

CURRICULUM VITAE
University of Pittsburgh
School of Medicine

BIOGRAPHICAL

Name:	Anne-Ruxandra Carvunis		
Home Address:	5922 Howe Street, Pittsburgh PA	Birth Place:	France
Home Phone:	6175951746	Citizenship:	French
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EDUCATION and TRAINING

UNDERGRADUATE:

1999-2001	Université Paris 6 Paris, France Classe préparatoire Lycée Sainte Geneviève Versailles, France	“Diplôme d’Etudes Universitaires Générales”	2001	Life Sciences
2001-2004	École Normale Supérieure/ Université Paris 6 Paris, France	“Magistère” (BSc and Masters equivalent)	2004	Biology/Biochemistry
July-Sept. 2002	Oxford University Oxford, UK	Summer intern	Advisor:	John Parrington
April-July 2003	Mount Sinai Hospital New York, NY	BSc Thesis Student	Advisor:	George Huntley

GRADUATE:

Sept. 2003 – Aug. 2004	Collège de France Paris, France	Masters Student	Advisor:	Francois Tronche
2004 – 2005	Université Paris 7 Paris, France	Masters degree	2005	Interdisciplinary Approaches to Life Sciences
Oct. – Dec. 2004	Ecole Polytechnique Paris, France	Rotation Student	Advisor:	Clémence Magnien

Jan. – April 2005	University René Descartes Paris, France	Rotation Student	Advisor: Serge Charpak
May – July 2005	École Normale Supérieure Lyon, France	Rotation student	Advisor: Alain Arneodo
Nov. 2005 – Jan. 2006	Institut des Hautes Études Scientifiques Bures-sur-Yvettes, France	Research Assistant	Advisor: Arndt Benecke
Feb. – June 2006	Center for Cancer Systems Biology Dana- Farber Cancer Institute Harvard Medical School Boston, MA	Research Assistant	Advisor: Marc Vidal
2006 – Jan. 2011	Université Joseph Fourier Grenoble, France	Ph.D.	2011 Bioinformatics
Sept. 2006 – Jan. 2011	Center for Cancer Systems Biology Dana- Farber Cancer Institute Harvard Medical School Boston, MA	Ph.D. candidate	Advisor: Marc Vidal

POSTGRADUATE:

Jan. 2011 – Sept. 2012	Center for Cancer Systems Biology Harvard Medical School Boston, MA	Postdoctoral Fellow	Advisor: Marc Vidal
Nov. 2012 – Oct. 2016	University of California, San Diego San Diego, CA	Postdoctoral Fellow	Advisor: Trey Ideker
Summer 2013	Cold Spring Harbor Laboratory Cold Spring Harbor, NY		Yeast Genetics and Genomic Course
March, 2016	Cold Spring Harbor Laboratory Cold Spring Harbor, NY		Leadership in Bioscience Workshop

APPOINTMENTS AND POSITIONS

Jan. 2017 – present	Department of Computational and Systems Biology University of Pittsburgh School of Medicine Pittsburgh, PA 15260	Assistant Professor
Oct. 2016 – Dec. 2016	Department of Computational and Systems Biology University of Pittsburgh School of Medicine Pittsburgh, PA 15260	Visiting Assistant Professor

MEMBERSHIPS IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

Member of Society for Molecular Biology and Evolution since 2017

HONORS

Trailblazer Award, Ladies Hospital Aid Society	2018
Searle Scholar	2018
Best Flash Talk, San Diego Center for Systems Biology retreat	2016
Postgraduate Student Travel Awardee, Society for Molecular Biology and Evolution	2014
NIH Pathway to Independence Awardee (K99/R00) since:	2014
Medal of Université Joseph Fourier for honorable doctoral work of:	2006-2010
L'Oréal France UNESCO award for Women in Science	2009
Most innovative Poster, Dana-Farber Cancer Institute Cancer Biology Dept. retreat	2009
Admitted in French agronomical engineering schools (4 th in national selective exam)	2001

PUBLICATIONS

ORIGINAL RESEARCH:

1. Domazet-Lošo T*, **Carvunis AR***#, Albà MM, Šestak MS, Bakarić R, Neme R, Tautz D#: No evidence for phylostratigraphic bias impacting inferences on patterns of gene emergence and evolution. *MBE* (2017). *=**co-first authors.** #=**co-corresponding authors.**
2. Yazaki J, Galli M, Kim AY, Nito K, Aleman F, Chang KN, **Carvunis AR**, Quan R, Nguyen H, Song L, Alvarez JM, Huang SC, Chen H, Ramachandran N, Altmann S, Gutiérrez RA, Hill DE, Schroeder JI, Chory J, LaBaer J, Vidal M, Braun P, Ecker JR: Mapping transcription factor interactome networks using HaloTag protein arrays. *PNAS* (2016).
3. **Carvunis AR***, Wang T*, Skola D*, Yu A, Chen J, Kreisberg J, Ideker T: Evidence for a common evolutionary rate in metazoan transcriptional networks. *eLife* (2015). *=**co-first authors.**
4. Rolland T*, Tasan M*, Charlotheaux B*, Pevzner SJ*, Zhong Q*, Sahni N*, Yi S*, Lemmens I, Fontanillo C, Mosca R, Kamburov A, Ghiassian S, Yang X, Ghamsari L, Balcha D, Begg BE, Braun P, Brehme M, Broly MP, **Carvunis AR**, Convery-Zupan D, Corominas R, Hardy MF, Coulombe-Huntington J, Dann E, Dreze M, Dricot A, Fan C, Franzosa E, Gebreab F, Gutierrez BJ, Jin M, Kang S, Kiros R, Lin GN, Luck K, MacWilliams A, Menche J, Murray RR, Palagi A, Poulin MM, Rambout X, Rasla J, Reichert P, Romero V, Ruyssinck E, Sahalie J, Scholz A, Shah AA, Sharma A, Shen Y, Spirohn K, Tam S, Tejada AO, Trigg SA, Twizere JC, Vega K, Walsh J, Cusick ME, Xia Y, Barabási AL, Iakoucheva LM, Aloy

