

Jessica Johnson

Curriculum Coordinator

Virginia Modeling, Analysis and Simulation Center (VMASC)
1030 University Blvd, VA 23435
Old Dominion University

A. Professional Preparation

Edinboro University	Edinboro, Pennsylvania	Cognitive Psychology	BS, '05
Regent University	Virginia Beach, Virginia	Education/Curr. Instruction	M.Ed, '07
Regent University	Virginia Beach, Virginia	Educational Psychology	Ed.S, '20
Regent University	Virginia Beach, Virginia	Educational Psychology	*PhD. Spring '22

**indicates anticipated completion*

B. Appointments

- 2019- present Curriculum Coordinator, Virginia Modeling Analysis & Simulation Center, Old Dominion University (ODU-VMASC), Suffolk, VA.
- 2018-2019 Instructional Designer, Virginia Modeling Analysis & Simulation Center, Old Dominion University (ODU-VMASC), Suffolk, VA
- 2018-2019 Educator, Isle of Wight Public Schools, Isle of Wight, VA
- 2007- 2018 Educator, Differentiated Instruction Lead Teacher, STEM Instructional Designer, Suffolk Public Schools, Suffolk, VA.

C. Synergistic Activities

Immersive Learning Environments R&D Leadership & Curriculum Design: *learning analytics, cognitive and educational sciences, distributive learning, distributive cognition, metacognitive structures, immersive learning environments, adaptive instructional systems and virtual environments within K-20+ academia and real-world settings spanning UXD, learning science, and human-factors frameworks (experimental design, engineering design process/challenges, modeling and simulation, and advanced learning technologies to enhance learner outcomes:*

1. Researched and designed an innovative competency-model assessment feedback framework based on metacognitive structures to emphasize and enhance learner outcomes. Project encompassed the utilization of xAPI and learning artifact loops within mobile learning platforms. Collaboration between Air Force, ODU-VMASC, and TEDtext LLC.
2. Designed, developed, and organized STEMpowerment workshops for K-12 students, parents, and teachers (2019- present): engineering design challenges utilizing immersive/ advanced learning technology (virtual reality, augmented reality, 3D modeling, and digital fabrication equipment) for broad access to STEM real-world challenges.
3. Designed and organized STEM Under Construction series with K-8 educators in an urban school division (2019- 2020): a professional development series to introduce the engineering

design process with digital fabrication equipment (recording studio, 3D printing, virtual reality/augmented reality, CNC machines, laser cutting, and vinyl cutting) through integration of state educational standards. Participants/teachers became certified on the equipment and designed engineering design challenges for their students integrating the technology for their classrooms.

4. Designed a virtual STEM outreach program (STEM Ahoy!) due to COVID-19 pandemic and school building closures. To date, over 13,500 students, teachers, and families have utilized the curriculum and resources across the United States.
5. Served on multiple STEM and education psychology committees K-20+ to enhance future workforce development in STEM, ICT, ModSim, and Psychology careers and pathways locally and nationally: (2019- present): Virginia Department of Education (VDOE) Modeling & Simulation Curriculum Committee (2020- present): National Center of Simulation Education & Workforce Development Committee at University of Central Florida (2020-present); Tidewater Community College Pre-Apprenticeship Executive Advisory Board (2020-present); Thomas Nelson Community College Industry 4.0 Executive Advisory Board (2020- present); Hampton City Schools Maritime Academy Advisory Board (2019-present); Portsmouth Public Schools STEM and CTE Advisory Board (2019-present); STARBASE Executive Advisory Board, Portsmouth Public Schools (2019- present)
6. Developed and collaborated with Thomas Nelson Community College to create a CADD Career Studies Certificate in Ship Drafting and Design (2020-2022; 6 courses); Collaboration and curriculum design with Tidewater Community College in creation of Women in Skilled Trades Certificate program (2019- present).
7. Designed and implemented a virtual STEM program for the National Parent Teacher Association for nation-wide dissemination (STEM+ Families). Resources developed included: virtual engineering design process introductions, virtual engineering design challenges, At-Home experiments, and related resources for families and schools (background information, procedures, extension activities, and STEM Career Pathways).

Leadership for National/International Associations and Conferences:

Interservice/Industry Training Simulation & Education Conference STEM Committee (2021-present); American Society for Engineering Education Conference reviewer (2020- present); Serious Games Conference Committee (2020- present); I/ITSEC Simulation Committee (2019-2020); National Defense Industrial Association (2019- present); National Education Society (2008-present)

D. Relevant Products

Publications & Peer-Reviewed Journal Articles

Conference Proceedings

Smith, K., **Johnson, J.** “Uniting Modern Educational Communication Protocols with Traditional Educational Taxonomies.” Proceedings of the 2021 MSVE Student Capstone Conference. Suffolk, VA. April 22, 2021.

