

# STEAM Programs

## A Jump Simulation Case Study

### THE OPPORTUNITY

The health care industry across the United States, rural health in particular, faces a shortfall of qualified professionals in the Science, Technology, Engineering, Arts and Math (STEAM) career paths in the coming decade. According to the American Hospital Association, around 25 percent of the total U.S. population lives in rural areas, however only 10 percent of physicians practice outside of major metropolitan areas. Furthermore, the health care industry is often left out of national STEAM career reports and data sheets, leaving many qualified graduates unaware of career opportunities in the field.



### THE SOLUTION

Recognizing the need for qualified, highly-skilled professionals amid the shortage in students going into STEAM fields, OSF Innovation is offering age-specific STEAM programming to create pathways into the health care industry for local students. Programs targeted at grade school, high school, pre-med and even retirement-age learners create deep learning experiences that guide students toward local careers in health care.

### THE IMPACT

Since 2013, STEAM programming through Jump Simulation has reached well over 1,000 students through more than 70 programs. Our courses have received overwhelmingly positive evaluations from students, and many participants return to complete multiple sessions. Through a wide reaching scope of STEAM education and hands-on opportunities for local students, Jump is positioning local STEAM talent to meet the health care needs of the next generation.

### JUMP SIMULATION

Jump Simulation, a part of OSF Innovation, is one of the world's largest simulation and innovation centers with the Vision of improving outcomes and reducing costs through excellent training. For more information, visit [www.jumpsimulation.org](http://www.jumpsimulation.org).

### OSF INNOVATION

Launched in 2016, OSF Innovation is the overall umbrella initiative for the planning, structure, goals and services OSF HealthCare uses to innovate for the improvement and transformation of health care.

To learn more, visit [osfinnovation.org/CaseStudies](http://osfinnovation.org/CaseStudies)

Facing a shortage of highly qualified STEAM professionals in the coming decade, OSF Innovation is cultivating the STEAM talent of tomorrow through engaging, interactive programming for area students of all ages.

A 2015 report from the National Science Foundation states that developing a strong workforce capable in STEAM competencies will ensure continued U.S. competitiveness and prosperity. Many national studies indicate a shortage of STEAM graduates coming in the next decade – especially in rural health care with 4,148 rural counties identified as key shortage areas requiring more than 8,000 additional providers.

Studies show that students will be more likely to pursue a career in STEAM fields if they are introduced at an early age. Since 2013, these Jump Simulation programs have been igniting an early passion for STEAM and the health care industry. Targeting specific populations, OSF Innovation is creating pathways for students in grade school, high school or even pre-med.

## STEAM ENRICHMENT IN SCHOOLS

Partnering with local schools, OSF Innovation is taking health care STEAM projects into the classroom with class workshops, mobile content and field trips to Jump. Engineers from Jump give students real-world challenges to solve through engineering solutions over a 10-week curriculum. Jump is also facilitating virtual and augmented reality learning for students at a central Illinois high school through applications with Google Cardboard and Oculus.

## STEAM PROGRAMMING AT JUMP

Students in sixth through 12th grades are given hands-on experiences in anatomy and physiology, nursing and EMS, technology, medical visualization and even robotic engineering using the state-of-the-art facilities at Jump. STEAM Saturdays and Summer STEAM put students in engaging workshops involving unique lab experiences. An ongoing STEAM series tackles more in-depth studies of anatomy and physiology over four separate sessions.

## BEDSIDE STEAM ENRICHMENT PROGRAM

Jump is bringing STEAM programming to students being cared for at OSF HealthCare Children's Hospital of Illinois. Jump offers patients hands-on workshops featuring STEAM-based activities at the bedside. Patients also participate in self-paced continuing learning on their own mobile devices through courses like bioengineering, mini-medical school and medical visualization.

## PRE-MEDICAL IMMERSION EXPERIENCE

Undergraduate students pursuing medical school participate in an intensive, two-week program including medical simulation, clinical shadowing and lecture. Through the program, students are given opportunities and Objective Structured Clinical Examination (OSCE) experience typically reserved for students in medical school. Students completing the program gain a valuable appreciation for the opportunities in Central Illinois and gain strong connections toward returning for medical school and clinical practice.

## STEAM FOR SENIORS

Opportunities in health care and STEAM are not just for kids — Jump also runs programs for lifelong learners such as those enrolled in the Bradley University OLLI Program. Participants see and experience life-changing innovation happening in Peoria and gain in-depth knowledge on common health issues and steps for future health initiatives through OSF HealthCare.

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*"If we at OSF HealthCare can promote all that STEAM has to offer in the health care industry and address roadblocks for those interested in STEAM careers, we have the potential to have a positive impact on clinician shortages in the future."*

– NOEL ADAMS, DIRECTOR OF OPERATIONS

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