- P, De Las Rivas J, Tavernier J, Calderwood MA, Hill DE, Hao T, Roth FP, Vidal M: A proteome-scale map of the Human interactome network. *Cell* (2014).
5. Srivas R*, Costelloe T*, **Carvunis AR**, Sarkar S, Malta E, Sun SM, Pool M, Licon K, van Welsem T, van Leeuwen F, McHugh PJ, van Attikum H, Ideker T: A UV-induced genetic network links the RSC complex to nucleotide excision repair and shows dose-dependent rewiring. *Cell Reports* (2013).
 6. **Carvunis AR**, Rolland T, Wapinski I, Calderwood MA, Yildirim MA, Simonis N, Charlotheaux B, Hidalgo CA, Barbette J, Santhanam B, Brar GA, Weissman JS, Regev A, Thierry-Mieg N, Cusick ME, Vidal M: Proto-genes and de novo gene birth. *Nature* (2012).
 7. Rozenblatt-Rosen O*, Deo RC*, Megha Padi*, Adelmant G*, Calderwood MA, Rolland T, Grace M, Dricot A, Askenazi M, Tavares T, Pevzner S, Abderazzaq F, Byrdsong D, Chen A, Cheng J, Correll M, Duarte M, Fan C, Ficarro SB, Franchi R, Garg B, Gulbahce N, Holthaus A, James R, Korkhin A, Litovchick L, Mar JC, Pak TR, Rabello S, Rubio R, Shen Y, Singh S, Spangle JM, Tasan M, Wanamaker S, Webber JT, **Carvunis AR**, Roecklein-Canfield J, Johannsen E, Barabási AL, Beroukhim R, Kieff E, Cusick ME, Hao T, Hill DE, Mürger K, Marto JA, Quackenbush J, Roth FR, DeCaprio JA, Vidal M: Interpreting cancer genomes using systematic host perturbations by tumour virus proteins. *Nature* (2012).
 8. Feinbaum RL, Urbach JM, Liberati NT, Djonovic S, Adonizio A, **Carvunis AR**, Ausubel FM: Genome-Wide Identification of *Pseudomonas aeruginosa* virulence-related genes using a *Caenorhabditis elegans* infection model. *PLoS Pathogens* (2012).
 9. Mukhtar MS*, **Carvunis AR***, Dreze M*, Epple P*, Steinbrener J, Moore J, Tasan M, Galli M, Hao T, Nishimura MT, Pevzner SJ, Donovan SE, Ghamsari L, Balaji S, Romero V, Poulin MM, Gebreab F, Gutierrez BJ, Tam S, Harbort C, McDonald N, Gai L, Chen H, EU Effectoromics Consortium, Roth FP, Ecker JR, Vidal M, Beynon J, Braun P, Dangl J: Independently Evolved Virulence Effectors Converge onto Cellular Hubs in a Plant Immune System Network. *Science* (2011). ***=co-first authors.**
 10. *Arabidopsis* Interactome Mapping Consortium*: Evidence for Network Evolution in an *Arabidopsis* Interactome Map. *Science* (2011) (Dreze M*, **Carvunis AR***, Charlotheaux B*, Galli M*, Pevzner S*, Tasan M ; ***=co-first authors**).
 11. Simonis N*, Rual JF*, **Carvunis AR***, Tasan M*, Lemmens I*, Hirozane-Kishikawa T, Hao T, Sahalie JM, Venkatesan K, Gebreab F, Cevik S, Klitgord N, Fan C, Braun P, Li N, Ayivi-Guedehoussou N, Dann E, Bertin N, Szeto D, Dricot A, Yildirim MA, Lin C, de Smet AS, Kao HL, Simon C, Smolyar A, Ahn JS, Tewari M, Boxem M, Milstein S, Yu H, Dreze M, Vandenhoute J, Gunsalus KC, Cusick ME, Hill DE, Tavernier J, Roth FP, Vidal M: Empirically controlled mapping of the *Caenorhabditis elegans* protein-protein interactome network. *Nature Methods* (2009). ***=co-first authors.**
 12. Cusick ME*, Yu H*, Smolyar A, Venkatesan K, **Carvunis AR**, Simonis N, Rual JF, Borick H, Braun P, Dreze M, Vandenhoute J, Galli M, Yazaki J, Hill DE, Ecker JR, Roth FP, Vidal M: Literature-curated protein interaction datasets. *Nature Methods* (2009).
 13. Li QR*, **Carvunis AR***, Yu H*, Han JD*, Zhong Q, Simonis N, Tam S, Hao T, Klitgord NJ, Dupuy D, Mou D, Wapinski I, Regev A, Hill DE, Cusick ME, Vidal M: Revisiting the *Saccharomyces cerevisiae* predicted ORFeome. *Genome Research* (2008). ***=co-first authors.**
 14. Dupuy D*, Bertin N*, Hidalgo CA*, Venkatesan K, Tu D, Lee D, Rosenberg J, Svrikapa N, Blanc A, Carnec A, **Carvunis AR**, Pulak R, Shingles J, Reece-Hoyes J, Hunt-Newbury R, Viveiros R, Mohler WA, Tasan M, Roth FP, Le Peuch C, Hope IA, Johnsen R, Moerman DG, Barabási AL, Baillie D, Vidal M: Genome-scale analysis of in vivo spatiotemporal promoter activity in *Caenorhabditis elegans*. *Nature Biotechnology* (2007).
 15. **Carvunis AR**, Latapy M, Lesne A, Magnien C, Pezard L: Dynamics of three-state excitable units on Poisson versus power-law random networks. *Physica A* (2006).

