

**Athena Aktipis**  
Arizona State University  
Assistant Professor  
Department of Psychology

## Curriculum Vitae

Last Updated: 8/10/2016

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### Current Positions

- 2014-present Arizona State University, Department of Psychology, Assistant Professor  
Member, Center for Evolution and Medicine  
Member, Center for Fundamental and Applied Microbiomics, Biodesign Institute  
Member, Center for Social Dynamics and Complexity
- 2014-present Co-Director, The Human Generosity Project (www.humangenerosity.org)

### Education

- 2008-2011 University of Arizona, Ecology and Evolutionary Biology, Post-doctoral Fellow  
2003-2008 University of Pennsylvania, PhD in Psychology  
2004 University of Pennsylvania, Masters Degree in Psychology  
1998-2002 Reed College, Psychology Department, BA, Phi Beta Kappa

### Past Affiliations

- 2010-2014 University of California San Francisco, Center for Evolution and Cancer,  
Director of Human and Social Evolution & Research Scientist
- 2011-2014 Arizona State University, Department of Psychology, Research Professor
- 2012-2014 Johns Hopkins, Center for Advanced Modeling in the Social, Behavioral and Health  
Sciences, External Faculty
- 2009-2011 Arizona State University, Decision Center for a Desert City, Consultant
- 2010 (Spring) University of Pennsylvania, Department of Psychology, Adjunct Professor
- 2009 (Summer) Wistar Institute, Visiting Scientist
- 2002-2003 Portland State University, Course Developer/Instructor for Agent Based Simulation
- 1999 University of Arizona Economic Science Laboratory, Visiting Scholar

### Publications (google scholar h-index: 17)

1. Alcock, J., Wasielewski, H., **Aktipis C. A.** (2016). Resource conflict and cooperation between human host and gut microbiota: implications for nutrition and health. *Annals of the New York Academy of Sciences*, 1372: 20–28 DOI: 10.1111/nyas.13118
2. **Aktipis, C.A.**, Cronk, L., De Aguilar, R (2016). Cooperation in an uncertain world: For the Maasai of East Africa need-based transfers outperform account keeping in volatile environments. *Human Ecology*, 44(3): 353–364
3. **Aktipis, A.** (2016), Principles of cooperation across systems: from human sharing to multicellularity and cancer. *Evolutionary Applications*, 9:17–36. DOI: 10.1111/eva.1230
4. Andor, N., Graham, T., Jansen, M., Xia, L., **Aktipis, C. A.**, Petritsch, P., Ji, H., and Maley, C. (2016). Pan-cancer analysis of the extent and consequences of intratumor heterogeneity." *Nature medicine* 22(1): 105-113.
5. **Aktipis, A.** (2016). Life history theory and breast cancer risk: methodological and theoretical challenges, response to "Is estrogen receptor negative breast cancer risk associated with a fast life history strategy?" *Evolution, medicine, and public health* (1), 177-179 DOI: 10.1093/emph/eov035
6. Hao, Y., Armbruster, D., Cronk, L., & **Aktipis, C. A.** (2015). Need-based transfers on a network: a model of risk-pooling in ecologically volatile environments. *Evolution and Human Behavior*, 36(4), 265-273.
7. Boddy, A. M., Fortunato, A., Wilson Sayres, M. and **Aktipis, A.** (2015), Fetal microchimerism and maternal health: A review and evolutionary analysis of cooperation and conflict beyond the womb. *Bioessays*, 37: 1106–1118. doi: 10.1002/bies.201500059

