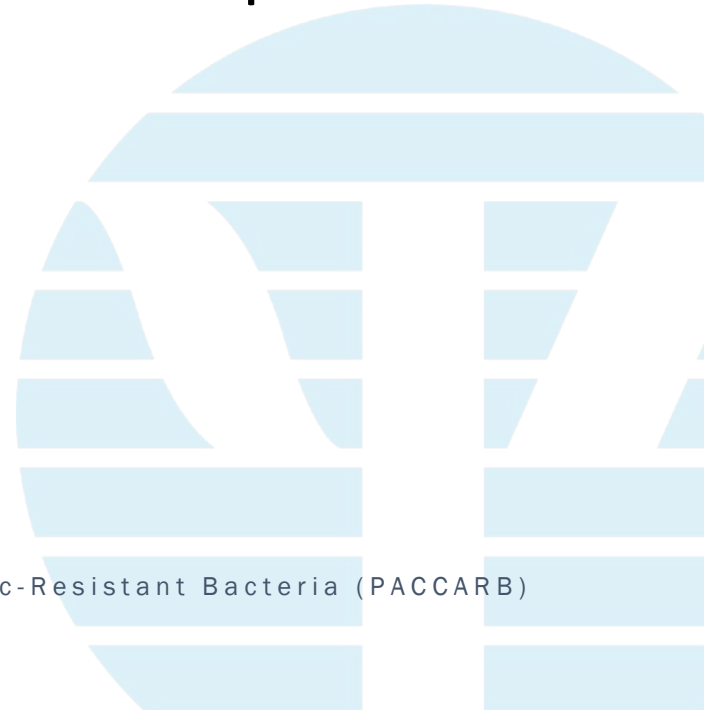# Using Educational Programming, Games, and Comics for Impact

Russell. D. Shilling, Ph.D.
Chief Scientific Officer
American Psychological Association

Email: rshilling@apa.org Twitter: @Russ_Shilling

July 10 Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria (PACCARB)

Who is APA?

APA is the leading scientific and professional organization representing psychology in the United States.

- More than 118,000 researchers, educators, clinicians, consultants and students as its members.

Vision - The change APA aspires to create in the world.

- A strong, diverse, and unified psychology that enhances knowledge and improves the human condition.

Mission - APA's unique roll in creating that change.

- To promote the advancement, communication, and application of psychological science and knowledge to benefit society and improve lives.

Relevant Background

- Retired Navy CAPT, fmr ONR & DARPA PM
  - Virtual Reality Therapy Research
  - Developed multiple videogames, including for pandemics
  - Programs in using comics for impact

- Six years working with Sesame Workshop
  - Military Child Outreach
  - Multiple awards for program

- Two Years at Department of Education
  - Executive Director for STEM Initiatives

Importance of Story!

- Scientists typically have trouble telling a story!
  - Especially to children!!

- A story personalizes the experience and can contextualize the learning experience

- Story can provide rich social-emotional / non-cognitive lessons
  - Grit, Perseverance, Academic Mindset, Social Skills

- Comics, Graphic Novels, Games, Video, VR

SAN DIEGO COMIC-CON PANELS 2015

COMICS FOR IMPACT

- Calling for a Community of Interest and expertise similar to "Games for Impact"
- Bring together educators, scientists, artists and storytellers
- Starting a listserv for federal investors
- LinkedIn Group

Comics for Impact: STEM Education

Comics for Impact: PTSD & Storytelling

Comics: Easy Entry Point

- Easy to gear to any age level

- Self paced

- Can convey story without language

- Can easily be adapted to be multi-lingual

- Relatively inexpensive to produce

- Produce Hardcopy or Electronic

- Must pay close attention to culture, gender, and racial balance

SAGA

HELPING VETERANS WITH PTSD
IMPROVE ENGAGEMENT WITH EVIDENCE BASED TREATMENT

DARPA

WHY PTSD NEEDS TECH

- PTSD CAUSES **AVOIDANCE**
- AVOIDANCE REDUCES THERAPY ENGAGEMENT
- AVERAGE NUMBER OF VISITS TO THERAPY IS **ONE**
- EVIDENCE-BASED THERAPY LIKE PROLONGED EXPOSURE THERAPY AND COGNITIVE PROCESSING THERAPY, CANNOT HELP PEOPLE WHO DO NOT **ENGAGE**
- TECH CAN **FIND** AND **ENGAGE**

NEEDS

ENGAGE PEOPLE WHOSE CONDITION MAKES THEM AVOID TREATMENT
VALUE TO WARFIGHTER:
THEY CAN GET STARTED AT HOME
GAP:
THEY ARE NOT SEEKING TREATMENT AND **NOT** STAYING WITH IT
DESCRIPTION:
AN ONLINE GAME WITH PTSD EDUCATION AND WORKED EXAMPLES USING COMICS TO ENGAGE SUBJECTS

