

Center for Evolution and Cancer University of California San Francisco Newsletter

Summer/Fall 2011

This Newsletter highlights past and upcoming events and various other items related to Cancer and Evolution



The First Biannual International Evolution and Cancer Conference

University of California San Francisco – June 3-5, 2011

The Center for Evolution and Cancer (CEC) and the Helen Diller Family Comprehensive Cancer Center at the University of California San Francisco hosted the First Biannual International Evolution and Cancer Conference, June 3-5, 2011. The conference brought together cancer researchers, clinicians, evolutionary biologists and social scientists from across the world to address the applications of evolutionary thinking to cancer research and treatment. Topics included: evolution in neoplastic progression, evolution in therapeutic resistance, evolution of cancer suppression in multicellular organisms, social evolution in cancer, and human evolution and cancer susceptibility.

- More information: <http://cancer.ucsf.edu/evolution/conference-2011>
- Talk PDFs: <http://www.unbf.ca/vip/CEC/Conferences.html>

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- Reports from the First International Conference on Evolution and Cancer
 - Forty years on from Nixon's war, cancer research 'evolves' - in Nature Medicine (<http://www.nature.com/nm/journal/v17/n7/full/nm0711-757.html>)
 - The Self-ish Cell: Cancer's emerging evolutionary paradigm A report from the First International Biannual Evolution and Cancer Conference - in The Evolution and Medicine Review (<http://evmedreview.com/?p=764>)

The Second Biannual International Evolution and Cancer Conference will be held at the University of California San Francisco during the spring-early summer 2013. The theme of the 2013 conference will be applying insights from the evolution of single cellular organisms to the study of cancer.

CEC WEBINARS

- **March 6, 10 am:** John Pepper (National Cancer Institute) – Evolutionary Theory and its Application to Acquired Drug Resistance in Cancer
- **March 20, 10 am:** Eric Collisson & Christine Ho (UCSF& UCB) – Ordering Somatic Acquired Events in Cancer Evolution, one Tumor at a Time
- **April 23:** Mel Greaves (Institute of Cancer Research, London)
 - More information: <http://www.unbf.ca/vip/CEC/Seminars.html>



CEC PROGRAMS

The Center for Evolution and Cancer at UCSF is offering various opportunities for scientists at all levels to visit research labs and interact with researchers working at the interface between evolution and cancer. For information go to http://www.unbf.ca/vip/CEC/Visiting_program.html.

COURSES ON EVOLUTION AND CANCER

Mount Desert Island Biological Laboratory one-week summer course on Evolutionary Foundations for Medicine and Public Health – Special focus on cancer and infectious diseases. August 6-10, 2012. For more information go to http://www.mdibl.org/courses/Evolution_and_Medicine/398/

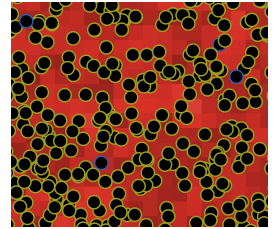
WORKSHOPS ON EVOLUTION AND CANCER

Several CEC faculty are participating in the BEYOND Center “Cancer Forum” Workshop – Evolution, development and cancer: connecting the dots (<http://cancer-insights.asu.edu/category/workshops/>). At Arizona State Univ, February 9-10, 2012.

- Session 1: The evolutionary roots of cancer (Paul Davies, Charles Lineweaver, John Postlethwait, John Pepper)
- Session 2: Cancer's place in the story of life (Carlo Maley, Aurora Nedelcu, Christine Chaffer)
- Session 3: Development and Oncogenes (Jean-Paul Thiery, John Condeelis, John Eaton, Tomislav Domazet-Lošo)
- Session 4: Connecting the dots... (Stuart Newman, Chris McKay, Athena Aktipis)

RECENT PUBLICATIONS ON EVOLUTION AND CANCER

(<http://www.unbf.ca/vip/CEC/Publications.html>)



- Aktipis CA, Maley CC, Pepper JW. 2012. Dispersal evolution in neoplasms: The role of dysregulated metabolism in the evolution of cell motility. *Cancer Prevention Research*. In press.
- Greaves M and Maley CC. 2012. Clonal evolution in cancer. *Nature* 481: 306-313
- Ding L., Ley TJ et al. 2012. Clonal evolution in relapsed acute myeloid leukaemia revealed by whole-genome sequencing. *Nature* 481: 506-510.
- Haeno H, Gonen M, Davis MB, Herman JM, Iacobuzio-Donahue CA, Michor F. 2012. Computational modeling of pancreatic cancer reveals kinetics of metastasis suggesting optimum treatment strategies. *Cell* 20;148(1-2):362-75.
- Rejniak KA, Anderson AR. 2012. State of the art in computational modeling of cancer. *Math Med Biol* in press
- Basanta D, Scott JG, Fishman MN, Ayala G, Hayward SW, Anderson AR. 2012. Investigating prostate cancer tumour-stroma interactions: clinical and biological insights from an evolutionary game. *Br J Cancer* 106(1):174-181
- Shibata D. 2011. Molecular tumor clock to study the evolution of drug resistance. *Mol Pharm* 8(6):2050-2054
- Aktipis CA, Kwan VSY, Johnson KA, Neuberg SL, Maley CC. 2011. Overlooking Evolution: A Systematic Analysis of Cancer Relapse and Therapeutic Resistance Research. *PLoS ONE* 6(11): e26100
- Pepper JW. 2011. Somatic evolution of acquired drug resistance in cancer. Pp127-134. In Gioeli (ed.), *Targeted Therapies: Mechanisms of Resistance*. Springer
- Sprouffske K, Pepper JW, Maley CC. 2011. Accurate reconstruction of the temporal order of mutations in neoplastic progression. *Cancer Prevention Research* 4(7):1135-1144

NEW JOURNALS IN EVOLUTIONARY MEDICINE AND EVOLUTION AND CANCER

- The journal *Evolution: Education and Outreach* dedicated the December issue to evolutionary medicine, with articles on how evolutionary theories are critical for understanding human disease and why thorough classroom instruction in evolution is essential
 - see <http://pandasthumb.org/archives/2011/12/evolutionary-me.html> for a highlight
- Two new journals promoting evolutionary approaches to medicine:
 - *Journal of Evolutionary Medicine* (<http://www.ashdin.com/journals/jem/jem.aspx>)
 - *Evolution, Medicine and Public Health*
 - *Evolutionary Applications* will dedicate an upcoming issue (late 2012) to *Evolution and Cancer* (<http://onlinelibrary.wiley.com/journal/10.1111/%28ISSN%291752-4571>)

