SPECIAL EDUCATION:

We have adapted existing modules (e.g. *Mystery Skulls*) as well as developed customized modules (e.g. *Human skeletal anatomy and the biology of joints and motion*) to generate meaningful teaching content for diverse special education settings, incl.:

- learning- disabled and emotionally-challenged students
- autism-spectrum students
- multiple cognitive and physical disability students.

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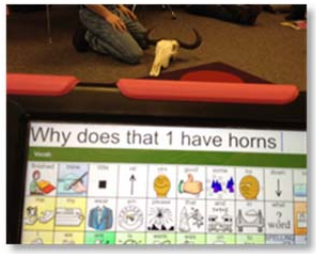

OUR TRACK RECORD:

- 15 teacher-training workshops since 2005 with >300 participants
- 45 class room visits in 2014 alone (Bloomington, Spencer, Bedford)
- >100 class rooms in MCCSC used one or more modules in 2014
- secured funding and generated loan-able skull collection for *WonderLab*
- provided funding for 30 class visits to *WonderLab* in 2014
- 6 postdocs and >20 graduate students trained in the practice of science outreach as of 2014

WANT TO LEARN MORE?

Armin Moczek, PhD
email: *armin@indiana.edu*
phone: (812) 8461468
web: bio.indiana.edu/~moczeklab/outreach.html

DEPARTMENT OF BIOLOGY
INDIANA UNIVERSITY
College of Arts and Sciences
Bloomington

SCIENCE OUTREACH

for General and Special Education

Moczek-Lab Outreach Initiative

Indiana University, Bloomington

Our teaching modules...

- fulfill Indiana Science Teaching Standards across K-12
- are hands-on and inquiry-based
- use materials that are visually arresting and intellectually captivating
- turn students into active participants
- employ the scientific method
- come at no cost to teachers
- are taught for free by our team

Contact: Prof. Armin Moczek
Dpt. of Biology, IU Bloomington
phone: (812) 8561468
email: *armin@indiana.edu*

WHO WE ARE:

We are a team of IU Biologists ranging from graduate students to faculty.

OUR MISSION:

We aim to combine our fascination for biological research with our passion for sharing this knowledge with students and educators.

Our goal is to provide exciting and memorable opportunities to engage future generations of scientists.

We collaborate closely with *WonderLab*, Bloomington's award-winning children's museum for Science and Technology, where we present our resources in teacher-training workshops.

Funding for these efforts is provided by private foundations as well as the *National Science Foundation*.

EXAMPLES:

Listed below are examples of teaching modules we have developed and successfully implemented in K-12 class rooms:

MYSTERY SKULLS - THE NATURAL HISTORY OF SKULLS AND TEETH

[grades 3-11] One of our most popular teaching units. With the help of ~60 mammal skulls, students explore how skulls and teeth can inform our understanding of the diverse ways mammals live their lives, who they are most closely related to, and the circum-stances of their death.

SMART PREDATORS AND TOXIC PREY

[grades 4-8] We investigate the diverse ways by which organisms defend themselves. In the process students become predators and 8 species of differently colored fruit loops become the prey. One species is chemically defended (= treated with tabasco). Can the predators learn to avoid it? Are similar yet tasty colors protected through mimicry? We design the experiment, generate predictions, and test them in class. Especially appropriate for 4th and 8th grade where adap-tations to diverse conditions are central to the life sciences learning objectives.

EXAMPLES: - *CONTINUED* -

INTRODUCING THE SCIENTIFIC METHOD

[all grades] Our most popular module. Working in small groups, students are introduced to the scientific method first in the abstract, then in practice by investigating how and why termites follow an ink trail made by a ball point pen. Students develop alternative hypotheses, and design and execute appropriate experiments to evaluate contrasting predictions. This module has become the standard means by which the scientific method is intro-duced in Biology classes in Bloomin-gton High Schools.

ALIENS AMONG US- INSECT LIFE CYCLES

[grade 2-5] We explore the diversity of insect life cycles, from simple to complex to mind-blowing. Students sort life stages, explore the mystery of metamorphosis, and work their way through classic experiments to learn how metamorphosis is regulated. Supports 2nd grade content standard on life cycles and meta-morphosis.

Also:

HIDDEN UNIVERSES: WHAT DOES IT MEAN TO BE AN INSECT? [grades 4,5,8]

OH THE PLACES YOU'LL GROW - PLANT ADAPTATIONS TO DIFFERENT CONDITIONS [4+]

INSECT SENSES: HOW TO HEAR WITH YOUR LEGS AND TASTE WITH YOUR FEET [grades 2-5]

.....and more!