

Society of Vertebrate Paleontology 2014 Meeting, Berlin, Germany Education and Outreach Poster Session

AIM-UP! Museum-Based Approaches to Increasing Core Competencies in Undergraduate Education

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<http://aimup.unm.edu>

Focus for SVP:

- Challenge: Informing students and instructors about the potential role of collections in undergraduate teaching & research at all universities represents a significant challenge.
- Highlighted the goals of AIM-UP
- Mentioned future directions, e.g., data collection using surveys

Assessment using Surveys

Students across the U.S. have a range of experiences with natural history collections, yet we know very little about the possible educational outcomes of interacting with collections and specimens. We are currently surveying undergraduate students to assess their knowledge of natural history collections at two different stages:

- At the start of their 1st biology course
- Science majors nearing graduation

These surveys will help us develop guidelines and recommendations for improving the student experience.

- Listed topics of available modules
 - **vertebrate** module – The relationship between geographic barriers and divergence from Art + Biology in the Museum
 - **fossil** module

Introduction to the Trilobites: A Macroevolution Virtual Lab

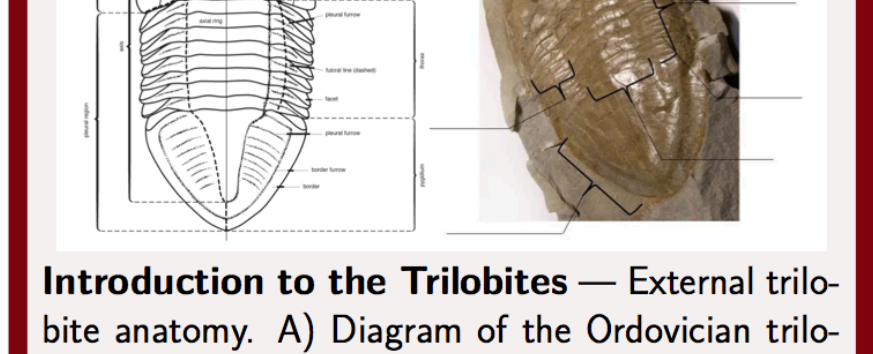
- Created by Michelle Casey and Bruce Lieberman at the University of Kansas
- Based on work from NSF DEB-1256993 Grant – "Integrating Fossil Data into Likelihood-based Phylogenetic Analyses with Trilobites as a Model System" <http://phylo.bio.ku.edu/fossil/> (PIs: Mark Holder & Bruce Lieberman)



Macroevolution: Trilobites

A paleontology module intended to introduce anatomy & terminology of trilobite biology, morphological structures found in fossil specimens, major events in the evolution of Trilobita, and macroevolutionary patterns in the fossil record.

By [M. Casey](#) & [B. Lieberman](#) (U. Kansas)



Introduction to the Trilobites — External trilobite anatomy. A) Diagram of the Ordovician trilobite, *Isotelus* from the *Treatise on Invertebrate Paleontology*. B) *Isotelus iowensis*. University of Kansas Museum, Invertebrate Paleontology (KUMIP) 294608. (Figure from <http://bit.ly/1trv5ww>)

