evolutionary Biology, Public Lecture, Queensland Bioscience Precinct, The University of Queensland, Australia. Title: *What are the major groups of eukaryotes and how old are they?*
- 2006 University of Sydney, Dept. of Biological Sciences, Sydney, Australia. Title: *What are the major groups of eukaryotes and how old are they?*
- 2006 University of Melbourne, Dept. of Botany, Melbourne, Australia. Title: *What are the major groups of eukaryotes and how old are they?*
- 2006 Microbial Biodiversity Workshop, Canadian Institute for Advanced Research, Banff, AB. Title: *Patterns of biochemical diversity in anaerobic protists.*
- 2006 International Phylogenomics Conference, Sainte-Adèle, Quebec. Title: *CONCATERPILLAR: A new method for teasing apart conflicting signals in phylogenomic analysis.*

- 2006 The Bioinformatics Institute, University of Auckland, Auckland, N.Z. Title: *CONCATERPILLAR: A new method for teasing apart conflicting signals in phylogenomic analysis.*
- 2005 University of Edinburgh, Institute of Evolutionary Biology, Edinburgh, U.K. Title: *CONCATERPILLAR: A new tool for teasing apart conflicting phylogenetic signals in microbial genomes.*
- 2005 Royal Society of London, Discussion Meeting: “Major Steps in Cell Evolution: palaeontological, molecular and cellular evidence of their timing and global effects”, London, U.K. Title: *Problems of molecular tree reconstruction in relation to the timing of the origins of eukaryotes and their phylogeny.*
- 2005 University of Toronto, Dept. of Medical Genetics, Departmental Seminar. Title: *The role of endosymbiosis and lateral gene transfer in early eukaryote evolution.*
- 2004 The International Prize in Biology Symposium, “Eukaryotic Cells; their origin, evolution and diversity”, Tokyo, Japan (in honour of T. Cavalier-Smith getting the 20th International Prize in Biology awarded by the Emperor of Japan).
- 2004 Juntendo University, Tokyo, Japan. Title: *The origin of mitochondria and related organelles.*
- 2004 Linnean Society of London Meeting, “Evolution of Protozoa and other protists”, London, U.K. Title: *Inferring the deep phylogeny of eukaryotes with multiple gene data sets: Panacean or Panglossian?*
- 2004 Samuel Lunenfeld Research Institute Symposium on “Molecular Evolution”, Mount Sinai Hospital, Toronto. Title: *Lateral gene transfer in anaerobic protists: implications for early eukaryote genome evolution.*
- 2004 NASA Astrobiology Institute/CIAR Program in Evolutionary Biology Workshop on Lateral Gene transfer/Eukaryote Origins, Harrison Hotsprings, BC. Title: *Lateral gene transfer in anaerobic protists: implications for early eukaryote genome evolution.*
- 2004 Society of Protozoologists, Symposium on “Protist Genomics”, Bryant College, Rhode Island.
- 2003 University of Ottawa, Dept. of Biology Seminar, Ottawa, ON. Title: *Understanding conservation and divergence of function in protein evolution.*
- 2002 University of Massachusetts Seminar Series, Amherst, MA. Title: *Early eukaryote phylogeny and evolution.*
- 2002 Whitehead Institute Annual Press Seminar: “Evolution: Driving Change”, MIT, Cambridge, MA. Title: *Early evolution -- from single celled protists to multicellular organisms.*

