

TABT Updates and URLs of the Week

June-July 2017

Item 1 – Professional Communications & Networking

[TABT Trip to Alaska](#)

TABT and Holbrook Travel are teaming up for a trip to Alaska June 20-28, 2018. This trip will provide participants the opportunity to investigate the Copper River delta and a great deal of diversity. Don't hesitate to ask questions of Alton Biggs or our Holbrook representative, Debbie Sturdivant Jordan at debbie@holbrooktravel.com.

Item 2 – Science Update

[Green, Jonathon, et al., “A neural circuit architecture for angular integration in *Drosophila*”](#)

(*Nature*, 546:7656, 1 June 2017, Pages 101-106)

Researchers describe a set of clockwise- and anticlockwise-shifting neurons in *Drosophila* whose physiology reveals how the fly's internal sense of heading rotates when it turns.

[Burga, Alejandro, et al., “A genetic signature of the evolution of loss of flight in the Galapagos cormorant”](#)

(*Science*, 356:6341, 02 June 2017, Page 912-922)

Although rare among existing birds, the loss of flight appears to have occurred multiple times in history. Burga et al. sequenced genomes from three cormorant species and compared them with that of the flightless Galapagos cormorant. They identified variants in genes involved in primary ciliogenesis that may be responsible for the skeletal changes associated with the Galapagos cormorant's loss of flight.

Item 3 – Quote of the Week

“A failure is not always a mistake. It may simply be the best one can do under the circumstances. The real mistake is to stop trying.” – B. F. Skinner, psychologist

Item 4 – URL of the Week

[BioMedSearch](#)

BioMedSearch is a biomedical search engine that contains NIH/PubMed documents, a large collection of theses, dissertations, and other proprietary publications not found anywhere else for free, making it one of the most comprehensive and powerful free biomedical searches.

<http://www.biomedsearch.com/>

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Item 1 – Professional Employment Opportunities

[Bishop Dunne Catholic School, Dallas](#)

Bishop Dunne Catholic School has a science opening for AP Biology and AP Environmental Science. Please contact Doug Wine at dwine@bdcs.org or Roger Palmer at rpalmer@bdcs.org.

[Pearce High School, Richardson ISD Science Positions](#)

Pearce high school will have several science openings. The positions may include biology, AP physics, Earth and space science class, and possibly others. Please check the RISD.org to see when the positions are posted or Kathy Grogan at kgrogan104@yahoo.com.

Item 2 – Science Update

[Baik, Sangyul *et al.*, “A wet-tolerant adhesive patch inspired by protuberances in suction cups of octopi”](#)

(*Nature*, 546:7658, 15 June 2017, Pages 396-400)

The bioinspired architecture of this adhesive material is from octopi suction cups. The new material traps air and exhibits strong, reversible, and repeatable adhesion under wet, dry, moist and oil conditions.

[Leffler, Ellen M., *et al.*, “Resistance to malaria through structural variation of red blood cell invasion receptors”](#)

(*Science*, 356:6343, 16 June 2017, Page 1125-1139)

Researchers link structural variation of red blood cell surface receptors with natural resistance to severe malaria. By analyzing genome sequence data researchers identify a variant that reduces the risk of severe malaria by 40% and has recently increased in frequency in parts of Kenya, yet appears to be absent from west Africa.

Item 3 – Quote of the Week

[“It is impossible for anyone to begin to learn that which he thinks he already knows.” – Epictetus, philosopher](#)

Item 4 – URL of the Week

[Microbiology Online](#)

Microbiology Online is the webpage of the Microbiology Society, the largest learned microbiological society in Europe. These online resources support the teaching and learning of microbiology in the classroom, explores how microbes can be friend and foe, and explains why we need these invisible organisms to live.

<http://microbiologyonline.org/>

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Item 1 – Professional Resource

[Texas Teacher Solar Eclipse Resources](#)

A teacher resource page for the solar eclipse, which will be a partial eclipse in Texas, is available at <https://eclipse.aas.org/resources/educational-materials> and a link to a map is available at this site, which also has a link to subject matter experts who are available across the U.S at https://eclipse2017.nasa.gov/sites/default/files/2017_solar_eclipse_SME_s_map.html.