REVIEWS, OPINIONS, BOOK CHAPTERS AND INVITED PUBLICATIONS:

1. Ernst P, **Carvunis AR**: Of mice, men and immunity: a case for evolutionary systems biology. *Nat. Rev. Immun.* (2018).
2. **Carvunis AR**, Ideker T: Siri of the Cell – what biology could learn from the iPhone. *Cell* (2014).
3. Mitra K*, **Carvunis AR***, Ramesh SK, Ideker T: Integrative approaches for finding modular structure in biological networks. *Nature Reviews Genetics* (2013). ***=co-first authors.**
4. **Carvunis AR**, Roth FP, Calderwood MA, Cusick ME, Superti-Furga G, Vidal M: Interactome networks, in *Handbook of Systems Biology* (2012).
5. **Carvunis AR**, Dreze M: Les facteurs de virulence ciblent des protéines clés de l'interactome de l'hôte (Virulence effectors target key proteins of interactome networks of host plant cells). *Médecine/Sciences*. (2012).
6. **Carvunis AR**, Gómez E, Thierry-Mieg N, Trilling L, Vidal M: Biologie systémique: des concepts d'hier aux découvertes de demain (Systems biology: from yesterday's concepts to tomorrow's discoveries). *Médecine/Sciences* (2009).

PROFESSIONAL ACTIVITIES

TEACHING:

Lectures:

- DiscoBio program at the University of Pittsburgh, July 2018: Genomics and Evolutionary Biology. High school level.
- TecBio program at the University of Pittsburgh, May 2018: Genomics and Evolutionary Biology. Undergraduate level.
- TecBio program at the University of Pittsburgh, July 2017: Example of a non-linear academic career path. Introducing a diverse group of undergraduate students to the trials and tribulations of an early academic career, including life-changing surprise discoveries.
- Simmons College, Boston, MA, USA, Dec. 2013 and 2014: My career path as a Network Biologist. Auto-biographical lecture aimed at introducing female freshmen to Bioinformatics. This presentation was elected best of 2013 (most informative, most relatable) by the students.
- Café des sciences de Boston, Boston, MA, USA, Janu. 2010: Interactomes et Biologie Systémique, with Drs Vidal, Charloteaux & Dreze. Public lecture in French language aimed at introducing the francophone community of Boston to systems biology.
- Simmons College, Boston, MA, USA, Nov. 2009: *De novo* gene birth in *S. cerevisiae*. Auto- biographical and scientific lecture aimed at illustrating the birth and development of a graduate research project to female seniors in Biology.
- Center for Complex Network Research joint seminar, Boston, MA, USA, October 2009: What biology can we learn by observing large scale experimentally generated protein interactions networks? Introductory biology lecture for physicists.

Student mentoring:

Nov. 2018	Carly Houghton University of Pittsburgh	Ph.D. rotation student Joint CMU-Pitt Ph.D. program in Computational Biology
Oct. 2018	Tyler Lovelace University of Pittsburgh	Ph.D. rotation student Joint CMU-Pitt Ph.D. program in Computational Biology
May – July 2018	BaDoi Phan University of Pittsburgh	M.D./Ph.D. rotation student MSTP program
May – July 2018	Thomas Dougherty Harvey Mudd College	Undergraduate Mathematics TecBio summer training program
May – July 2018	Dominique Cantave Harvard University	Undergraduate Mathematics TecBio summer training program
Nov. 2017 – present	Omer Acar	Ph.D. candidate