8. Maley, C.C., Koelble, K., Natrajan, R., Aktipis, A., Yuan, Y. (2015). An ecological measure of immune-cancer colocalization as a prognostic factor for breast cancer. *Breast Cancer Research* 17 (1), 1 DOI: 10.1186/s13058-015-0638-4
9. **Aktipis, C. A.**, Boddy, A., Jansen, G., Hochberg, M., Maley, C., Hibner, U., Wilkinson, G. (2015). Cancer across life: Cooperation and cheating in multicellularity. *Philosophical Transactions of the Royal Society B*. Published online June 8 DOI: 10.1098/rstb.2014.0219
10. Boddy, A., Kokko, H., Breden, F., Wilkinson, G. **Aktipis, C. A.**, (2015). Cancer susceptibility and reproductive tradeoffs: A model of the evolution of cancer defenses. *Philosophical Transactions of the Royal Society B*. Published online June 8 DOI: 10.1098/rstb.2014.0220
11. Brown, J., **Aktipis, C.A.**, Inclusive fitness effects can select for cancer suppression into old age. *Philosophical Transactions of the Royal Society B*. Published online June 8 DOI: 10.1098/rstb.2015.0160
12. Hidaka, B. H., Asghar, A., **Aktipis C.A.**, Nesse, R.M., Wolpaw, T.M., Skursky, N.K., Bennett, K.J., Beyrouthy, M.W., Schwartz, M.D. (2015). The status of evolutionary medicine education in North American medical schools. *BMC medical education* 15(1): 38.
13. Jansen, G., Gatenby, B., **Aktipis, C.A.** (2015). Control vs. eradication: Adopting strategies from infectious disease treatment to cancer. *Proceedings of the National Academy of Sciences of the United States of America* 112.4 937.
14. **Aktipis, C.A.**, Ellis, B.J., Nishimura, K., Hiatt, R.A., (2014). Modern reproductive patterns associated with estrogen receptor positive but not negative breast cancer susceptibility. *Evolution, Medicine, and Public Health* (2014): eou028.
15. Hao, Y., Cronk L., Armbruster, D., **Aktipis, C.A.** (2014). Need-based transfers on a network: A model of risk-pooling in ecologically volatile Environments
16. Jansen, G., and **Aktipis, C.A.** (2014). Resistance Is Mobile: The Accelerating Evolution of Mobile Genetic Elements Encoding Resistance. *Journal of Evolutionary Medicine*. Vol. 2, Article ID 235873, doi:10.4303/jem/235873
17. Alcock, J., Maley, C.C., **Aktipis, C.A.** (2014). Is eating behavior manipulated by the gastrointestinal microbiota? Evolutionary pressures and potential mechanisms. *Bioessays*. Online publication 8/7/14
18. Bryant, G, **Aktipis C. A.** (2014). The animal nature of spontaneous human laughter. *Evolution and Human Behavior*. Online publication 3/31/2014
19. **Aktipis, C. A.**, Boddy, A., Brown, J., Gatenby, R, Maley C. C. (2013). Life history tradeoffs in cancer evolution. *Nature Reviews Cancer*, 13, 883-892.
20. **Aktipis, C.A.**, Nesse, R. (2013). Evolutionary foundations for cancer biology. *Evolutionary Applications*. 6(1) 144-159.
21. Sprouffske, K, **Aktipis, C. A.**, Radisch, J.P., Carroll, M, Nedulcu, A. M., Maley, C. C. (2013). An evolutionary explanation for the presence of cancer non-stem cells in neoplasms. *Evolutionary Applications*. 6(1) 92-101.
22. **Aktipis, C.A.**, Maley, C.C., Pepper, J. W. (2012). Dispersal evolution in neoplasms: The role of dysregulated metabolism in the evolution of cell motility. *Cancer Prevention Research*. 5(2) 266-275
23. **Aktipis, C. A.**, Kwan, V.S.Y., Johnson, K. A., Neuberg, S.L., Maley, C.C. (2011) Overlooking evolution: A systematic analysis of cancer relapse and therapeutic resistance research. *PLoS ONE* 6(11): e26100. doi:10.1371/journal.pone.0026100
24. **Aktipis, C.A.** (2011). Is cooperation viable in mobile organisms? Simple Walk Away strategy favors the evolution of cooperation in groups. *Evolution and Human Behavior* 32(4) 263-276.
25. **Aktipis, C. A.**, Cronk, L., De Aguilar, R. (2011). Risk-pooling and herd survival: An agent-based model of a Maasai gift-giving system. *Human Ecology* 39(2) 131-140.
26. **Aktipis, C.A.**, Fernandez-Duque, E. (2011). Parental investment without kin recognition: Simple rules for parent-offspring behavior. *Behavioral Ecology and Sociobiology* 65(5) 1079-1091.
27. **Aktipis, C.A.**, Thompson-Schill, S. (2010) Positive assortment for peer review. *Adaptive Behavior*, 18(5) 448-450.
28. Phillips-Silver, J., **Aktipis, C.A.**, Bryant, G. 2010. The ecology of entrainment: Foundations of coordinated rhythmic movement. *Music Perception* 28 (1) 3-14. NIHMSID # 289838
29. Bendick, R., Dahlin, K.M., Smoliak, S., Kumler, L., Jones, S., **Aktipis, C.A.**, Fugate, E., Hertog, R., Moberg, C., Scott, D. 2010. Choosing carbon mitigation strategies using ethical deliberation. *Weather, Climate and Society*, 2(2), 140-147.