- 2002 Canadian Society for Microbiology, Saskatoon, SK. Title: *Phylogenomic investigations into early eukaryote evolution.*
- 2002 Canadian Institute for Advanced Research, 20*20 Vision 20th Anniversary Meeting, Victoria, BC. Title: *How do we know about the tree of life?*
- 2001 Canadian Institute for Advanced Research Program in Evolutionary Biology, 13th Annual Meeting, Val David, Quebec. Title: *Much ado about covarions.*
- 2001 Theoretical and Mathematical Biology, Oberwolfach, Germany. Title: *Challenges to the tree of life: covarion shifts, gene conversion and lateral gene transfer.*
- 2000 EMBO Workshop on the Origin of Cells and Organelles, Höör, Sweden: Title: *Deep eukaryotes and deeply conflicting trees.....Are we in too deep?*
- 2000 Department of Biology, Departmental Seminar, Dalhousie University, March 2000. Title: *Early eukaryote phylogeny and evolution.*
- 1999 Canadian Institute for Advanced Research Program in Evolutionary Biology, 13th Annual Meeting, Banff, Alberta. Title: *Covarions and deep eukaryotic phylogeny.*
- 1999 Institute of Geophysics and Planetary Physics, University of California at Los Angeles, LA, job interview seminar. Title: *Reconstructing early eukaryote evolution.*
- 1999 Department of Biology, University of Ottawa, job interview seminar. Title: *Reconstructing early eukaryotic evolution.*
- 1999 Department of Microbiology and Immunology, Montana State University, Bozeman, Montana, job interview seminar. Title: *Reconstructing early eukaryotic evolution.*
- 1999 Department of Biochemistry and Molecular Biology, Dalhousie University, job interview seminar. Title: *Reconstructing early eukaryotic evolution.*
- 1998 Monterey Bay Aquarium Research Institute (MBARI) Seminar Series, Moss Landing, CA. Title: *The evolutionary importance and affinities of 'amitochondriate' protists.*
- 1998 50th Annual German Society for Hygiene and Microbiology Congress, Microbial Evolution and Infection. Plenary lecture, Berlin, Germany. Title: *Reconstructing early events in eukaryotic evolution.*
- 1998 University of Connecticut, Molecular and Cellular Biology Departmental Seminar, Storrs, CT. Title: *Emerging phylogenetic relationships amongst protistan groups: Inferences from protein phylogenies.*

- 1998 Canadian Institute for Advanced Research Program in Evolutionary Biology, 12th Annual Meeting, Mont-Rolland, Quebec. Title: *Relationships between amitochondriate and mitochondriate protists inferred from protein-coding gene phylogenies.*
- 1998 Society for Molecular Biology and Evolution/Society for Systematic Biology joint symposium: Evolutionary Relationships Among Eukaryotes, Vancouver, British Columbia. Title: *Reconstructing early events in eukaryotic evolution.*
- 1998 The Rockefeller University Seminar Series, New York, NY. Title: *Reconstructing early events in eukaryotic evolution.*
- 1998 Woods Hole Oceanographic Institution Biology Department Seminar Series, Woods Hole, MA. Title: *Reconstructing early events in eukaryotic evolution.*
- 1997 Patrick Prize in Biochemistry Seminar, Dalhousie University, Halifax, Nova Scotia
- 1997 Canadian Institute for Advanced Research Program in Evolutionary Biology, 11th Annual Meeting, Chaffey's Locks, Elgin, Ontario. Title: *Changing views on the early course of eukaryotic evolution.*
- 1996 International Congress on Systematic and Evolutionary Biology V (ICSEB-V), Budapest, Hungary. Title: *Protists without mitochondria.*
- 1994 10th International Society of Evolutionary Protistology Meeting (ISEP-10), Dalhousie University, Halifax, Nova Scotia.

OTHER SYMPOSIUM PRESENTATIONS

- 2023 DECO23 – Annual New Zealand Phylogenetics Meeting, Napier, New Zealand, Feb. 8th. Title: *Are site-heterogeneous profile mixture models prone to problems associated with over-parameterization?*
- 2021 Mathematical, Inferential and Computational Phylogenomics (MIC-Phy) (virtual). Title: *Ordering the events in the ancient tree of life with edge length ratio distributions.* (see <https://www.youtube.com/watch?v=l0z6WuMlhqw>)
- 2011 Mechanisms of Protein Evolution, Denver, Colorado. Title: *Fundi, a new tool for detecting functionally divergent sites in protein evolution.*
- 2010 New Zealand Annual Phylogenetics Meeting (DOOM 10), Mt. Ruapehu, New Zealand. Title: *Is a 'vertical' signal in deep prokaryote evolution recoverable given the 'horizontal' noise?*
- 2005 International Society for Evolutionary Protistology XV, Melbourne, Australia. Title: *Mitochondrial relics in anaerobic eukaryotes.*

- 2002 International Society for Evolutionary Protistology XIV, Vancouver, Canada.
Title: Excavates and early eukaryote evolution.
- 2000 International Society for Evolutionary Protistology XIII, Prague, Czech Republic.
Title: Emerging phylogenetic patterns among protistan groups: Inferences from protein phylogenies.
- 1997 East Coast Protistology Conference, University of Rhode Island, Narragansett, Rhode Island. Title: Protists without mitochondria: an update on the status of the Archezoa.