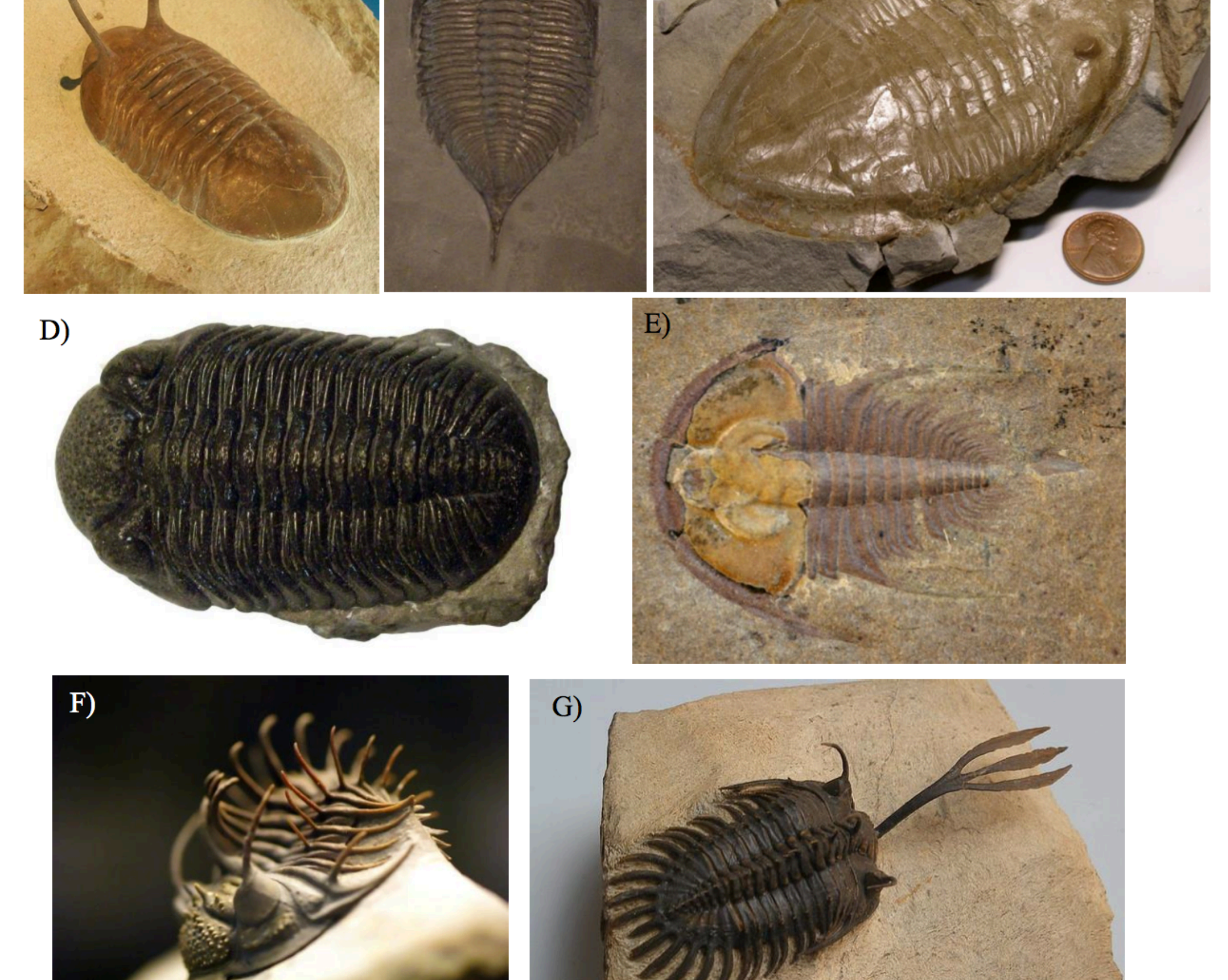


Figure 1: A) *Asaphus kowalewskii*, by Smokeybjb [CC-BY-SA-3.0 (<http://creativecommons.org/licenses/by-sa/3.0/>)], via Wikimedia Commons, B) *Dalmanites limulurus* University of Kansas Museum, on exhibit, C) *Isotelus iowensis* University of Kansas Museum, Invertebrate Paleontology (KUMIP) 294608, D) *Phacops milleri* University Of Kansas Museum, on exhibit, E) *Olenellus sp.* University of Kansas Museum, Invertebrate Paleontology (KUMIP) 369418, F) *Comura sp.*, by Wikipedia Loves Art participant "Assignment_Houston_One" [CC-BY-SA-2.5 (<http://creativecommons.org/licenses/by-sa/2.5/>)], via Wikimedia Commons; G) *Walliserops trifurcates*, by Arenamontanus (Own work) [CC-BY-2.0 (<http://creativecommons.org/licenses/by/2.0/>)], via Flickr.