30. **Aktipis, C.A. 2006.** Recognition memory and the evolution of cooperation: How simple strategies succeed in an agent-based world. *Adaptive Behavior*, 14, 239-247.
31. Kurzban, R.; **Aktipis, C. A.** 2007. Modularity and the social mind: Are Psychologists too self-ish? *Personality and Social Psychology Review*, 11(2), 131-149.
32. **Aktipis, C.A.** 2004. Know when to walk away: Contingent movement and the evolution of cooperation. *Journal of Theoretical Biology*. 231(2), 249-260.
33. **Aktipis, C. A.**; Kurzban, R.O. 2004. Is *Homo economicus* extinct? Vernon Smith, Daniel Kahneman and the Evolutionary Perspective. *Evolutionary Psychology and Economic Theory, Advances in Austrian Economics*, 7, 135-153
34. Wakeland, W.W.; Gallaher, E.J; Macovsky, L.M.; **Aktipis, C. A.** 2004. A comparison of system dynamics and agent based simulation applied to the study of cellular receptor dynamics. *37<sup>th</sup> Annual Conference of the Hawaii International Complex System Society*, January 2004.
35. **Aktipis, C. A.** 2000. The effect of behavioral assortment on selection dynamics: Externalities, information processing and subjective commitment. Eilis Boudreau and Carlo Maley, eds., *Proceedings of the Artificial Life VII Workshops*, 90-93.
36. **Aktipis, C. A.** 2000. An evolutionary perspective on consciousness: The role of emotion, theory of mind and self-deception. *The Harvard Brain: Journal of Mind, Brain and Behavior*, 7, 29-34.

### Manuscripts and papers under review

1. **Aktipis, A.** (in prep). Cooperation and cheating as innovation: Insights from cellular societies
2. Szynter, D., Sullivan, D., Cronk, L., **Aktipis, A.** (in prep). Measuring fitness interdependence: A new scale for quantifying perceived interdependence better predictor of willingness to help than closeness or relatedness.
3. Campenni, M., Cronk, L., **Aktipis, A.**, (in prep). Correlated disasters and need-based transfers: The limits of risk pooling systems in simulated ecologies.
4. Munoz, A., Chan, A., Cronk L., **Aktipis A.** (in prep). Cheating in need-based transfers: Wason selection task reveals need-based transfer cheater detection system in humans.
5. Alcock, J, **Aktipis, C. A.**, Boddy, A, Day, T, Flinn, M.V., Hochberg, M.E. Jansen, G., Read, A., Maley, C. (in prep) Identifying normal function in abnormal results: Reaction norms in medical practice.
6. Krems, J., **Aktipis, C. A.** (in prep).The paradox of female prosociality: Cooperation and competition among female non-kin.
7. Krems, J., Fales, M., Haselton, M. **Aktipis, A.**, (in prep). Female reproductive aggression and the evolution of concealed ovulation.
8. Hess, N., **Aktipis, C.A.** (in prep). Cooperation and conflict among female affines: An evolutionary analysis and systematic review
9. **Aktipis, C. A.** (in prep). Evolution in the flesh: Cancer and the transformation of life. Princeton University Press.
10. **Aktipis, C. A.** (in prep). The evolution of conditional movement in cancer cells

### Book Chapters and Other Contributions

1. Greaves, M., **Aktipis C. A.** (in press). Cancer in the modern world: Does mismatch with our ancestral environment enhance cancer risk? *Frontiers in Cancer Research*.
2. Schiffman, J. D., White, R. M., Graham, T. A., Huang, Q, **Aktipis, C. A.** (in press) The Darwinian dynamics of motility and metastasis. *Frontiers in Cancer Research*.
3. **Aktipis, A.**, (2016) Revolutionary biology: Evolutionary biology and ecology of cancer summer school supports a growing field. *This View of Life*, July 19. <https://evolution-institute.org/article/revolutionary-biology-evolutionary-biology-and-ecology-of-cancer-summer-school-supports-a-growing-field/>.
4. **Aktipis, C.A.**, Maley, C.C. (2011) The self-ish cell: Cancer's emerging evolutionary paradigm. *Evolution and Medicine Review* (August 9). <http://evmedreview.com/?p=764>.
5. **Aktipis, C. A.**, Maley, C. C., & Neuberger, S. L. (2010). Psychological barriers to evolutionary thinking in medicine. *Evolution and Medicine Review* (Feb 24). <http://evmedreview.com/?p=231>
6. **Aktipis, C. A.** 2010. Book review of 'Why we cooperate' by M. Tomasello. *Journal of Artificial Societies and Social Simulation* 13(3) <http://jasss.soc.surrey.ac.uk/13/3/reviews/7.html>