MEDIA INTERVIEWS

- 2021/03/19 -- Interview on our research about a protistan genome that lacks key proteins for replicating its DNA (see Salas-Leiva et al. (2021) **New Scientist**:
<https://www.newscientist.com/article/2272080-microbe-somehow-survives-without-key-proteins-for-replicating>
- 2020/11/18 -- Interview on giant virus genes embedded in algal genomes:
<https://www.science.org/content/article/giant-virus-genomes-discovered-lurking-dna-common-algae>, Interviewed by Elizabeth Pennisi, **Science** magazine.
- 2020/02/28 -- Interview about an animal without a mitochondrial genome:
<https://www.cbc.ca/news/technology/animal-breathe-oxygen-1.5478645>, Interviewed by Emily Chung, **CBC**.
- 2019/11/14 -- Interview about horizontal gene transfer into plants:
<https://www.cbc.ca/news/technology/plants-land-horizontal-gene-transfer-1.5359257>, Interviewed by Emily Chung, **CBC**
- 2017/12/29 -- Interview about dating an ancient eukaryotic fossil:
<http://www.cbc.ca/news/technology/bangiomorpha-fossil-sex-1.4314204>, Interviewed by Emily Chung, **CBC**
- 2016/05/12 -- Interview about our collaborative work on a eukaryote with no mitochondria:
<http://www.cbc.ca/news/technology/mitochondria-eukaryote-1.3579238>, Interviewed by Emily Chung, **CBC**
- 2015/07/14 -- Interview and invited opinion on the discovery of Lokiarchaea, Spektrum der Wissenschaft (German site of Scientific American)
- 2015/05/06 -- Interview and invited opinion on News & Opinion article 'Prokaryotic microbes with eukaryote-like genes found', The Scientist magazine
- 2015/05/01 -- Quoted in article 'My Archaea, My Brother', genomeweb.com (online magazine)

POSTER PRESENTATIONS (1992-2002 ONLY)

- 2002 Sjögren, Å., Andersson, J.O., Horner, D.S., Davis, L.A.M., Murphy, C.A., Thomas, S., Logsdon, J.M. Jr., Ragan, M., Embley, T.M. and **Roger, A.J.** Genomic analyses of the Atlantic salmon parasite *Spironucleus barkhanus*. International Society for Evolutionary Protistology (ISEP-14), Vancouver, BC
- 2002 Silberman, J.D., Simpson, A.G.B., Kulda, J., Cepicka, I., Hampl, V., Johnson, P.J. and **Roger, A.J.** Retortamonad flagellates are closely related to diplomonads – implications for the history of mitochondrial function in eukaryote evolution. NASA Astrobiology Annual General Meeting, San Jose, CA
- 2001 Inagaki, Y., Blouin, C. **Roger, A.J.** and Doolittle, W.F. Evolution and constraint of eukaryotic release factor 1, domain 1. The Ribosome meeting, Cold Spring Harbor, Long Island, NY
- 2001 Silberman, J.D., Roger, A.J., Simpson, A.G.B., Kulda, J., Johnson, P.J. Origin of organelles in eukaryotic cells. NASA Astrobiology Institute/National Institutes of Health Joint Meeting
- 1998 Edgcomb, V., **Roger, A.J.**, Simpson, A.G.B, Silberman, J.D. and Sogin, M.L. Exploring early eukaryotic evolution: Diversity and relationships amongst novel deep-branching lineages. NASA Astrobiology Institute, First General Meeting, San Jose, CA
- 1994 **Roger, A.J.** Sandblom, O., Cavalier-Smith, T. and Doolittle, W.F. Probing protistan phylogeny with elongation factor-1 β . Evolutionary Biology Meeting, Canadian Institute for Advanced Research, Halifax, Nova Scotia
- 1993 **Roger, A.J.**, Cavalier-Smith, T. and Doolittle, W.F. U6 snRNA and TPI genes from early diverging eukaryotes. Evolutionary Biology Meeting, Canadian Institute for Advanced Research, Banff, Alberta
- 1992 **Roger, A.J.**, Cavalier-Smith, T. and Doolittle, W.F. A β -tubulin gene from the microsporidian, *Nosema locustae*. Evolutionary Biology Meeting, Canadian Institute for Advanced Research, Lunenburg, Nova Scotia

BIOINFORMATICS & PHYLOGENETICS SOFTWARE DEVELOPMENT
(DEVELOPED IN THE ROGER LAB AND IS AVAILABLE AS OPEN SOURCE)
 (available at <http://rogerlab.biochem.dal.ca/Software/Software.htm>)

We are now helping with implementation and testing of new phylogenetic models in IQ-TREE

LIKEWIND – a suite of 3 Perl programs that work in conjunction with PAUP* to perform a maximum likelihood sliding window analysis to detect recombinant regions in genes (described in Archibald and Roger (2002) *J. Mol. Evol.* 55:232-245).