Johnson, J., Smith, K., Dennis, T., Jimenez, G. “Adaptive Assessment Feedback in Competency Based Learning Ecosystems.” *Proceedings of the Interservice Industry Training, Simulation & Education Conference*. Orlando, FL. November 29-December 3, 2021. (abstract submitted)

Smith, K., **Johnson, J.**, Dennis, T. “Leveraging Legacy Training in Modern Systems: Framework and Implementation.” *Proceedings of the Interservice Industry Training, Simulation & Education Conference*. Orlando, FL. November 29-December 3, 2021. (abstract submitted)

Johnson, J. “Disrupting Learning with Advanced Learning Technologies”. *Proceedings of the 2021 SHE Can STEM Academy Conference*, Virginia Beach VA, April 5-9, 2021.

Johnson, J. “Disrupting Learning with Advanced Learning Technologies”. *Proceedings of the 2021 STEMFest Conference*, Reynolds Community College, Richmond VA, March 1st, 2021.

Johnson, J. “Advanced Learning Technologies within the ModSim Classroom”. *Proceedings of the 2020 Southwest Virginia Higher Education Center Education & Training Conference*, Bristol, VA, December 1, 2020.

Johnson, J. “Charting the course: Integrating advanced learning Technologies to motivate STEM maritime career pathways”. *Proceedings of the 2020 Tidewater Community College Smart Campus Technology Day*, Virginia Beach, VA, September 26, 2020.

Johnson, J. “Serious Games for STEM Career Pathways”. *Proceedings of the 2020 Serious Play Conference*, virtual conference, June 23- 25, 2020.

Kosteczko, J., Smith, K., **Johnson, J.**, Diaz, R. “Virginia Digital Shipbuilding Program (VDSP) – Building an agile modern workforce to improve performance in the shipbuilding and ship repair industry.” *Proceedings of the 2020 ASEE Annual Conference & Exposition*. Virtual Online, June 21-24, 2020. doi: <https://doi.org/10.18260/1-2--35487>

Johnson, J. “Charting the course: Integrating advanced learning technologies to motivate STEM maritime career pathways”. *Proceedings of the 2020 Norfolk Naval Shipyard STEM Conference*, Portsmouth, VA, March 23, 2020.

Johnson, J. “Deploying Integrative Instructional & Immersive Learning Environments with Engineering Design Challenges”. *2020 National Center for Simulation Student Training Day*, Orlando, FL, February 24- 25, 2020.

Johnson, J. “Advanced Learning Technologies within the ModSim Classroom”. *Proceedings of the 2019 Interservice Industry Training, Simulation and Education Conference*, Orlando, FL, December 2-5, 2019.

Johnson, J. “Advanced Learning Technologies within the ModSim Classroom”. *Proceedings of the 2019 Southwest Virginia Higher Education Center Education & Training Conference*, Bristol, VA, November 12-13, 2019.

Johnson, J. “STEM Workforce of the Future”. Norfolk Naval Shipyard, *Proceedings of the STEM Workforce Conference*. Norfolk, VA. November 15, 2019.

Smith, K., **Johnson, J.**, Bothel, T. “Leveraging a STEM Ecosystem to Promote Connections throughout the Maritime Workforce Pipeline.” *Proceedings of the 2019 International Conference on Social and Education Sciences*, Denver CO, October 7-10, 2019.

Johnson, J., Bothel, T., & Smith, K. “Charting the course: Integrating advanced learning Technologies to motivate STEM maritime career pathways”. *Proceedings of the 2019 International Conference on Social and Education Sciences*, Denver CO, October 7-10, 2019.

Johnson, J. Neuroscience of STEMgagement: Leveraging STEM Learning Ecosystems. *Proceedings of the Virginia Military Institute STEM Conference*, Lexington VA, September 30-October 1, 2019.

Johnson, J. “Disrupting Learning with Advanced Learning Technologies”. *Proceedings of the 2019 Capital Hill Modeling and Simulation Expo*, Washington, D.C, July 10, 2019.

Johnson, J. “Disrupting Learning with Advanced Learning Technologies”. *Proceedings of the 2019 ModSim World Conference*, Norfolk, VA, April 22- 24, 2019.

Johnson, J., Bothel, T., & Smith, K. “Charting the course: Integrating advanced learning Technologies to motivate STEM maritime career pathways”. *Proceedings of the 2019 M&S Leadership Summit*, Norfolk, VA, February 25, 2019.

Presentations, Abstracts, and Demos

Johnson, J., Smith, K., & Russel, J. “Operationally Directed Instructional Network- Engineering Library (ODIN-EL)”. *Proceedings of the Navy Afloat Maintenance Training Strategy (NAMTS) Conference*, Virginia Beach, VA. April 5- 9, 2021.