7. **Aktipis, C.A.** 2008. When to Walk Away and when to stay: Cooperation evolves when agents can leave unproductive partners and groups. *Dissertation*.
8. Kurzban, R.; **Aktipis, C. A.** 2007b. On detecting the footprints of multilevel selection. Gangestad, S. W. & J. A. Simpson (Eds.) *Evolution of Mind: Fundamental Questions and Controversies*. New York: Guilford, 226-232.
9. Kurzban, R. O., **Aktipis, C. A.** 2006. Modular minds, multiple motives. Shaller, M; Simpson, J & Kenrick, D. (Eds.) *Evolution and Social Psychology*, 39-53. New York: Psychology Press.

### Blog Posts

1. Cancer Susceptibility— Not All Bad? *May 18, 2016* <https://evmed.asu.edu/blog/cancer-susceptibility%E2%80%94not-all-bad>
2. Clone wars: A game of metastatic strategy. Are you smart enough to be a cancer cell? *April 3, 2016* <http://www.athenaaktipis.org/blog/clone-wars-a-game-of-metastatic-strategy>
3. How to Walk Away. Do it yourself models of the evolution of cooperation, *March 23, 2016* <http://www.athenaaktipis.org/blog/how-to-walk-away>
4. Making Bunnies Game. Evolution, behavior and bunnies, *March 16, 2016* <http://www.athenaaktipis.org/blog/making-bunnies-game>

### Recent Public Outreach

- 2014-16 Working with Exploratorium Science Museum in San Francisco to develop exhibits about risk pooling and need-based transfer systems to teach public about human cooperation
- 2016 Interviewed by The Daily Dot about the implications of human sharing behavior for Uber, Lyft and the sharing economy <http://www.dailydot.com/debug/uber-lyft-social-norms/>
- 2016 Created and ran “Game of Clones” event at ASU Emerge Festival to engage public in cancer as a break down of cellular societies. <https://biodesign.asu.edu/news/game-clones-cancer-wars-emerge-2016>
- 2015 Interviewed by New York Times and other news outlets after publication of “Cancer across life: Cooperation and cheating in multicellularity”
- 2015 The Human Generosity Project covered in High Country News story “Good neighbors”
- 2015 Interviewed by New York Times and other news outlets after publication of “Fetal microchimerism and maternal health: A review and evolutionary analysis of cooperation and conflict beyond the womb”
- 2014 Interviewed for National Public Radio, New York Times, ABC News and many other media outlets after publication of “Is eating behavior manipulated by the gastrointestinal microbiota? Evolutionary pressures and potential mechanisms.”
- 2014 Public lecture at the Institute for Advanced Study in Berlin (Wissenschaftkolleg) “Cancer Evolution” on April 2: <http://www.wiko-berlin.de/wikothek/lectures-on-film/2014-c-athena-aktipis-andrew-read/>
- 2014 Interviewed for March 28 Newsweek article about evolutionary approaches to cancer treatment: <http://mag.newsweek.com/2014/03/28/war-against-cancer-alternative-cancer-treatments.html>
- 2014 Interviewed on National Public Radio about cooperation in cancer and among humans (March): <http://www.wnyc.org/story/trbq-why-do-we-share/>

### Selected Invited Presentations

- 2016 Plenary address, Human Behavior and Evolution Society, Vancouver BC, July 1