ACCOMPLISHMENTS

- SUCCESSFUL PILOT STUDY
- 12 EDUCATIONAL COMICS
- OVER 70 **MISSIONS** FOR PLAY
- CASE STUDY 10 WEEKS 1 SUBJECT:
  - 66% REDUCTION IN PTSD (PCL-M)
  - 64% RED. DEPRESSION (PHQ)
  - 100% INCREASE IN QUALITY OF LIFE (WHOQOL)
- VIRAL GAME MECHANICS

INTERACTIVE

KEY FEATURES

- SELF-GUIDED EXPOSURE EXERCISES
- TAKE MYSTERY OUT OF THERAPY
- NO WRITERS BLOCK
- CHANGE ATTITUDES ABOUT MENTAL HEALTH CARE
- SEE THERAPIST AS COACH FOR TOUGH EXERCISES
- BUILD SENSE OF ACCOMPLISHMENT

TECHNOLOGY TRANSITION

SEEKING PARTNERS ENGAGED IN MENTAL HEALTH CARE TO EVALUATE AND DEPLOY SAGA FOR VETERANS

- TRANSITION TO MEDICAL PROVIDER
- VETERAN SUPPORT SERVICES
- RESILIENCY TRAINING
- INTERACTIVE WORKBOOK
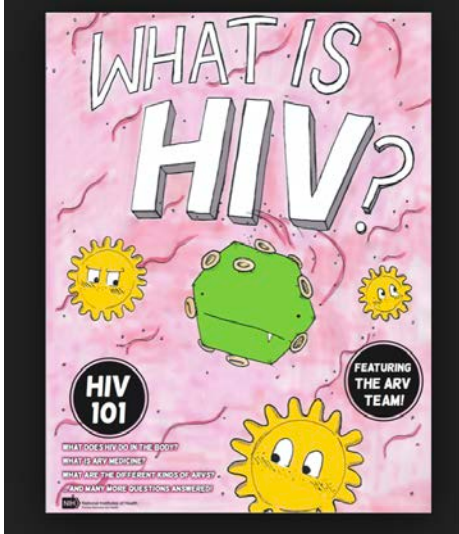- FLEXIBLE LICENSING MODEL
- MORE TRIALS

SIFT

CONTACT: DAN THOMSEN AT DTHOMSEN@SIFT.NET (612) 789 - 0559

Examples of Comics for Impact
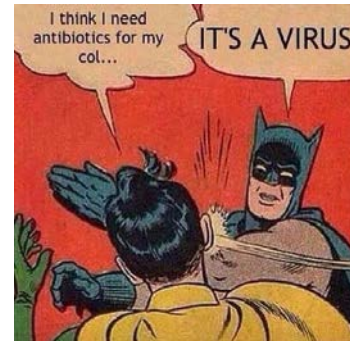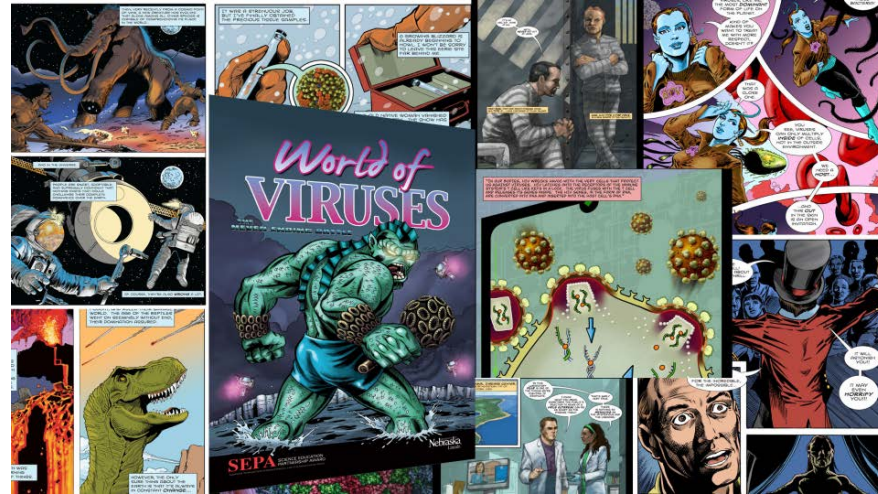
Comics for Impact

Games: Engaging, but more complex to produce

- Already a number of games online for antibiotic resistance

- More expensive to produce

- Technology dependent

- Designing engaging videogames can be difficult

- Provide an active learning solution

Joint DARPA/Dept of Education SBIR Combined Comics and Games

- Teaches fundamental computer science concepts and their application

- Targets sixth grade students with STEM-related subjects and principles

- Permits translation into real world application by integrating game outputs with the LEGO MindStorm EV3 hardware

The Game Story: Alice in Wonderland

While driving through the desert, Alice's truck suddenly breaks down. Lucky for her, a helpful tow truck comes by and takes her back to their junkyard, where they ask her for help.