Johnson, J., Smith, K., Dennis, T., & Jimenez, G. “Adaptive Assessment Feedback in Competency Based Learning Ecosystems.” *Proceedings of the Interservice Industry Training*,

Simulation & Education Conference. Orlando, FL. November 29-December 3, 2021. (abstract submitted)

Smith, K., Johnson, J., Dennis, T. “Leveraging Legacy Training in Modern Systems: Framework and Implementation.” *Proceedings of the Interservice Industry Training, Simulation & Education Conference*. Orlando, FL. November 29-December 3, 2021. (abstract submitted)

E. Grants & Contracts Awarded:

Johnson, J. (2021- 2023) DSB+STEM: Gamified Educational STEM Careers and Simulations. Newport News Public Schools, Newport News Shipbuilding (\$185,000) in partnership with Virginia’s Modeling, Analysis & Simulation Center at Old Dominion University (ODU-VMASC).

Smith, K. **Johnson, J.** (2021). TED Text: SMS based Micro-Learning. USAF in partnership with Virginia’s Modeling, Analysis & Simulation Center at Old Dominion University (ODU-VMASC). (\$58,500)

Smith, K. **Johnson, J.** (2020- 2023) Operationally Directed Instructional Network- Engineering Library. Valkryie and Department of Defense. (\$605, 500).

Garcia, H. **Johnson, J.** (2020-2021). Human-Machine Inclusive Interface Design: Accessible Interfaces for Underrepresented Populations. Commonwealth Center for Advancement Manufacturing, Va. (\$30,000) in partnership with Virginia’s Modeling, Analysis & Simulation Center at Old Dominion University (ODU-VMASC).

Johnson, J. (2020-2021). STEMpowerment Engineering Week. New College Institute, Martinsville, Va. (\$17,000).

Johnson, J. (2020) National PTA and Huntington Ingalls Industries: National STEM+ Families Program. (\$10,000).

Johnson, J. Donors Choose (2016). STEM Resources for K-12 Education. (\$15,000)

Johnson, J. Donors Choose (2014). STEM Resources for K-12 Education. (\$5,000)

Johnson, J. Donors Choose (2013). STEM Resources for K-12 Education. (\$5,000)

Grants Applied For:

Johnson, J., Smith, K. (2020). Navigating the Engineering Design Process Through Augmented Reality Simulations (NavED). Grant submitted to National Science Foundation- Advanced Informal STEM Learning (AISL); \$296,621. (*Grant Award Status Pending*)

Johnson, J., Smith, K. (2020). Youth Builders Pre-Apprenticeship Program: Propelling Advanced Technology Education for the Maritime Industry. Grant submitted to National Science Foundation- Advanced Technical Education (ATE); \$372, 529.

Johnson, J., Smith, K., Shen, Y., Jovanovic, V., Loney, M., Tonelson, S. (2020). Reframing Failure: An Immersive Simulation Approach to Experimental Design for Urban Secondary Students. Grant application submitted to National Science Foundation- Innovation and Technology for Education, Students, and Teachers (ITEST); \$620,000. (*Grant Award Status Pending*)

Johnson, J., Smith, K., & Bothel, T. (2020). Envision, Enact, Embody (E3): Empowering Tomorrow's Naval STEM Workforce. Grant application submitted to Office of Naval Research Science; \$750,00.

Johnson, J., Smith, K., & Bothel, T. (2020). Maritime Careers Experience (MCx). Grant application submitted to Epic Games MegaGrant; \$535,000. (*Grant Award Status Pending*)

Johnson, J. (2020). Dive Into Robotics: Underwater ROVs Summer Camp. Grant application submitted to American Society of Naval Engineers Tidewater Section. (\$5,000).

Giles, B., **Johnson, J.,** Joe, M., Garner, J., Crompton, H., Shetty, S., & Smith, K. (2020). STEM University Partnership (STEMup!). Grant application submitted to National Defense Education Program for Science Technology Engineering & Math (NDEP STEM); \$2,995,000.

Johnson, J., Smith, K., & Bothel, T. (2019). Girls Making Waves: Propelling Immersive, Experiential STEM Informal Learning. Grant application submitted to National Science Foundation; \$1,865,000.

Smith, K., **Johnson, J.** & Bothel, T. (2019). Engaging and Empowering Future and Current Digital Shipbuilding Workforce Through Transdisciplinary Experiences in Artificial Intelligence. Grant application submitted to Office of Naval Research; \$750,000.

Smith, K., **Johnson, J.,** & Diaz, R. (2019). Workforce Development in Appalachia to Support Shipbuilding Demand. Department of Labor; \$600,000.