- Cooperation from Cells to Societies
- 2016 TedX, Arizona State University  
Do you believe in Generosity?
- 2015 Invited talk, American Society of Clinical Oncology, Chicago IL, May 29  
Evolutionary approaches to cancer treatment
- 2015 Invited talk, Mayo Clinic Individualizing Medicine Conference, Rochester MN, Sept 21  
Cooperation, conflict and the promise of comparative oncology
- 2015 Invited talk, The Science of Sharing Forum, Exploratorium Science Museum, San Francisco, June 6  
Cooperation in multicellularity and other social systems
- 2015 Invited talk, Young Presidents Organization Global Digital Forum, San Francisco, May 6  
The origins and future of human sharing
- 2014 Invited talk, Harvard University, Human Evolutionary Biology Seminar Series, Nov 13  
Cooperation and sharing across systems: From human sharing to multicellularity
- 2014 Public lecture, Institute for Advanced Study (Wissenschaftskolleg), Berlin, Germany, Feb 4  
Cancer Evolution
- 2014 Invited talk, Symposium on Evolution and Cancer, Lisbon, Portugal, June 24  
Cancer and the evolution of somatic cheating
- 2013 Invited talk, Striking a moving target: Challenges and chances for immunotherapy of cancer, May 26-27, Munich, Germany  
Evolution of metastasis and immune evasion
- 2013 Invited talk, Ecological and Evolutionary Perspectives on Cancer conference, Roscoff, France  
Challenges and opportunities in the evolution and ecology of cancer, Nov 3
- 2013 Invited talk, American Association for Cancer Research, DC, April 10  
Evolution under resource limitation: Models of motility and metastasis
- 2013 Chapman Keynote Research Lecture, Kansas University Medical Center, April 5  
Fundamental questions in cancer evolution: Knowns and unknowns
- 2013 Grand Rounds, Evolutionary Medicine Month, UCLA, February 6  
Evolutionary foundations for cancer biology
- 2012 National Academy of Science Chinese-American Kavli Frontiers of Science Symposium, Oct 11-14.  
Solving the paradox of breast cancer susceptibility: Evolution and estrogen receptors
- 2011 Invited talk, Evolution and Extravagant Altruism Speaker Series, U Mich., ISR, Jan 9  
Beyond reciprocity and kin selection: Is it time to rethink the foundations of cooperation theory?
- 2011 The Theory of Cooperation Workshop, August 11-13, Adelboden, Switzerland.  
The evolution of cooperation across domains: Simple rules and complex social organization
- 2010 Invited talk, Society for Personality and Social Psychology, Evo Preconference, Las Vegas, Jan 28,  
Walk the Walk: Models of mobility and the evolution of cooperation
- 2009 Plenary address, European Social Simulation Association Conference, U Surry, Sept 14-18  
The simplicity of cooperation: Conditional movement rules promote cooperation
- 2009 Invited talk, UCLA Center for Behavior Evolution and Culture, May 27.  
Walking Away from the Haystack: Conditional movement and the evolution of cooperation
- 2009 Institute for Advanced Study, Princeton University, April 20.  
Social norms and simple rules: Agent-based models of cooperation
- 2008 Invited talk, Principles of Repurposing Workshop, Santa Fe Institute, July 14-16.  
Decentralized redesign: Insights from principles in the evolution of cooperation

### **Professional Activities**

- 2015-16 Chair of membership, International Society for Evolution, Ecology and Cancer
- 2016 Scientific Organizer, Evolutionary Biology and Ecology of Cancer Summer School, Cambridge, UK. Wellcome Trust, July 11-15
- 2016 Organizer, Risk, Disasters and Need-based transfers workshop, ASU, Jan 15-16
- 2015 Organizer, Kinship, Conflict and Cooperation: Reconceptualizing kinship for the 21st century, Berlin Germany, Oct 29-31
- 2015 Organizer, Third Biannual Evolution and Cancer Conference, UCSF, Dec 10-13
- 2015 Organizer, Helping and resilience in the face of disaster workshop, ASU Jan 15-16
- 2012-16 Scientific advisor, Science of Sharing, Exploratorium museum in San Francisco

- 2012-16 Associate editor, Journal of Evolutionary Medicine
- 2013-14 Fellows representative, Institute for Advanced Study, Wissenschaftskolleg, Berlin
- 2013 Organizer, Second Biannual Evolution and Cancer Conference, UCSF, June 13-16
- 2012-14 National Evolutionary Medicine Education working group member, National Evolutionary Synthesis Center
- 2012-14 Executive board member, Institute for Drug Resistance
- 2012-14 Associate editor, Journal of Evolutionary Medicine
- 2012 Guest editor, Evolutionary Applications special issue, Evolution and Cancer
- 2011 Organizer, First Biannual Evolution and Cancer Conference, UCSF, June 3-6
- 2010-15 Ad hoc reviewer for PLOS One
- 2010-15 Ad hoc reviewer for Journal of Evolutionary Psychology
- 2006-15 Ad hoc reviewer for Journal of Theoretical Biology
- 2005-15 Ad hoc reviewer for Current Anthropology
- 2004-15 Ad hoc reviewer for Adaptive Behavior
- 2004-15 Ad hoc reviewer for Evolution and Human Behavior
- 2006 Guest editor for special issue of Adaptive Behavior on the Evolution of Cooperation
- 2000 Organizer, Cooperation and Multi-level Selection workshop at Artificial Life VII Conference and editor of proceedings