While Alice's truck is being repaired, she helps the owners out by putting her computer skills to good use in solving their problems.
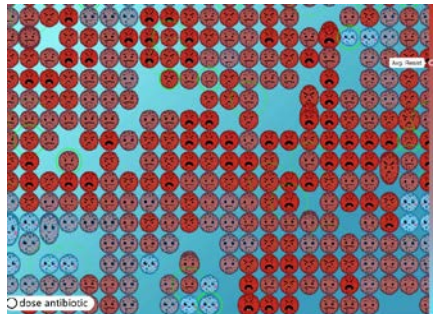
Antibiotic Resistance Games

Brainpop
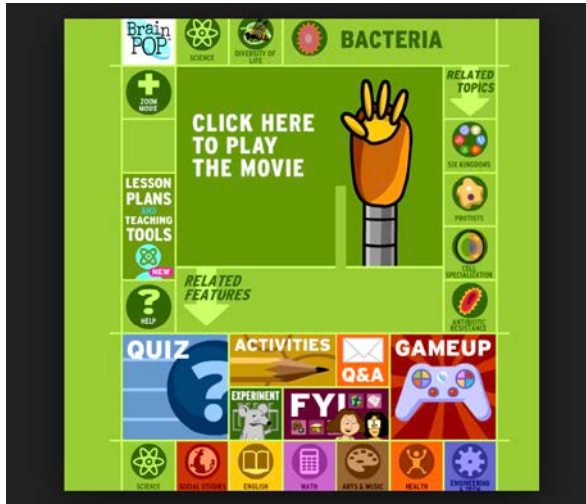
Timezone X

Superbugs

Some Interesting Game Links

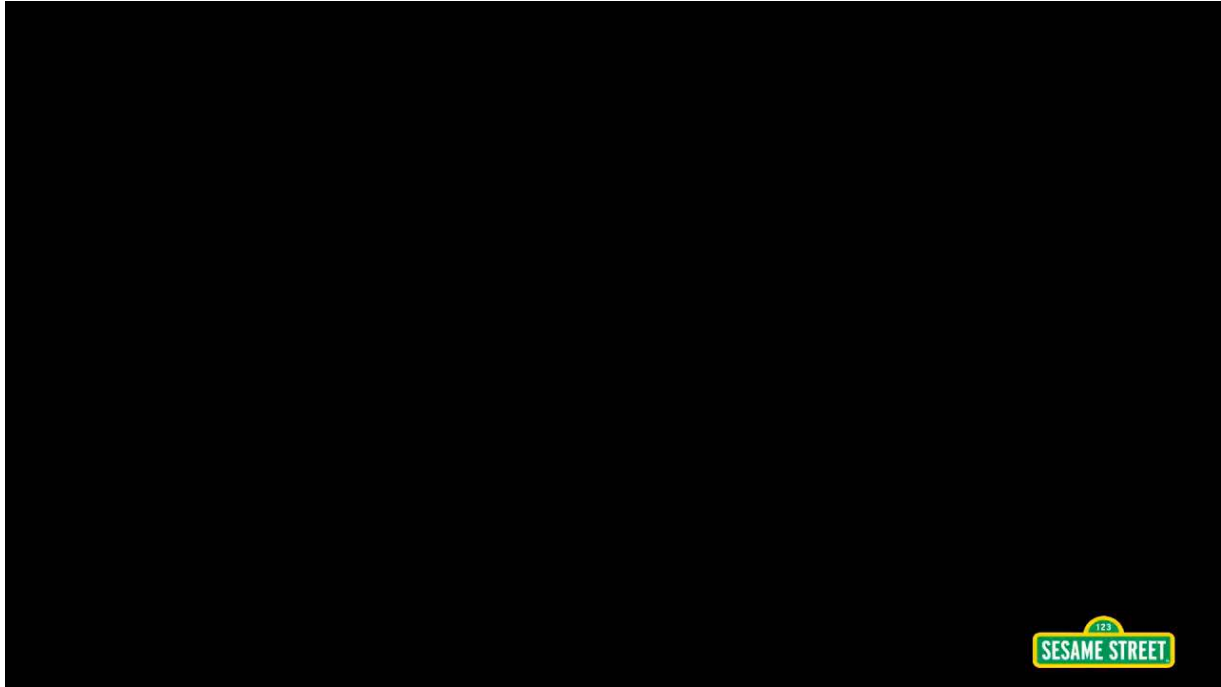- BrainPop Antibiotic Resistance Game
  - https://www.brainpop.com/games/antibioticresistancegame/
- Drugs vs Bugs Board Game
  - https://microbiologysociety.org/blog/bugs-vs-drugs-an-antimicrobial-resistance-board-game.html
- Super Bugs Game
  - https://longitudeprize.org/antimicrobial-resistance/superbugs
- Dice Game
  - https://www.sciencebuddies.org/blog/superbugs-and-antibiotics-explore-with-a-dice-game
- Virtual Lab
  - http://www.bigrocketproductions.com/portfolio-item/antibiotic-resistance/

Video Media

- High quality production is expensive

- Can be subtitled for multiple languages

- Can be streamed online

- Best to design to be co-viewed with a caregiver or teacher

- Messaging is critical

Video: Sesame Workshop Programs

rshilling@apa.org

Twitter: @Russ_Shilling