PUZZLEBOOT – a shell script program to perform maximum likelihood distance bootstrapping in conjunction with Strimmer and von Haeseler’s TREE-PUZZLE program (written by M. Holder and A.J. Roger).

COVAR – a shell script program that, in conjunction with the program TREE-PUZZLE, performs parametric bootstrap tests for changes in site rate distributions between two ‘subtrees’ in a larger phylogeny (described in Susko *et al.* (2002) *Mol. Biol. Evol.* 19:1514-1523).

ELW – a set of Perl programs that, used in conjunction with PHYLIP or PAUP* programs, implements the Strimmer and Rambaut’s method of ‘expected likelihood weights’ for determining confidence intervals for trees (written by A.J. Roger).

COVSEARCH – a C++ (developed with D. Butt, J. Murdoch, C. Blouin) for maximum likelihood phylogenetic tree inference from protein sequence data. Novel options in this application include probabilistic heuristic tree searching algorithms, “median” maximum likelihood analysis (to control the influence of sites where the models is misspecified on the resulting inference), multiple gene phylogeny (allowing each branches for each gene to be separately optimized) and a parallelized MPI version.

PROCOV – a significantly modified version of Galtier’s C-program NHML maximum likelihood program that implements Galtier’s, Huelsenbeck’s and a General covarion model of protein evolution (written by H-C Wang and M. Spencer). For a user-defined tree and amino acid dataset, the program will estimate branch lengths and all model parameters.

CONCATERPILLAR – a method for assessing phylogenetic congruence between genes/proteins with a hierarchical series of likelihood ratio tests.

TRAINING OF STUDENTS, POSTDOCS, AND OTHER RESEARCH TRAINEES

Undergraduate Students

Geoff Morris	NSERC Summer Student (May 2000-August 2000)
Jamie Kendall	B.Sc. Summer Student (May 2001-August 2001)
Erin MacQuarrie	B.Sc. Honours Student, Summer Student (Sept. 2001-August 2002)
Robyn Elliot	B.Sc. Honours Student (Sept. 2002-April 2003)
Erin Gill	B.Sc. Honours Student, Summer Student (May 2002-April 2005)
Stewart Sarchfield	NSERC Summer Student (May 2002-August 2002)
Karen Li	NSERC Summer Student (May 2005-August 2005)

<i>Julia Tufts</i>	B.Sc. Summer Student (May 2005-07-August 2005-07)
<i>Isabelle Nadeau</i>	B. Comp. Sci. Summer Student (May 2006-August 2006)
<i>Courtney Stairs</i>	B.Sc. Summer Student (May 2007-August 2007/2008); B.Sc. Honours Student (September 2008-April 2009)
<i>Peter Walker</i>	B.Sc. Honours Student (September 2008-April 2009)
<i>Grant Stevens</i>	B.Sc. Honours Student (September 2009-April 2010); Summer Student/Technician (May-December 2010)
<i>Cornelis Mutsaers</i>	B.Sc. Honours Student (September 2013-April 2014)
<i>Léa Lincker</i>	B. Eng. Summer Student (4 th year Honours) (May-July 2016)
<i>Mary (Molly) Hayes</i>	NSERC Undergraduate Summer Student (May-August 2016)
<i>Katherina (Katya) Radan</i>	B.Sc. Summer Student (May-August 2016)
<i>Dandan Zhao</i>	NSERC Undergraduate Summer Student (May-August 2017)
<i>Kate Glennon</i>	B.Sc. Summer Student (May-August 2017); Honours Student (Sept. 2017 – April 2018)
<i>Shelby Williams</i>	B.Sc. Summer Student (May-August 2017); Honours Student (Sept. 2017 – April 2018); Summer Student (May-August 2018)
<i>Matthew Pelletier</i>	B.Sc. Biochem/Mol. Biol. Summer Student (May-August 2022); part-time student Sept. 2022-April 2023
<i>Jason Shao</i>	B.Sc. Biochem/Mol. Biol. Summer Student (May-August 2022); part-time student Sept. 2022-present
<i>Anshita Madaan</i>	Biochemistry and Molecular Biology student (May 2023-Dec. 2024)
<i>Naomi MacMillan</i>	B.Sc. Biochem/Mol. Biol. Experiential Learning Student (BIOC 3620: Jan.-April 2023). NSERC summer student (May 2023-Aug 2023). Honours student (Sept. 2023-April 2024)