### **Awards/Honors**

- 2013-14 Fellow at the Institute for Advanced Study, Berlin, Wissenschaftskolleg
- 2012 National Academy of Science Kavli Fellow
- 2011 Distinguished Alumni Award, Willowbrook
- 2002 State Finalist, Rhodes Scholarship
- 2002 Phi Beta Kappa Honor Society, Reed College
- 2002 Commendation for Academic Excellence, Reed College
- 2001 Udall Scholarship (declined due to conflict with attendance at Max Plank Institute, Berlin)
- 2000 Honorable mention, Udall foundation
- 1999 Commendation for Academic Excellence, Reed College

### **Current Grants**

1. Application of Evolutionary Principles to Maintain Cancer Control PQ21 (NIH/NCI R01CA170595-01, Dr. Robert Gatenby PI) Aktipis is co-Investigator with \$94,796 direct/yr 1, \$369,408 direct/yr 1-4
2. Genomic and Microenvironmental Diversity as Drivers of Metastasis in DCIS PQC3 (NIH/NCI, R01 Drs. Carlo Maley and Shelley Hwang Co-PIs) Aktipis is co-Investigator with funding of \$9,087, direct/yr 1, \$36,348, total direct/yr 1-4, 4/1/14-3/31/18
3. Breakthrough Award DoD/Breast Cancer Research Program Genomic and Microenvironmental Diversity as Drivers of Progression in DCIS (Drs. Carlo Maley and Shelley Hwang PIs) Aktipis is co-investigator with funding of \$11,516, direct/yr 1 \$ 58,690 total direct/yr 1-5 6/1/14-5/31/19
4. Generous by Nature: The Human Generosity Project. Templeton Foundation. Drs. Athena Aktipis and Lee Cronk PIs, Aktipis funding is \$241,623 total direct/yr 1, \$740,609 total direct/yr 1-3 7/1/14-7/1/17.

### **Past Grants**

1. Modeling the causes and consequences of the evolution of cell motility in neoplasms (NIH F32 CA144331, Dr. Aktipis, PI, with funding of \$156,000 5/1/2010- 5/1/2013)
2. Modeling neoplastic progression in Barrett's esophagus (R01 CA140657, Drs. Pepper and Maley, Co-PIs) NIH 7/1/09-6/30/10, Role: Postdoctoral Fellow
3. Exploring the applicability of the osotua sharing rule to address fragmented water governance in Arizona, 2010 (Decision Center for a Desert City, Arizona State University Dr. Aktipis, PI, \$42,000)
4. Russell Ackoff Research Grant, Wharton Risk Management and Decision Processes Center, U Penn, 2005 (Dr. Aktipis, PI, \$2,200)
5. Graduate Research Fellowship, National Science Foundation 2003-2007 (approx. \$150,000)

## Teaching Experience

- 2015-16 **Professor, Psychology Department**, Arizona State University  
Evolution, Ecology and Behavior (Spring 2016)  
Cooperation and Social Behavior (Fall 2016)  
Intro Evolutionary Psychology (scheduled for Spring 2017)
- 2016 **Faculty, Evolutionary Biology and Ecology of Cancer Summer School** at Wellcome Trust Genome Campus, Cambridge UK
- 2016 **Faculty, Interdisciplinary College**, Transitions and Transformations in Cognition, Biology, and Interactive Systems, Guenne Germany
- 2012 **Faculty, Evolutionary Medicine Summer School at Mt. Desert Island Biological Lab**  
Lecturer on evolution and cancer, discussion leader
- 2010 **Adjunct Professor, U Penn Dept. of Psychology**  
Prosocial Behavior course, teaching and course preparation for new course
- 2005 **Teaching Assistant, U Penn Dept. of Psychology**  
Introduction to Psychology course, teaching, exam design and grading
- 2005-06 **Instructor, Institute for Research in Cognitive Science, U Penn**  
Undergraduate Summer Workshop in Cognitive Science, teaching
- 2004 **Teaching Assistant, U Penn Dept. of Psychology**  
Animal Behavior course, teaching, exam design and grading
- 2002-2003 **Instructor and Course Developer, Portland State U, Systems Science Department**  
Agent-based simulation course, teaching and course prep. for graduate level course
- 1999-2003 **Intern, Advocates for Women in Science, Engineering and Mathematics (AWSEM)**  
Teaching and lab design for weekly club meeting of grade school, middle school and high school students. The AWSEM program is a vertical mentoring system designed to encourage young women to pursue careers in the sciences.
- 1999 **Tutor, Score Prep**  
Tutor for Score Prep, company specializing in preparing high school juniors for the SAT.
- 1998 **Educator, Illinois Energy Education Development (ILEED)**  
Environmental educator at Dupage County recycling center.

