

TABT Updates and URLs of the Week

November 2017

Item 1 – Professional Development Opportunity

TABT Trip to Alaska

TABT is sponsoring a trip to the Copper River Canyon of Alaska June 20-28, 2018. The brochure for the trip is posted in the Current Events section of the TABT website at <http://tabt.us>. The focus of the trip will be natural history. If you or someone you know might be interested in this trip, please share this information with them and have them send altonb@ix.netcom.com an email notification of their interest.

Item 2 – Professional Communications & Networking

TABT Group Page on Facebook

The Texas Association of Biology Teachers maintains a group page on Facebook. Please join the group and take part in additional articles posted on a weekly basis. You're sure to find something new!

Item 3 – Science Update

Zeng Tao, et al., “Embryonic epigenetic reprogramming by a pioneer transcription factor in plants”
(*Nature*, 551:7678, 2 November 2017, Pages 124-128)

This team found that the seed-specific transcription factor LEC1 promotes an active chromatin state at the floral repressor *FLC* and activates its expression in the *Arabidopsis* pro-embryo, thus reversing the winter cold-induced silenced state that is inherited from gametes.

Takashi Akera, et al., “Spindle asymmetry drives non-Mendelian chromosome segregation”

(*Science*, 358:6363, 3 November 2017, Pages 522-528)

Selfish genetic elements exploit the asymmetry inherent in female meiosis to bias their transmission to eggs.

Item 4 – Quote of the Week for 6 November 2017

“Success is not the key to happiness. Happiness is the key to success. If you love what you are doing, you will be successful.” – Herman Cain, American author, business executive, radio host, syndicated columnist and presidential candidate

Item 5 – URL of the Week for 6 November 2017

Dipterainfo

If you want to delve into information about flies and midges, this is your starting point.

<https://diptera.info/news.php>

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Item 1 –Professional Communications & Networking

Tips on Becoming a Teacher Leader

Weather you consider yourself a teacher leader or not, you probably already are one. Once you discover the leader in you, you owe it to the world to share your gift. Here are 5 simple actions (<http://inservice.ascd.org/tips-on-becoming-a-teacher-leader/>) from the Association for Supervision and Curriculum Development (ASCD) that you can do to embrace the leader within yourself.

Item 2 – Science Update

M. Pfeifer, et al., “Creation of forest edges has a global impact on forest vertebrates”

(*Nature*, 551:7679, 9 November 2017, Pages 187-191)

Fragmentation of forest ecosystems produces forest edges, which affect the distribution of many analyzed vertebrate species; smaller-bodied amphibians, larger reptiles and medium-sized mammals experience a larger reduction in suitable habitat than other forest-core species.

François-Xavier Weill, et al., “Genomic history of the seventh pandemic of cholera in Africa”

(*Science*, 358:6364, 10 November 2017, Pages 785-789)

These authors show that a surprising diversity between continents has been established.

Item 3 – Quote of the Week for 13 November 2017

“In the last analysis, what we are communicates far more eloquently than anything we say or do.” – Stephen Covey, American educator, author and speaker

Item 4 – URL of the Week for 13 November 2017

Official Corn Page

This page provides some very basic information about corn, but if you put in a little work you'll be able to find some other excellent information.

<http://www.whfoods.com/genpage.php?tname=foodspice&dbid=90>

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Item 1 – Science Update

Tobias Hirsch, et al., “Regeneration of the entire human epidermis using transgenic stem cells”

(*Nature*, 551:7680, 16 November 2017, Pages 327-332)

This team shows that autologous transgenic keratinocyte cultures can be used to regenerate an entire, fully functional epidermis. The epidermal renewal did not cause any clonal selection. Clonal tracing showed that the human epidermis is sustained by a limited number of long-lived stem cells that can extensively self-renew *in vitro* and *in vivo* and produce progenitors that replenish terminally differentiated keratinocytes. This study provides a blueprint that can be applied to other stem cell-mediated combined *ex vivo* cell and gene therapies.

Desmond Bradley, et al., “Evolution of flower color pattern through selection on regulatory small RNAs”

(*Science*, 358:6365, 17 November 2017, Pages 925-928)

This team analyzed a locus that regulates the pattern of color in snapdragons. The locus contains an inverted gene duplication that encodes small RNAs that repress pigment biosynthesis. Analysis of flowers derived from a region of the Pyrenees where the subspecies coexist indicates that natural selection is operating upon the locus.

Item 2 – Quote of the Week for 20 November 2017

“Nothing in this world can take the place of persistence. Talent will not: nothing is more common than unsuccessful men with talent. Genius will not: unrewarded genius is almost a proverb. Education will not: the world is full of educated derelicts. Persistence and determination are omnipotent.” – Calvin Coolidge, 30th U.S. president, and Republican lawyer from Vermont

Item 3 – URL of the Week for 20 November 2017

The Biology Corner

Those unfamiliar with this site are simply losing out on some excellent resources.

<https://www.biologycorner.com/>

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Item 1 – Professional Development Opportunity

TABT Volunteers Sought for Committees

TABT is a volunteer organization. Committee openings exist on the following committees: Nominating Committee (nominates for elections); Long Range Planning (plans for the future of TABT); Publications Advisory (solicits and accepts activities and manuscripts for the TABT website); Awards (serves with OBTA director to select awardees for OBTA and Alton L. Biggs Awards); Honorary Membership (reviews nominations and reports selections to the TABT board of directors). Additionally, TABT is searching for volunteers to be on a TABT Booth Committee (arranges for coverage of the booth during CAST and sees that the materials are appropriately stored for the next CAST). Each of the standing committees will have three members serving for one, two or three years. The Booth Committee may have the number of members necessary to accomplish the work of the committee. If you are interested in becoming more involved in TABT or have questions about any committee, please email Alton Biggs (altonb@ix.netcom.com) as soon as possible so that you can be appointed to serve beginning January 1, 2018.

Item 2 – Science Update

Joanne L. Parker, et al., “Structural basis of nucleotide sugar transport across the Golgi membrane”

(*Nature*, 551:7681, 23 November 2017, Pages 521-524)

Crystal structures of the nucleotide sugar transporter Vrg4 are reported in both the substrate-free and the bound states.

Maria G. Pachiadaki, et al., “Major role of nitrate-oxidizing bacteria in dark ocean carbon fixation”

(*Science*, 358:6366, 24 November 2017, Pages 1046-1051)

Obligate chemoautotrophic Nitrospinae bacteria make a major contribution to mesopelagic inorganic carbon fixation.

Item 3 – Quote of the Week for 27 November 2017

“A fool’s brain digests philosophy into folly, science into superstition, and art into pedantry.” – George Bernard Shaw, Irish playwright, critic and polemicist

Item 4 – URL of the Week for 27 November 2017

Protein Data Bank

The PDB archives information about the shapes of proteins, nucleic acids, and complex assemblies that helps students and researchers understand aspects of biomedicine and agriculture. It curates and annotates PDB data, building upon the data by creating tools and resources for research and education in molecular biology, structural biology, computational biology, and beyond.

<https://www.rcsb.org/pdb/home/home.do>

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