Undergraduate Co-op Students

<i>Davin Butt</i>	Computer Science Undergraduate Co-op Student (May 2002 – April 2003)
<i>Jennifer Murdoch</i>	Computer Science Undergraduate Co-op Student (Jan. - April 2003)
<i>Tomas Hofmann</i>	Computer Science Undergraduate Co-op Student (May – Aug. 2006)
<i>Andrew Evans</i>	Nanotechnology Undergraduate Co-op Student (Jan. - April 2008)
<i>Anshita Madaan</i>	Biochemistry and Molecular Biology Co-op Student (May 2022-April 2023)

Graduate Students

<i>Yunfeng Shan</i>	Computer Science Masters Student (co-supervised with E. Milios, Computer Science; 2001-September 2003)
<i>Wynne Lok</i>	Computer Science Masters Student (co-supervised with C. Blouin; May 2002 - 2004)
<i>Jessica Leigh</i>	Biochemistry and Molecular Biology PhD Student (September 2003 – December 2008)
<i>Laura Hug</i>	Biochemistry and Molecular Biology M.Sc. Student (August 2005 – August 2007)

<i>Martin Kolisko</i>	Biology PhD student (co-supervised with A. Simpson; September 2005 – October 2011)
<i>Daniel Gaston</i>	Biochemistry and Molecular Biology PhD Student (August 2006 – February 2012)
<i>Liwen Zou</i>	Mathematics & Statistics PhD student (co-supervised with E. Susko and C. Field; September 2006 – August 2011)
<i>Michelle Leger</i>	Biochemistry and Molecular Biology PhD Student (January 2008 – July 2015)
<i>Javier Alfaro</i>	Biochemistry and Molecular Biology Master's Student (September 2009 – September 2012)
<i>Courtney Stairs</i>	Biochemistry and Molecular Biology Ph.D. Student (September 2009 – November 2014)
<i>Tommy Harding</i>	Biochemistry and Molecular Biology Ph.D. Student (co-supervised with A. Simpson, Biology; September 2010 – December 2016)
<i>Susan Sharpe</i>	Biochemistry and Molecular Biology Master's Student (January 2012 – November 2015)
<i>Jiwon Yang</i>	Biochemistry and Molecular Biology Master's Student (co-supervised with A. Simpson, Biology; Sept. 2014 – August 2016)
<i>Name Withheld</i>	Computer Science Master's Student (co-supervised with R. Beiko; January 2015 – October 2016) – not completed
<i>Sergio Munoz-Gomez</i>	Biochemistry and Molecular Biology Ph.D. student (co-supervised with C. Slamovits; April 2015 – December 2018)
<i>Sarah Shah</i>	Biochemistry and Molecular Biology Master's student (September 2016 – August 2018)
<i>Dandan Zhao</i>	Biochemistry and Molecular Biology Master's student (September 2017 – April 2020)
<i>Shannon Sibbald</i>	Biochemistry and Molecular Biology Ph.D. student (co-supervised with J. Archibald; January 2018+)
<i>Shelby Williams</i>	Biochemistry and Molecular Biology PhD student (September 2018+)
<i>Greg Seaton</i>	Biochemistry and Molecular Biology PhD student (September 2018+)
<i>Kelsey Williamson</i>	Biochemistry and Molecular Biology PhD student (September 2019+)
<i>Tugba Nur Atalay</i>	Biochemistry and Molecular Biology M.Sc. student (Sept 2023+)
<i>MinSang Cho</i>	Biochemistry and Molecular Biology M.Sc. student (Jan 2024 +)

Postdoctoral Fellows (Current)

<i>Ryo Harada</i>	May 1 st 2024 - present
<i>Charley McCarthy</i>	August 2021 - present
<i>Lucie Gallot-Lavallée</i>	2018 – present (co-supervised with John Archibald)

Postdoctoral Fellows (Former)

<i>Joran Martijn</i>	August 2019 – December 2023 -current position: Research Associate in Roger lab
<i>Hector Baños</i>	April 2021 – August 2023 (co-supervised with E. Susko) -current position: Assistant Professor, U. Calif. San Bernardino
<i>Sergio Munoz-Gomez</i>	January 2019 – August 2019 (co-supervised with C. Slamovits)