## Invited Presentations (last 5 years)

### International:

- 2016 Evolutionary Biology and Ecology of Cancer Summer School lecturer, July 11-19, Cambridge, UK
- 2016 Interdisciplinary College Faculty, Guenne Germany, March 4-11, Gunne, Germany
- 2014 Symposium on Evolution and Cancer, Champalimaud Foundation, June 24, Lisbon, Portugal  
Invited Talk: Cancer and the evolution of somatic cheating
- 2014 Striking a moving target: Challenges and chances for immunotherapy of cancer, May 26-27, Munich Germany  
Invited Talk: Evolution of metastasis and immune evasion
- 2013 Evolutionary and Ecology Perspectives in Cancer, Nov 3, Roscoff, France  
Invited Talk: Challenges and opportunities for evolutionary and ecological approaches to cancer
- 2013 Institute for Cancer Research, UK, June 25  
Invited Talk: Applying ecology to cancer
- 2011 The Theory of Cooperation workshop, August 11-13, Adelboden, Switzerland  
Invited Talk: The evolution of cooperation across domains: How simple rules give rise to complex social organization

### National:

- 2016 Human Behavior and Evolution Society, Vancouver BC, July 1  
Plenary address: Cooperation from Cells to Societies
- 2016 International Society for Evolution, Medicine and Public Health, Durham NC, June 22-25  
Talk: What to do with cellular cheaters? The cheater detection problem in multicellularity and cancer susceptibility
- 2016 TedX, Arizona State University  
Do you believe in Generosity?

- 2015 Invited talk, American Society of Clinical Oncology, Chicago IL, May 29  
Evolutionary approaches to cancer treatment
- 2015 Mayo Clinic Individualizing Medicine Conference, Rochester MN, Sept 21  
Invited talk: Cooperation, conflict and the promise of comparative oncology
- 2015 The Science of Sharing Forum, Exploratorium Science Museum, San Francisco, June 6  
Invited talk: Cooperation in multicellularity and other social systems
- 2015 Young Presidents Organization Global Digital Forum, San Francisco, May 6  
Invited talk: The origins and future of human sharing
- 2015 University of Arizona, Ecology and Evolutionary Biology Seminar Series, April 13  
Talk: Cancer as cheating in the foundations of multicellular cooperation
- 2015 International Society for Evolution, Medicine and Public Health, ASU, March 21  
Talk: Cancer as somatic cheating: Resource acquisition and monopolization in multicellularity and cancer
- 2015 University of California, Davis, Animal Behavior Seminar Series, March 13  
Talk: Need-based transfers across cooperative systems
- 2014 Harvard University, Human Evolutionary Biology Seminar Series, Nov 13  
Talk: Cooperation and sharing across systems: From human sharing to multicellularity
- 2014 University of New Mexico, Department of Psychology Seminar Series, Nov 3  
Talk: Beyond tit-for-tat: Computational models of human sharing and the evolution of sociality
- 2013 Second International Biannual Evolution and Cancer Conference, UCSF June 12-16, From Unicellularity to Multicellularity and Back Again  
Public talk: Is cancer a Darwinian demon?  
Talk: Evolutionary life history tradeoffs in cancer  
Conference organizer: Brought theoretical evolutionary biologists and social scientists together with cancer researchers to address cancer from an evolutionary perspective
- 2013 Evolution and Comparative Oncology Mini-Symposium, University of Utah, May 7  
Invited Talk: Evolutionary foundations for cancer biology
- 2013 American Association for Cancer Research, DC, April 10  
Invited Talk: Evolution under resource limitation: Models of motility and metastasis
- 2013 Synthesizing the Evolutionary and Social Science Approaches to Human Cooperation catalysis meeting, National Evolutionary Synthesis Center, Durham NC, April 6  
Invited Talk: Generosity or reciprocity: Resource transfers and risk pooling
- 2013 Chapman Keynote Research Lecture, Kansas University Medical Center, April 5  
Keynote address: Fundamental questions in cancer evolution: Knowns and unknowns
- 2013 Kinetic Theory for the Emergence of Complex Behavior in Social and Economic Systems Workshop, University of Arizona, February 22-24  
Invited Talk: Cooperation through decentralized movement and sharing norms
- 2013 Grand Rounds, Evolutionary Medicine Month, UCLA, February 6  
Invited Grand Rounds Speaker: Evolutionary Foundations for Cancer Biology
- 2012 Human Behavior and Evolution Society, University of New Mexico, June 13-17  
Talk: Generosity without reciprocity, part 1: Computational models of need-based transfers and risk pooling  
Talk: Generosity without reciprocity, part 2: Need-based transfers and reciprocity in a risk-pooling game (presented by Lee Cronk)  
Talk: The animal nature of spontaneous human laughter (presented by Greg Bryant)  
Talk: Can a reduction in ovulation cues be the result of inter-female aggression? Testing alternative hypotheses for the evolution of concealed ovulation in a simulated ancestral environment (presented by Melissa Fales)
- 2012 American Anthropological Association, San Francisco, November 14-18  
Talk: Generosity without debt, part 1: Computational models of risk pooling through need-based transfers  
Talk: Generosity without debt, part 2: Need-based transfers in a risk-pooling game (presented by Lee Cronk)
- 2012 National Academy of Science Chinese-American Kavli Frontiers of Science Symposium, Oct 11-14  
Poster: Solving the paradox of breast cancer susceptibility: Evolution and Estrogen Receptors
- 2012 Designing Drugs that Last, American Academy of Microbiology, Philadelphia, July 22-24