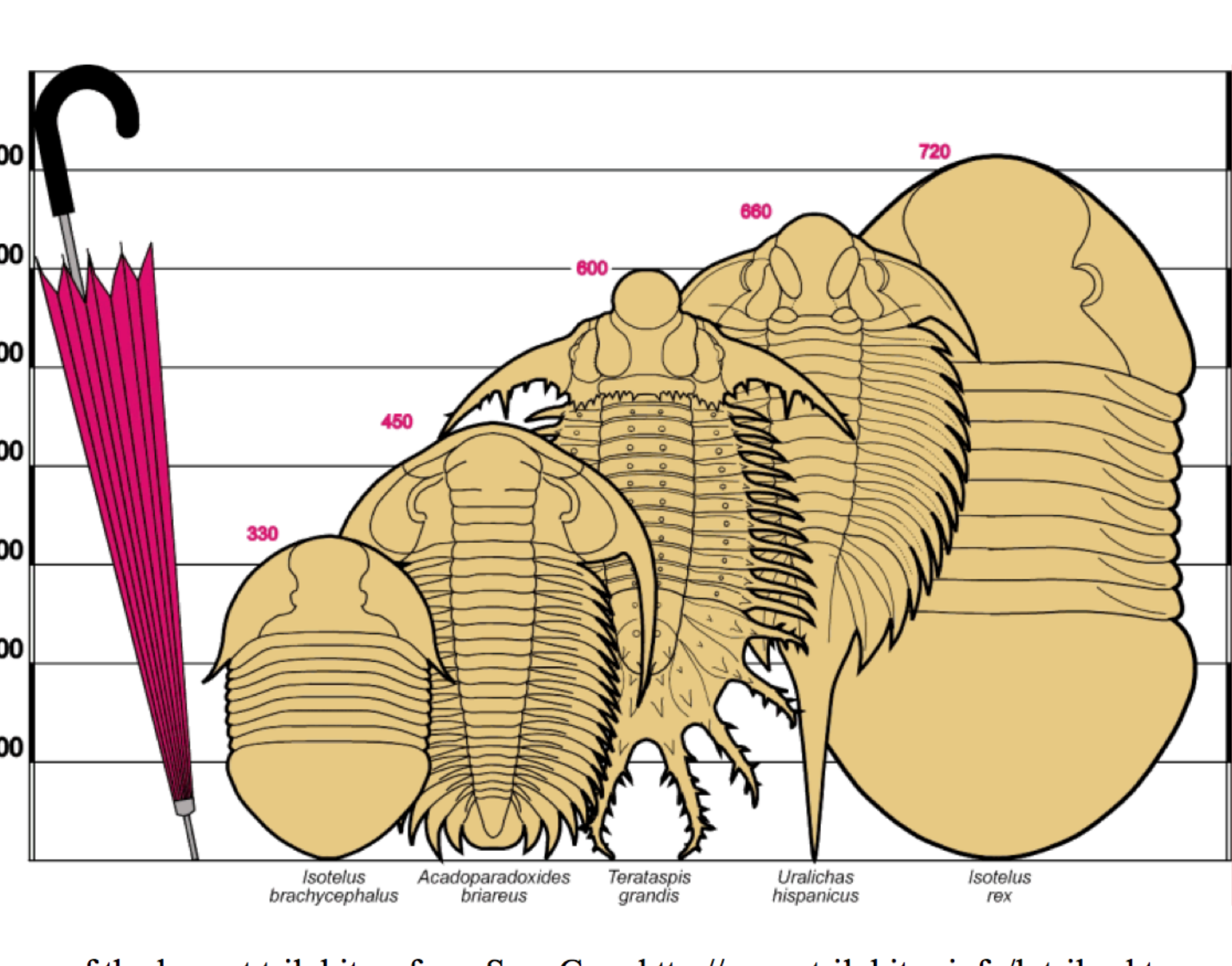


Figure 3: Size range of the largest trilobites, from Sam Gon, <http://www.trilobites.info/ltrilos.htm>, used with permission.