- Bruce Curtis* -**current position: Assistant Professor, Purdue University**
November 2012 – December 2018 (co-supervised with J. Archibald, Biochem.) – **current position: retired**
- Jon Jerlström-Hultqvist* September 2016 – August 2018
-**current position: Research Associate, A.J. Roger lab**
- Tommy Harding* January 2017 – December 2017
-**current position: Forensic Biologist, Laboratoire de sciences judiciaires et de médecine légale (LSJML), Montréal**
- Sebastian Hess* October 2015 – July 2018 (co-supervised with A. Simpson, Biology)
-**current position: Assistant Professor, University of Cologne**
- Michelle Leger* September 2015 – September 2016
-**current position: Postdoctoral Fellow, University of Barcelona**
- Courtney Stairs* January 2015 – April 2016
-**current position: Assistant Professor, Univ. Lund, Sweden**
- Dayana Salas-Leiva* November 2014 – December 2015 (co-supervised with A. Simpson)
-**current position: postdoc at Cambridge University, UK**
- Laura Eme* June 2011 – December 2016
-**current position: ERC-New Investigator, CNRS, Université Paris-Saclay**
- Eleni Gentekaki* January 2010 – April 2014
-**current position: Lecturer, Mae Fah Luang University, Thailand**
- Matthew Brown* June 2010 – May 2013
-**current position: Professor, Mississippi State University**
- Martin Kolisko* November 2011 – April 2013
-**current position: Associate Professor, Institute of Parasitology, Czech Republic**
- Ryan Gawryluk* October 2011 – December 2012
-**current position: Assistant Professor, University of Victoria, BC**
- Anastasios Tsaousis* January 2008 – January 2012
-**current position: Lecturer, University of Kent**
- Huaichun Wang* Dec. 2004 – July 2014 (co-supervised with E. Susko, Math/Stats)
-**current position: Bioinformatician, N.S. Health Authority**
- Ivica Tamas* May 2007 – August 2008
-**current position: Researcher at University of Calgary**
- Sara Diaz Triviño* February 2006 – December 2007
-**current position: Postdoctoral Researcher, Utrecht University**
- Vladimir Hampl* January 2006 – December 2007
-**current position: Associate Professor, Charles University**
- Alexandra Stechmann* January 2004 – July 2009
-**current position: Teaching Instructor, London, U.K.**
- Gabino Sanchez-Perez* November 2004 – December 2007, supported by Ministry of Education Fellowship (Spain)
-**current position: Researcher, Wageningen University**
- Inaki Ruiz-Trillo* December 2003 – December 2006, supported by EMBO fellowship
-**current position: Professor, Universitat de Barcelona**

<i>Maria Barbera Llorca</i>	May 2004 – December 2006, supported by CIHR grant - current position: High School Teacher in Tarragona, Spain
<i>Matthew Spencer</i>	May 2004 – March 2006, supported by Genome Atlantic (co-supervised with E. Susko in Math/Stats) -current position: Lecturer, University of Liverpool, UK
<i>Shirley Pepke</i>	September 2003 – March 2006, supported by Genome Atlantic (co-supervised with C. Blouin in Math/Stats) -current position: Research Consultant at Lyrid LLC, Los Angeles
<i>Manu Baumgartner</i>	January 2003 – January 2004, supported by Genome Atlantic -current position: Researcher, Institute of Toxicology, Germany
<i>Alastair Simpson</i>	October 2000 – July 2003, supported by CIHR Postdoctoral Fellowship -current position: Professor, Dalhousie University
<i>Jan Andersson</i>	February 2000 – February 2003, supported by Postdoctoral fellowship from the Wenner-Gren Foundation (Sweden) -current position: Associate Professor, Uppsala University, Sweden
<i>Yuji Inagaki</i>	July 1, 2000 – July 2005, supported by postdoctoral funding from CIAR, and Genome Atlantic -current position: Lecturer, Tsukuba University, Japan
<i>Christian Blouin</i>	April 1, 2001 – July 2003, supported on NSERC Genomics Grant -current position: Professor, Dalhousie University
<i>John Archibald</i>	June 1, 2001- Oct. 31, 2001 supported on NSERC Operating Grant -current position: Professor, Dalhousie University