- 2012 Evolutionary Medicine Symposium, Stanford University, May 8  
Invited Talk: The evolution and ecology of metastasis: Can we control cancer by targeting dispersal evolution?
- 2012 Challenges of Complexity Speaker Series, Arizona State University, February 23  
Talk: Generosity without reciprocity: Computational models of risk-pooling and sharing norms in human societies
- 2011 Evolution and Extravagant Altruism Speaker Series, University of Michigan, Institute for Social Research, January 9  
Invited Talk: Beyond reciprocity and kin selection: Is it time to rethink the foundations of cooperation theory?
- 2011 National Academy of Science, Sackler Colloquim: Biological Embedding of Early Social Adversity, Irvine, Dec 8-10  
Poster: Is early adversity a risk factor for hormone negative breast cancer? (with Bruce J. Ellis, Katherine Nishimura and Robert A. Hiatt)
- 2011 UCSF Breast Oncology Program Seminar Series, November 28, 2011  
Talk: Evolutionary medicine for breast cancer: Can evolutionary life history theory explain differential risk factors associated with hormone receptor status?
- 2011 UCLA Health Psychology Seminar Series, October 19  
Talk: Breast Cancer Susceptibility from an Evolutionary and Social Perspective
- 2011 Economic Sciences Association, Chicago, October 7-10  
Talk: Emergence of risk sharing in a stochastic environment. Economic Sciences Association, Chicago (talk presented by Steve Gazzillo)
- 2011 Evolution and Medicine Workshop, Mount Desert Island Biological Laboratory, August 5-7  
Talk: Evolutionary medicine for breast cancer: Revisiting the environmental mismatch hypothesis
- 2011 Human Behavior and Evolution Society, Montpellier, June 29-July 4  
Talk: Breast cancer from a life history perspective
- 2011 First International Evolution and Cancer Conference, UCSF, June 3-5  
Talk: An evolutionary life history perspective on breast cancer  
Conference organizer: Brought theoretical evolutionary biologists and social scientists together with cancer researchers to address cancer from an evolutionary perspective
- 2011 Evolutionary Genomics Seminar, Stanford, June 1  
Talk: Evolution and cancer: harnessing evolution to reduce cancer mortality
- 2011 Ecology and Evolutionary Biology Seminar, UCLA, April 12  
Talk: Cooperation in a spatial world: Simple rules favor the evolution of sociality and conditional movement
- 2011 Resilience conference, Arizona State University, March 12-15  
Talk: Resource management and risk pooling: Exploring the viability of indigenous solutions for modern resource management problems
- 2011 Breast Oncology Program Retreat, UCSF, Jan 27-28.  
Poster: Identifying opportunities for evolutionary thinking in breast cancer
- 2011 National Academy of Science, Sackler Colloquim: The evolution of cooperation, Irvine, Jan 8-9.