**Joseph A. Isaac**

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**Qualifications**

* **Ten years** *of secondary educational experience in biological sciences and biotechnology*
* **More than *7*** *years of experience in biological research setting including virology, immunology. bacteriology, development vaccines and transgenic organisms*
* **More than 4** *years of experience in secondary science curriculum design built from the Next Generation Science Standards in an educational technology context*
* **Proven ability** *to work effectively in both independent and team situations with positive results*.
* **Able** *to perform research on a variety of topics and produce comprehensive results*
* **Excellent** *oral and written communication skills*
* **Quick learner** *with the ability to grasp new ideas, concepts and methods*
* **Experienced** *in adapting STEM education curricula to more accurately reflect student interest and background significance*
* **Possesses** *an extensive network of qualified and experienced, award winning STEM education professionals*
* **Able** *to coordinate and work well with top level school district personnel, school administrators as well as local leaders in traditionally underserved communities*
* **Exceptionally** *adept to be successful in various educational environments****; ability to provide instruction in a variety of subjects while consistently embedding critical and higher order thinking skills***

**Education**

* Howard University, Washington DC, 20059

**Bachelor of Science,** May 1994

**Major:** Biology **Minor:** Allied Health Science

* Trinity University, Washington DC, 20017

**Master of Arts in Teaching,** December 2005

**Concentration:** Secondary Science Education

* Texas Tech University, Lubbock, TX, 79401

**Doctor of Philosophy** Candidate, Projected Finish, 2019

**Concentration:** Curriculum and Instruction, STEM Education, with an emphasis on Global

Collaborative STEM Education

**Employment Experience**

* *STEM Education Consultant, Self-Employed*

**Isaac STEM Ed Consulting**

[www.isaacedconsulting.com](http://www.isaacedconsulting.com)

08/14 – Present

**Current contracts:**

* Science Education Content Developer - Google
* Curriculum development and teacher training - Heritage STEM Camp/ Leadership Academy
* Biotechnology Curriculum Development – Caribbean Examinations Council
* Biotechnology Laboratory and Curriculum Development – Washington University of DC
* Curriculum Trainer/Developer – Discovery Education

**Previous contracts:**

* STEM Ed Consultant – United Negro College Fund (Merck Science Initiative)
* Curriculum Developer – Legends of Learning
* Curriculum design – Vanderbilt University/Abu Dhabi educational reform project
* Standardized Assessment Development – Victory Productions
* *Planet 3*

**Educational Curriculum Writer**

01/15 – 6/17

[www.exploreplanet3.com](http://www.exploreplanet3.com)

* Write and review science curricula materials that will be embedded in the educational gaming environment
* Produce high-quality content under tight deadlines in an agile environment
* Collaborate with producers, designers, and developers to conceptualize, build and write highly engaging, interactive digital content
* Implement and respond to teacher reviewer and expert feedback
* Research and develop accurate science content and assets
* Deliver content in a clear, age appropriate writing style
* Hold accountability for the instructional and educational quality of the product
* Continuously critically evaluate and assess the product and processes to embody the continuous improvement of a model interactive digital learning platform
* Coordinate and facilitate teacher and student pilot testing programs
* *Contractor, National Science Foundation, Division of Research and Learning in Formal and Informal Settings, Division of Molecular and Cellular Biosciences*

**Albert Einstein Distinguished Educator Fellow**

08/12 – 08/14

<https://science.energy.gov/wdts/einstein/fellows-central/alumni-fellows/>

* Oversaw the educational outreach effort for a collaborative bioscience project with Howard University and Anacostia HS
* Oversaw K12 educational partnership efforts with post-secondary bioscience researchers
* Guided several grant panels for Molecular and Cellular Bioscience Research
* Generated a brochure for post-secondary bioscience researchers describing ways and methods to include K12 STEM in their research efforts
* Established a partnership with the Division of STEM Education in the US Virgin Islands to establish Engineering and Biotechnology Academies in the two high school on St. Thomas
* Generated report on Broadening Participation in STEM education to underrepresented groups
* Generated data driven analysis of practices and trends of research funding by the Division of Research and Learning in Formal and Informal Settings
* *McKinley Technology High School, Washington, DC* [*http://www.mckinleytech.org*](http://www.mckinleytech.org/)

**Chair, Biotechnology Department**

**Teacher, Biotechnology II, Molecular Biotechnology, Plant Biotechnology, Biotechnology Senior Project, Bioethics**

07/04 – 08/12

* Implemented technology embedded science curriculum for over 1000 students in an urban setting
* Actively communicated with parents to foster a productive learning community
* Collaborated in the formation of curriculum construction on a local and national level
* Set up and taught pilot Biotechnology curriculum for District of Columbia Public Schools
* Student recruitment specialist
* Admissions and personnel committee member
* Responsible for an annual budget of over $200,000
* Procured donation lab equipment with a value of over $500,000
* Faculty Advisor, HOSA (Washington, D.C. Chapter)
* *Friendship-Edison Collegiate Academy, Washington, DC*