Research Associates

<i>Joran Martijn</i>	February 1 st , 2024 – present
<i>Katherine Dunn</i>	October 1 st , 2023 – present (co-supervised with J. Archibald, Biochem.)
<i>Bruce Curtis</i>	January 1, 2019 – Dec. 2022 (co-supervised with J. Archibald, Biochem.)
<i>Dayana Salas Leiva</i>	January 1, 2016 – September 2021
<i>Jon Jerlstrom-Hultqvist</i>	September 1, 2018 – January 2020
<i>Jeremy Wideman</i>	April 1, 2018 – August 2019 (co-supervised with W.F. Doolittle, Biochem.)
<i>Huaichun Wang</i>	August 1, 2015 – April 2019 (co-supervised with E. Susko, Math/Stats)
<i>Jeff Silberman</i>	February 1, 2000 – July 2004 (co-supervised with collaborator Dr. Patricia Johnson, UCLA), supported by postdoctoral funding from the NASA Astrobiology Program at UCLA in Los Angeles

Visiting Students / Researchers

<i>Tengteng Zhang</i>	September 2019 – August 2021, Visiting Ph.D. student from Ocean University of China
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<i>Adriana Marcela Gelvez</i>	May-October 2019, Visiting Ph.D. student from Universidad del Rosario, Bogota, Colombia
<i>Dr. Zhenzhen Yi</i>	September 2018 – August 2019, Visiting Professor from South China Normal University
<i>Paulo Hofstatter</i>	July 2017 – July 2018, Visiting Ph.D. student from University of Sao Paulo, Brazil
<i>Anna Busch</i>	September – December 2016, Visiting Master's student from University of Bonn, Germany
<i>Lee O'Brien Andersen</i>	July – September 2015, Visiting Ph.D. student from Statens Serum Institute, Copenhagen
<i>Vojtech Zarsky</i>	June – August 2015, Visiting Ph.D. student from Dr. Ivan Cepicka's lab, Charles University, Prague, Czech Republic
<i>Dr. Bernard Lemire</i>	March - August 2015, Visiting Sabbatical Professor from University of Alberta
<i>Tom Williams</i>	January – March 2015, Visiting Ph.D. student from Dr. Martin Embley's lab, Newcastle University, UK
<i>Dr. Ryoma Kamikawa</i>	September 2014 – September 2015, Visiting researcher from University of Tsukuba, Japan
<i>Lukas Novak</i>	July-October 2014, Visiting Ph.D. student from Dr. Ivan Cepicka's lab, Charles University, Prague, Czech Republic
<i>Tomas Panek</i>	July-October 2013, Visiting Ph.D. student from Dr. Ivan Cepicka's lab, Charles University, Prague, Czech Republic
<i>Eliska Ptackova</i>	October-November 2012, Visiting Ph.D. student from Dr. Ivan Cepicka's lab, Charles University, Prague, Czech Republic
<i>Guifre Torruella</i>	September-December 2012, Visiting Ph.D. student from Dr. Inaki Ruiz-Trillo's lab (collaborator), Institut de Biologia Evolutiva, Barcelona, Spain
<i>Dr. Ryoma Kamikawa</i>	July 2012, Visiting researcher from University of Tsukuba, Japan
<i>Dr. Kiyotaka Takishita</i>	April 2009-March 2010, Visiting researcher from JAMSTEC, Japan
<i>Dr. Tetsuo Hashimoto</i>	March 2002-February 2003, Visiting Sabbatical researcher from the Institute for Statistical Mathematics, Tokyo, Japan
<i>Ivan Cepicka</i>	July-October 2003, Visiting Ph.D. student from Dr. Jaroslav Flegr's lab (collaborator), Dept. of Parasitology, Charles University, Prague, Czech Republic
<i>Martin Kolisko</i>	July-October 2004, Visiting M.Sc. student from Dr. Jaroslav Flegr's lab (collaborator), Dept. of Parasitology, Charles University, Prague, Czech Republic

Technicians/Bioinformaticians

<i>Lesley A. Davis</i>	July, 2000 - July, 2003 [lab manager]
<i>Åsa Sjögren</i>	April 16, 2001 – February 1, 2003 [technician]
<i>Jacqueline de Mestral</i>	Aug. 18, 2003 – June 30, 2015 [lab manager]
<i>Marlena Dlutek</i>	July 1, 2015 – present [lab manager]
<i>Dandan Zhao</i>	2018 – present [bioinformatician]
<i>Justin Daneau</i>	June 2022-April 2023 [programmer]