Casey and Lieberman *Evolution: Education and Outreach* 2014, 7:20
<http://www.evolution-outreach.com/content/7/1/20>

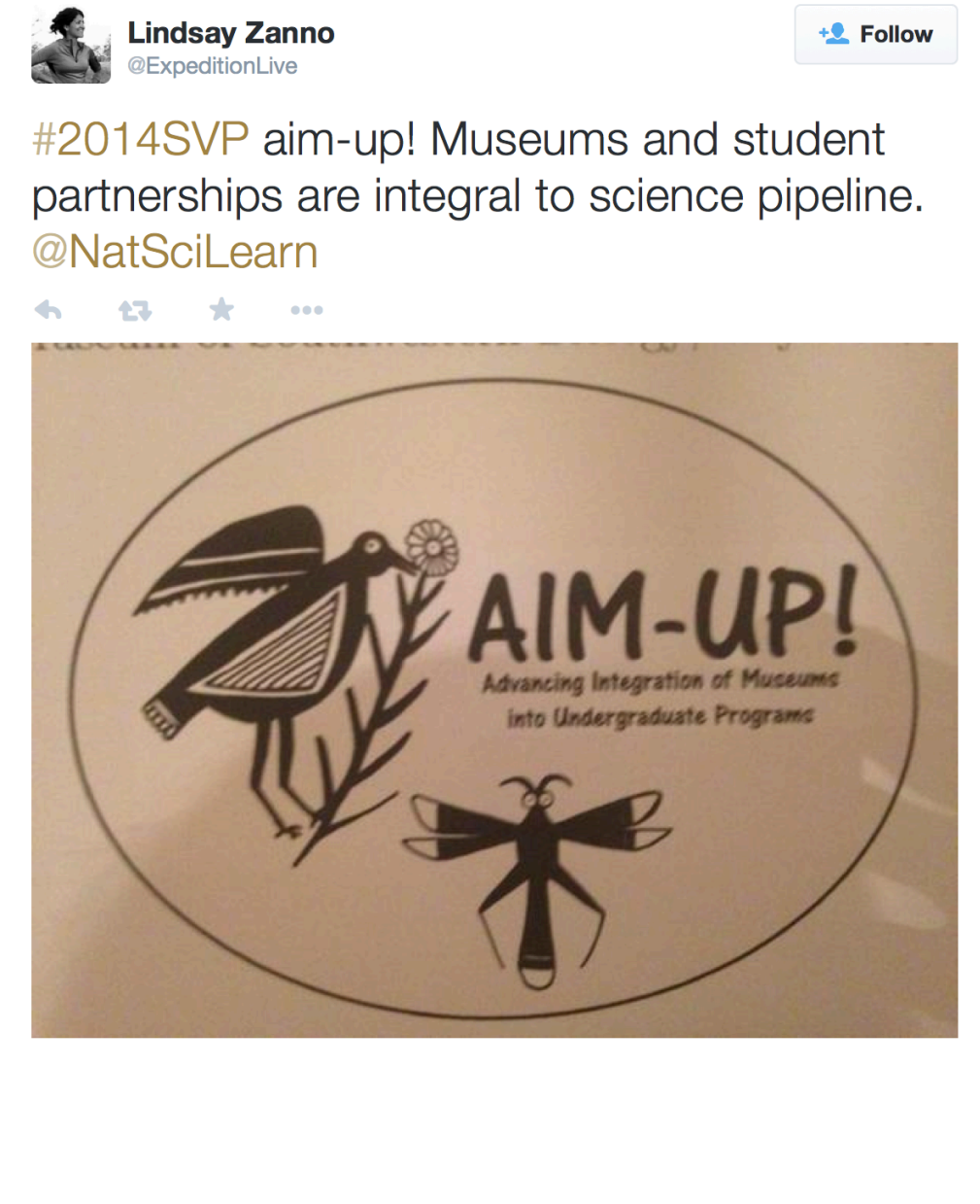
Evolution: Education and Outreach
a SpringerOpen Journal

CURRICULUM AND EDUCATION Open Access

Beyond memorization: an intermediate-level paleontology activity that integrates anatomy, ecology, and macroevolutionary theory using trilobites