Item 2 – Professional Employment Opportunity

[Kilgore ISD](#)

Kilgore High School has a chemistry teacher opening. Please see the posting at www.kisd.org

Item 3 – Professional Communications & Networking

[TABT Trip to Alaska](#)

The Texas Association of Biology Teachers is sponsoring an international trip to the Copper River Canyon of Alaska June 20-28, 2018. The brochure for the trip is posted for your review 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 4 – Science Update

[Minarik, Martin, et al., “Pre-oral gut contributes to facial structures in non-teleost fishes”](#)

(*Nature*, 547:7662, 13 July 2017, Pages 209-212)

In contrast to the prevailing belief that the gut begins with the mouth and continues backwards from there, this work shows that substantial areas of the faces of ray-finned fishes originate from the pre-oral gut or endoderm.

[Furlan, Alessandro, et al., “Multipotent peripheral glial cells generate neuroendocrine cells of the adrenal medulla”](#)

(*Science*, 357:6346, 07 July 2017, Page 39-51)

The adrenal gland is built from Schwann cell precursors that travel along highways of nerves and differentiate as the result of a complex gene-regulatory mechanism. These results may be helpful in advancing our knowledge on some cancers that arise in the adrenal gland area such as neuroblastoma.

Item 5 – Quote of the Week

[“Cause a little bit of summer is what the whole year is about” – John Mayer, singer, songwriter](#)

Item 6 – URL of the Week

[Earthzine](#)

Earthzine offers news from around the world about the Earth, Earth observations, and new and emerging technologies. Topics include societal benefit areas including climate, weather, oceans, and more. Earthzine produces four seasonal-themed issues per year. Additional information is available at <https://earthzine.org/>.

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Item 1 – TABT Leadership News

TABT Elects New President Elect and Secretary-Treasurer

Beginning January 1, 2018 TABT will have a new leadership team. The new board will consist of Jack Brown, president; Claire Vollmar, a retired teacher and educational consultant from San Antonio moves into the president elect position; Anne Gill continues to be the secretary-treasurer for another two years; Lee Ferguson moves to the past president position; and Alton Biggs remains the appointee of the president. Item 2 – Professional Employment Opportunity

Item 2 – TABT Leadership News

TABT CAST Strand

We hope you'll be able to come to CAST this year. The following represent the TABT Strand: Workshops – *Beg, Borrowed, and Stolen – Favorite manipulatives for AP Biology*, Renee Wilson, Flower Mound ISD; *Creating Individual Intervention and Tutorial Plans Using Student Data Analysis*, Rachel Guillen, San Antonio ISD; *Connecting the Dots* and *Biology Manipulatives (v4)*, Donna McClaugherty, Sheldon ISD; *Tools and Tips for New Life Science Teachers*, Daniel Bryant, St. Thomas High School; *Evolution: Natural Selection Amongst Hominids*, Karla Dean, Anahuac ISD; *Teaching Science With Station Labs*, Corena “Nikki” Fitzgerald, Anahuac ISD; and *Engaging middle school students in activities and PBL for Ecosystems*, Terri Henry, Benold Middle School Short Courses – *Math Matters: Building Quantitative Skills in Biology*, Lee Ferguson, Allen ISD; *Magnificent Moments in Teaching Mechanisms of Genetics* and *Powerful Practices in Processes, Systems, and Interactions*, Jennifer Kaszuba, University of Texas at Austin, Debbie Richards, Bryan ISD, and Jackie Snow, Belton ISD; and *A "Perfect Medley" for Teaching Science: Combining Team-Based Learning with Case Studies*, Sandra Westmoreland, Texas Woman's University

Item 3 – Science Update

Constantino, John N., et al., “Infant viewing of social scenes is under genetic control and is atypical in autism”

(*Nature*, 547:7663, 20 July 2017, Pages 340-344)

Monozygotic twins show high concordance in viewing of social scenes, focusing on eye- and mouth-looking, and this behavior is markedly reduced in toddlers with autism spectrum disorder.

Ou, Horng D., et al., “ChromEMT: Visualizing 3D chromatin structure and compaction in interphase and mitotic cells”

(*Science*, 357:6349, 17 28 July 2017, Page 365- 372)

The nuclei of human cells contain 2 meters of genomic DNA. How does it all fit? Ou et al. describe a DNA-labeling method to visualize chromatin organization in human cells. They show that chromatin forms flexible chains with diameters between 5 and 24 nm. In mitotic chromosomes, chains bend back on themselves for tighter packing.

Item 4 – Quote of the Week

“You will either step forward into growth, or you will step backward into safety.” – Abraham Maslow, American psychologist

Item 5 – URL of the Week

Time-lapse Video of Zygote Development

They say that a picture is worth a thousand words. This interesting time-lapse video will provide students with an excellent view of how early development occurs.

<https://www.youtube.com/watch?v=Wz4igVjNGq4>

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