DEPARTMENTAL/UNIVERSITY ADMINISTRATIVE DUTIES

2024	Member, Graduate Advisory Committee
2023 – 2024	Academic Planning Committee (APC: Dept. Biochem/Mol. Biol)
2022	Chair, Promotion and Tenure Committee
2022	Member of Protein Science Search Committee (Dept. Biochem/Mol. Biol)
2017 – 2022	Member, Steering Committee, Institute for Comparative Genomics (formerly CGEB)
2014 – 2021	Member, Graduate Advisory Committee (GAC)
2006, 2012, 2018	Member or Chair, Promotions and Tenure Committee
2009, 2012, 2022, 2023	Academic Planning Committee (APC)
2009 – 2013	Member, Space and Facilities Committee
2002 – 2003	Chair of informal committee for Departmental website

DALHOUSIE FACULTY OF MEDICINE DUTIES

2009 – 2011	Member, Senate Computing & Information Technology Planning Committee
2006 – 2010	Chair, Faculty of Medicine Safety and Environmental Hazards Committee
2004 – 2006	Member, Faculty of Medicine Safety and Environmental Hazards Committee
2002	Judge, Graduate Research Day (May 7 th)

MANUSCRIPT REVIEWER

Archiv für Protistenkunde
Biochemica et Biophysica Acta
Biological Bulletin
Current Biology
Current Genetics
Journal of Eukaryotic Microbiology
Journal of Experimental Zoology
Journal of Molecular Evolution
International Journal of Systematic and Evolutionary Microbiology
Molecular Biology and Evolution
Molecular Microbiology
Molecular Phylogenetics and Evolution
Nature
Nature Ecology and Evolution
Nature Microbiology
Nature Reviews Genetics
Plant Molecular Biology
Proceedings of the National Academy of Sciences, USA
Protist
Science

NATIONAL/INTERNATIONAL REVIEWER

2002-2005, 2017, 2020, 2023 NSERC Grant reviewer

2000 – 2008 National Science Foundation (USA), Grant reviewer
 2003, 2007 Canadian Institutes of Health Research, Grant reviewer
 2003 Canada Foundation for Innovation, Grant reviewer

PROFESSIONAL SOCIETY MEMBERSHIPS

2006-current The Society for Molecular Biology and Evolution
 1998-current The Society of Systematic Biologists
 1993-current The Society of Protozoologists
 1993-current International Society for Evolutionary Protistology

INVITED JOURNAL EDITORIAL DUTIES

2013-2015 **Editorial Board Member**, *Eukaryotic Cell*
 2006-2015 **Board of Editors**, *Molecular Biology and Evolution*
 2006-current **Editorial Board Member**, *Systematic Biology*
 2005-2014 **Editorial Board Member**, *Journal of Experimental Zoology, Series B*
 2003-2006 **Associate Editor** of the journal *GENE*
 2001-current **Board of Reviewers**, *Journal of Eukaryotic Microbiology*

GRANT/INSTITUTIONAL REVIEW PANELS

2014 **External Review Committee Member**, Center for Computational Sciences, University of Tsukuba, Japan
 2008 **Grant Reviewer/Panel member** for the National Science Foundation's "Assembling the Tree of Life" Program
 2007 **International External Reviewer** for the Molecular Evolution group at the Institute for Statistical Mathematics, Tokyo, Japan
 2007 **Grant Panelist** for Canadian Institutes of Health Research (CIHR), New Investigator B Competition
 2005 **Tenure and Review Committee**, Woods Hole Oceanographic Institute, USA

OTHER NATIONAL/INTERNATIONAL SERVICE

2013-2014 **President**, International Society for Evolutionary Protistology
 2010-2012 **President-Elect**, International Society for Evolutionary Protistology
 2000-2004 **Membership Director**, International Society for Evolutionary Protistology
 2003 **Participant in Genome Canada/Environment Canada Workshop** on Environmental and Comparative Genomics (workshop to plan the future of funding in genomic research in Canada)
 2002 **Elected member of Nominating Committee**, Society of Protozoologists
 2001-2006 **Member of Subcommittee** on 'Bioinformatics' for the Priority and Planning Committee of the CIHR Institute of Genetics
 2001 **Participant in CIHR Institute of Genetics/Genome Canada sponsored workshop** on 'Bioinformatics' (workshop to plan the future of funding in this area of research in Canada)