Michelle M Casey^{1*} and Bruce S Lieberman^{1,2}

<http://www.evolution-outreach.com/content/pdf/s12052-014-0020-5.pdf>



Some other interesting and relevant posters at SVP

DINO 101: A MASSIVE OPEN ONLINE COURSE ABOUT DINOSAUR PALEONTOLOGY

ARBOUR, Victoria, University of Alberta, Edmonton, AB, Canada, T6G 2E9; VAVREK, Matthew, Royal Ontario Museum, Westlock, AB, Canada; KOPPELHUS, Eva, University of Alberta, Edmonton, AB, Canada; CURRIE, Philip, University of Alberta, Edmonton, AB, Canada

THE ROLE OF MUSEUMS IN (RE)TELLING THE TALE OF THE DODO

BESSELINK, Marijke, Naturalis Biodiversity Center, Leiden, Netherlands; RIJSDIJK, Kenneth, University of Amsterdam, Amsterdam, Netherlands; DE LOUW, Perry, Deltare, Utrecht, Netherlands; CLAESSENS, Leon, College of the Holy Cross, Worcester, MA, United States of America; MEIJER, Hanneke, Institut Catala de Paleontologia, Cerdanyola del Vallès, Spain; DODO RESEARCH PROGRAMME, Team, University of Amsterdam, Amsterdam, Netherlands

HAVE BONES WILL TRAVEL: BRINGING THE MUSEUM TO THE CLASSROOM

BURNES, James, University of Oklahoma, Norman, OK, United States of America, 73069

DIGITAL SPECIMENS IN THE HIGH SCHOOL CLASSROOM

FARKE, Andrew, Raymond M. Alf Museum of Paleontology, Claremont, CA, United States of America, 91711; GAY, Robert, Mission Heights Preparatory High School, Casa Grande, AZ, United States of America; LEPORE, Taormina, Harmony School of Science-High, Sugar Land, TX, United States of America

VIRTUAL FIELD TRIPS: USING REAL-TIME VIDEO CONFERENCING SOFTWARE TO SUPPORT STUDENT INTEREST IN THE DECLINE IN ON-SITE FIELD TRIPS.

MALL, Maureen, Burpee Museum of Natural History, Rockford, IL, United States of America, 61103; RAWLINGS, Sheila, Burpee Museum of Natural History, Rockford, IL, United States of America; WILLIAMS, Scott, Burpee Museum of Natural History, Rockford, IL, United States of America; PARKS, Hillary, Burpee Museum of Natural History, Rockford, IL, United States of America

HOW DOES TAKING A CLASS WITH SKELETAL SPECIMENS MAKE STUDENT INTEREST CHANGE? SOME REPORTS OF PRACTICE COURSES WITH HANDS-ON SPECIMENS TO A HIGH SCHOOL AND COLLEGES IN JAPAN

MARUYAMA, Satoshi, Kyoto University, Kyoto, Japan; MIZUGUCHI, Daisuke, Kyoto University, Kyoto, Japan; KONDO, Shigenori, Osaka College of Eco & Animals, Osaka, Japan; KUSUMOTO, Maki, Nagoya Communication Arts College, Nagoya, Japan; MIYOSHI, Sakie, Nagoya Communication Arts College, Nagoya, Japan; YOSHIDA, Yayoi, Kyoto University, Kyoto, Japan

A CALL TO ACTION: A REPORT ON THE NEW NATIONAL INITIATIVE FOR GALVANIZING CHANGE IN UNDERGRADUATE LIFE SCIENCE EDUCATIONAL PRACTICES IN THE UNITED STATES

SEMPREBON, Gina, Bay Path College, Longmeadow, MA, United States of America, 01106; GUSKY, Sharon, Northwestern Connecticut Community College, Winchester, CT, United States of America; JACK, Thomas, Dartmouth College, Hanover, MA, United States of America

UNDERSTANDING GLOBAL CHANGE: A NEW UNIVERSITY OF CALIFORNIA MUSEUM OF PALEONTOLOGY WEB RESOURCE

WHITE, Lisa D., University of California, Berkeley, CA, United States of America, 94720