Oct. 2017	University of Pittsburgh Trevor Frisby	Joint CMU-Pitt Ph.D. program in Computational Biology Ph.D. rotation student	
Aug.– Sept. 2017	University of Pittsburgh Feng Shan	Joint CMU-Pitt Ph.D. program in Computational Biology Ph.D. rotation student	
Aug. 2017 – present	University of Pittsburgh Saurin Parikh	Integrative Systems Biology program Ph.D. candidate Integrative Systems Biology program (previously Masters student Bioengineering)	
Aug. – Sept. 2017 and June – Aug. 2018	University of Pittsburgh Selin Sevgi	Undergraduate Molecular Biology and Genetics	
July 2017 – present	Koc Univerity (Turkey) John Iannota	Pitt Health Sciences Research Training Program Undergraduate Molecular Biology	
June – Aug. 2017	University of Pittsburgh Kate Karlovitch	informal training Undergraduate Chemistry	
May 2017	Ohio University Sharif Abdelbaky	informal training Undergraduate Computer Science	
March – Sept. 2017	University of Pittsburgh Neha Sodhi	informal training Undergraduate Bioengineering	
March 2017	UCSD Haoyun Lei	Ph.D. rotation student	
Feb. – March 2017	University of Pittsburgh Ryan Hausler	Undergraduate Bioinformatics	
Jan. – Dec. 2016	University of Pittsburgh Ailin Zhang	Undergraduate Biochemistry	Now Ph.D. student at
Jan. – Oct. 2016	UCSD Manuel Michaca	Undergraduate Biochemistry	Now research technician at UCSD
Jan. 2015 – June 2016	UCSD Nicholas Regent	Undergraduate Biology	Now at Golden Gate National Parks Conservancy
Jan. 2015 – June 2016	UCSD Cameron Hines	Undergraduate Biology	
March 2014 –Dec. 2015	UCSD Katharine Niklaso	Undergraduate Biology	Now working in her own start-up company
2013 – 2016	UCSD Brian Hsu	Masters Bio-engineering	Now at Illumina
March 2013 – Oct. 2014	UCSD Alice Yu	Undergraduate Computer Science	Now Ph.D. student at Stanford
Jan. 2013 – June 2014	UCSD Jonathan Chen	Undergraduate Computer Science	Now at BuzzFeed
Jan. 2014 – March 2014	UCSD Tina Wang	Ph.D. rotation student	Co-supervised with Trey Ideker; now member of the Ideker laboratory
Jan. 2013 – March 2013	UCSD Dylan Skola	Ph.D. rotation student	Co-supervised with Trey Ideker; now pursuing graduate school)
June – Aug. 2012	Graduate program in Systems Biology and Bioinformatics , UCSD Nipun Mistry,	Masters Bioinformatics	Now statistical analysisist at MD Anderson Cancer Center
July 2011– Aug. 2012	John Hopkins University Sarah Nix	Undergraduate Biology	Now nurse practitioner at Maine Medical center
June – Aug. 2010	Curry College Justin Barbette	Undergraduate Computer Engineering	Now engineer at SNOWsat
	EPITA		

March – June 2009	Sam Pevzner, Boston University	Ph.D. rotation student M.D.-Ph.D. program	Co-supervised with Marc Vidal Now pursuing medical school
2001 – 2005	Private science teacher for many high school students Paris, France		All successfully graduated high school and went to college

RESEARCH:

Grant support:

Current support:

1. Searle Scholars Program. The functional landscape of the proto-proteome. Principal Investigator. Since July 2018.
2. GM108865. NIH/NIGMS Pathway to Independence Award (K99/R00). Deciphering the mechanisms and dynamics of proto-gene evolution. Principal Investigator. Since May 2014.

Current support to trainee:

1. GM129929. NIH/NIGMS Ruth L/ Kirschstein national Research Service Award (F32). Investigating mechanisms of *de novo* gene birth in *Saccharomyces cerevisiae*. Awarded to Dr. Branden VanOss, postdoctoral fellow in Carvunis laboratory, in August 2018.

Past support:

1. DARPA Biological Technologies. Streamlining and defragging the genome of a eukaryotic cell. Project Team member.

Seminars and invited lectureships related to research:

International conference presentations:

1. Oct. 2018: Experimental Approaches to Evolution and Ecology Using Yeast and Other Model Systems, EMBO workshop, Heidelberg, Germany: *De novo* gene emergence in *S. cerevisiae*. *Invited speaker*.
2. Sept. 2018: Evolutionary Biology Meeting, Marseilles, France: Predicting the evolution of novel genes
3. June 2018: Canadian Institute For Advanced Research, Genetics Networks Program meeting, Toronto, Canada: The genome's reservoir of adaptive proto-genes. *Invited speaker*.
4. May 2018: Biology of Genomes, Cold Spring Harbor Laboratory, NY: The genome's reservoir of adaptive proto-genes
5. April 2018: Wellcome Trust meeting on Evolutionary Systems Biology, Hinxton, UK: The adaptive potential of naturally-occurring proto-genes
6. July 2017: Society for Molecular Biology and Evolution conference, Austin, TX: Proto-genes, fitness and *de novo* gene birth
7. March 2017: Systems Biology: Networks, Cold Spring Harbor Laboratory, NY: Challenges in comparative network biology: integrating across disparate data types and organisms to model the evolution of regulatory networks
8. Feb. 2017: Q-BIO 2017, Poipu, HI: On the illusion of evolutionary divergence in regulatory networks
9. Nov. 2015: Mechanisms of Protein Evolution III 2015: Origins, Denver, CO: Proto-genes and *de novo* gene birth. *Francois Jacob Keynote presentation*
10. June 2014: Society for Molecular Biology and Evolution conference, San Juan, PR: On the illusion of evolutionary divergence in regulatory networks
11. June 2014: Network Science (NetSci) conference, Berkeley, CA: On the illusion of evolutionary divergence in regulatory networks. *Invited speaker*.
12. March 2014: Systems Biology: Global Regulation of Gene Expression conference, Cold Spring Harbor Laboratory, NY: On the illusion of evolutionary divergence in regulatory networks
13. July 2013: Society for Molecular Biology and Evolution conference, Chicago, IL: The "proto-gene" model for *de novo* origination of protein-coding genes
14. June 2012: Society for Molecular Biology and Evolution conference, Dublin, Ireland: Proto-genes and *de novo* gene birth

15. May 2012: Integrative network biology: network medicine conference, Helsingør, Denmark: Proto-genes and *de novo* gene birth
16. May 2010: Network Science (NetSci) conference, Cambridge, MA: Divergence in the Arabidopsis protein interaction network

Invited lectureships:

1. Nov. 2018: Dupont Experimental Station, Willmington, DE: The adaptive potential of proto-genes.
2. April 2017: Iowa State University, Ames, IA: Change and innovation in biological systems
3. May 2016: Cancer Research UK Cambridge Institute, Cambridge, UK: Evolution of transcriptional regulation in diverse animal lineages
4. May 2016: European Bioinformatics Institute, Hinxton, UK: What makes us different? A systems biology perspective on evolutionary innovation
5. Aug. 2015: Workshop on Evolutionary Systems Biology and Modeling, Madison, WI: What makes us different? A systems biology perspective on evolution
6. May 2014: Gladstone Institute, San Francisco, CA: What makes us different? A systems biology perspective on evolutionary innovation
7. May 2014: Stanford School of Medicine, Palo Alto, CA: What makes us different? A systems biology perspective on evolutionary innovation
8. March 2014: Northwestern University Applied Maths Colloquium, Evanston, IL: From proteins and their interactions to evolutionary principles of biological systems
9. July 2012: European Molecular Biology Laboratory, Heidelberg, Germany: From proteins and their interactions to evolutionary principles of biological systems
10. July 2012: University of Massachusetts Medical School, Worcester, MA: From proteins and their interactions to evolutionary principles of biological systems
11. June 2012: Systems Biology Centre and Department of Life Sciences, Warwick, UK: From proteins and their interactions to evolutionary principles of biological systems
12. June 2012: University of Michigan Department of Pathology Seminar, Ann Arbor, MI: From proteins and their interactions to evolutionary principles of biological systems
13. Feb. 2011: Epigenomics Project Genopole, Évry, France: From proteins and their interactions to evolutionary principles of biological systems
14. Feb. 2011: European Institute of Chemistry and Biology, Bordeaux, France: From proteins and their interactions to evolutionary principles of biological systems

Other oral presentations:

1. Nov. 2018: University of Pittsburgh Department of Biomedical Informatics, Pittsburgh, PA: Where do genes come from?
2. Sept. 2018: University of Pittsburgh Department of Human Genetics, Pittsburgh, PA: Proto-genes and *de novo* gene birth
3. June 2018: Senior Vice Chancellor 12 at 12 Seminar series, Pittsburgh PA: Proto-genes and *de novo* gene birth
4. May 2018: Molecular Evolution Laboratory Discussion group, Pittsburgh, PA: The genome's reservoir of adaptive proto-genes
5. Nov. 2017: University of Pittsburgh Department of Molecular Biophysics and Structural Biology, Pittsburgh, PA: Proto-genes and *de novo* gene birth
6. Oct. 2017: Magee-Womens Research Institute's Work in Progress Conference and Research Seminar Series, Pittsburgh, PA: The evolutionary impact of non-genic sequences
7. Oct. 2017: Science 2017, Pittsburgh, PA: What makes us different? An evolutionary systems biology perspective
8. Sept. 2017: Three Rivers Evolution Event (TREE), Pittsburgh, PA: On the illusion of regulatory divergence
9. Aug. 2017: Molecular Evolution Laboratory Discussion group, Pittsburgh, PA: Change and Innovation in Biological Systems
10. June 2017: Joint CDSB/IMM symposium, Pittsburgh, PA: Of mice, men, network modeling and immune systems

11. May 2017: Pittsburgh Chromatin Club Mini-Symposium, Pittsburgh PA: On the illusion of evolutionary divergence in regulatory networks
12. April 2017: Joint CMU-Pitt Ph.D Program in Computational Biology seminar series, Pittsburgh PA: Change and innovation in biological systems
13. Feb. 2017: Pittsburgh Area Yeast Meeting, Pittsburgh, PA: Change and innovation in biological systems
14. April 2016: San Diego Center for Systems Biology Systems-to-Synthesis Symposium, San Diego, CA: Evolution of transcriptional regulation in diverse animal lineages
15. March 2016: University of California San Diego Department of Cellular and Developmental Biology, San Diego, CA: What makes us different? A systems biology perspective on evolutionary innovation
16. Feb. 2016: University of Pittsburgh Department of Computational and Systems Biology, Pittsburgh, PA: What makes us different? A systems biology perspective on evolutionary innovation
17. June 2014: Center for Cancer Systems Biology Alumni Retreat, Gloucester, MA: On the illusion of evolutionary divergence in regulatory networks
18. May 2014: San Diego Center for Systems Biology: Systems-to-Synthesis Symposium, San Diego, CA: On the illusion of evolutionary divergence in regulatory networks
19. May 2012: Dana-Farber Cancer Institute Cancer Biology Seminar, Boston, MA: Proto-genes and *de novo* gene birth
20. Sept. 2011: Center for Cancer Systems Biology retreat, Gloucester, MA: Proto-genes and *de novo* gene birth
21. Sept. 2010: Center for Cancer Systems Biology retreat, Gloucester, MA: Duplication and divergence in a plant interactome
22. March 2010: Dana-Farber Cancer Institute Cancer Biology Seminar, Boston, MA: The proto-gene hypothesis
23. July 2009: Center for Cancer Systems Biology retreat, Gloucester, MA: *De novo* gene birth in *Saccharomyces cerevisiae*
24. June 2009: Roth Lab retreat, Gloucester, MA: *De novo* gene birth in *Saccharomyces cerevisiae*
25. March 2009: Center for Complex Network Research joint seminar, Boston, MA: Towards new models of biological network evolution: an introduction to basic molecular biology, genome annotation, and PPI mapping techniques
26. Sept. 2009: Boston Yeast Meeting, Cambridge, MA: *De novo* gene birth in *Saccharomyces cerevisiae*
27. Jan. 2009: Center for Cancer Systems Biology Think Tank, Boston, MA: New insights on gene birth
28. Aug. 2008: Dana-Farber Cancer Institute student retreat, Boston, MA: *De novo* appearing genes in *Saccharomyces cerevisiae*

Poster presentations:

1. May 2016: Molecules as documents of evolutionary history – 50 years after, Roscoff, France: A molecular clock for transcriptional evolution in animals?
2. Jan. 2016: San Diego Center for Systems Biology retreat, Lake Arrowhead, CA: A molecular clock for transcriptional evolution in animals?
3. Jan. 2015: San Diego Center for Systems Biology retreat, Lake Arrowhead, CA: A molecular clock for transcription factor binding evolution?
4. Jan. 2014: San Diego Center for Systems Biology retreat, Lake Arrowhead, CA: On the illusion of evolutionary divergence
5. July 2011: Dana-Farber Cancer Institute Cancer Biology Department retreat, Boston, MA: Proto-genes
6. March 2011: Systems Biology: Networks conference, Cold Spring Harbor Laboratory, NY: Independently evolved virulence effectors converge onto cellular hubs in a plant immune system network
7. March 2011: Systems Biology: Networks conference, Cold Spring Harbor Laboratory, NY: Proto-genes
8. Aug. 2009: Dana-Farber Cancer Institute Cancer Biology Department retreat, Cambridge, MA: *De novo* gene birth in *Saccharomyces cerevisiae*
9. Sept. 2008: Genome Informatics conference, Hinxton, UK: *De novo* appearing genes in *Saccharomyces cerevisiae*
10. Nov. 2007: Genome Informatics conference, Cold Spring Harbor Laboratory, NY: Could yeast evolution itself influence our knowledge of gene functions?

Oral presentations by trainees:

1. Nov. 2018: Dr. Aaron Wacholder, postdoctoral fellow; Molecular Evolution Laboratory Discussion group, Pittsburgh, PA
2. Nov. 2018: Dr. Aaron Wacholder, postdoctoral fellow; Department of Computational and Systems Biology, Pittsburgh, PA
3. Sept. 2018: Dr. Aaron Wacholder, postdoctoral fellow; Three Rivers Evolution Event (TREE), Pittsburgh, PA
4. Sept. 2018: BaDoi Phan, MSTP rotation student; Three Rivers Evolution Event (TREE), Pittsburgh, PA
5. May 2018: Dr. Branden VanOss, postdoctoral fellow; Pittsburgh Area Yeast Meeting, Pittsburgh, PA

Other research related activities:

Member of the Pittsburgh Center for Evolutionary Biology and Medicine, executive committee

Member of *Frontiers in Bioinformatics and Computational Biology* editorial board since 2017

Member of *Cell Communication and Signaling* editorial board since 2012

Reviewer for *Science*, *PLoS Genetics*, *PLoS Computational Biology*, *PLoS One*, *PNAS*, *Genome Biology*, *BMC Evolutionary Biology*, *Molecular Phylogenetics and Evolution*, *Medecine/Sciences*, *eLife*, *Genome Biology and Evolution*, *Philosophical Transactions B*, *Molecular Biology and Evolution*, *Cell Reports*, *Plant Science*, *Nature Ecology and Evolution*, *Medicinal Research Reviews*, *Genome Research*, *Nature Communications*, *Bioinformatics*, *Nature Methods*, *Genome Research*

CURRENT RESEARCH INTERESTS:

My integrative research program aims at deciphering how evolution shapes the organization of genomes and molecular networks, in order to improve understanding of genotype-phenotype relationships. I am particularly interested in the molecular mechanisms of change and innovation in evolution: where do genes come from? How do new protein interactions emerge? Etc.

SERVICE:

Conference organization:

Cold Spring Harbor Laboratory 2019 international meeting on Network Biology. I am co-organizing the entire conference, as well as a special panel discussion on Women in Science.

Conference symposium organization:

1. July 2017: Society for Molecular Biology and Evolution conference, Austin, Texas: Evolutionary systems biology of cells.
2. Aug. 2015: Investigative Workshop, Madison, Wisconsin: Modeling and Evolutionary Systems Biology
3. June 2014: Society for Molecular Biology and Evolution conference, San Juan, Puerto Rico: Examining disease through the lens of evolution with Evolutionary Systems Medicine and Phylo-medicine.

Public outreach:

1. Since Nov. 2016: multidisciplinary approaches to the rhetorics of molecular evolution
2. Oct. 2014: Volunteered at an event organized by the Fleet Science Center in San Diego aimed at educating the public