**Teacher, 11th and 12th Grade and Advanced Placement Biology, World History, Washington D.C. History**

07/02 – 07/04

* Implemented science and history curriculum for student in an urban setting
* Collaborated in the formation of curriculum construction on a local and national level
* Class of 2004 Co-Faculty Advisor
* *Department of Defense, Uniformed Services University, Bethesda, Maryland*

**Biological Research Technician**

03/97 – 07/02

* Performed HIV vaccine development research
* Coordinated laboratory operations for staff of nine researchers
* Troubleshot and resolved various departmental issues
* Produced and purified recombinant viruses
* Maintained financial records for grant spending, equipment and supplies
* *National Institutes of Health, National Institute of Dental Research & Core Facility- Bethesda, Maryland*

**Laboratory/Transgenic Technician**

03/95 – 01/97

* Ran experiments and kept detailed records of immunodeficient rodents and primates
* Analyzed data and assisted in the preparation of manuscripts, publications and journals

**Publications**

Cao, C. A., Sahabi, S. W., & Isaac, J. A. (2018). *Investigating the relationship between 8th grade science teachers' job satisfaction, self-efficacy, work conditions, and goal-related supports in Finland and the United States using TIMSS data* (7th ed., International Conference New Perspectives in Science Education, pp. 637-641). Florence, Italy: Libreriauniversitaria.it.

Cao, C. A., Sahabi, S. W., & Isaac, J. A. (2018). *Project-based learning and assessment unit plans* (7th ed., International Conference New Perspectives in Science Education, pp. 583-586). Florence, Italy: Libreriauniversitaria.it.

Carpenter, D., Spires, F., & Isaac, J. (2018). Twenty first century skills inspired through global STEM projects. In T. Spuck (Ed.), *Best practices in STEM education: Innovative Approaches from Einstein Fellow Alumni* (2nd ed.). New York: PETER LANG.

**Additional Leadership Roles**

* **Presenter –** (2018) International Conference on Urban Education, Nassau, Bahamas *“Developing Global Collaborative Learning Communities through STEM-based Project Based Learning”*
* **Presenter *–*** (2018) New Perspectives in Science Education International Conference, Florence, Italy *“Project-based Learning and Assessment Unit Plans”* and *“Investigating the Relationship Between 8th Grade Science Teachers’ Job Satisfaction, Self-efficacy, Work Conditions, and Goal-related Supports in Finland and the United States Using TIMSS Data”*
* **Presenter** – (2017) Caribbean Science Education and Technology Conference, Kingston, Jamaica *“The Use of Global Collaboration to Enhance STEM Efficacy in the Caribbean Region”* and *“Recruiting and Retaining Caribbean Students in STEM Education”*
* **Presenter**  - (2017) NSTA National Conference, Los Angeles, CA *“NGSS and Global Collaboration in the Science Classroom”* and *“NGSS Project-Based Learning and Assessment Unit Plans”*
* **Presenter –** (2016) NSTA National Conference, Nashville, TN *“Implementing Global Collaborative Projects in the Science Classroom: Best Practices and Lessons Learned”*
* **Presenter –** (2015) NSTA Regional Conference, Philadelphia, PA *“Implementing Global Collaborative Projects in the Science Classroom”*
* **Presenter –** (2014) International Conference on Urban Education, Montego Bay, Jamaica *“STEM Education in the Caribbean: Challenges and Steps Forward”*
* **Presenter** – (2014) Noyce Conference, Washington, DC *“International and Online Collaborations for Citizen Science”*
* **Presenter –** (2014) NSTA National Conference, Boston, MA *“Five Easy Pieces – From STEAM to Telescopes: A Teacher Leadership Montage”*
* **Presenter –** (2014) Quality Education for Minorities (QEM) Network, Faculty Early Career Development Proposal Workshop, Baltimore, MD *“Strengths and Weaknesses of K-12 Outreach Plans”*
* **Presenter and Professional Developer –** (2013) St. Croix and St. Thomas, US Virgin Islands *“Successful STEM Education: Models and Ideas”*
* **Presenter** – (2013) STEM-tech Conference, Atlanta, GA *“Recruiting and Retaining Caribbean Students in STEM”*
* **Presenter**- (2013) STEM-tech Conference, Atlanta, GA *“SMART Academy-Center for Excellence; Building Science Leaders for Tomorrow”*
* **Presenter**- (2013) MARC U-Star Honors Program Awards Banquet, University of the District of Columbia, Washington DC – Keynote Address *“Future Leaders in STEM”*
* **Presenter** – (2013) Center for Excellence in Education: Teacher Roundtable, Manassas, VA *“The Albert Einstein Distinguished Educator Fellowship – Experiences in STEM Education”*
* **Presenter** – (2013) International Teacher Scientist Partnership Conference (ITSP), Boston, MA

*“Fostering College Research Partnerships at an Inner City STEM School: Challenges and Triumphs”*

* **Presenter** - (2013) International Science, Mathematics and Technology Education Conference (ISMTEC), Bangkok, Thailand *“Ramping Up STEM Outreach: Ways to Create Meaningful Researcher-Educator Partnerships”*
* **Presenter** *–* (2010) Transatlantic Science Education Workshop, Oslo, Norway

*“An Overview of the Biotechnology Program at McKinley Technology High School, Washington, D.C.”*

* **Presenter** *-* (2008) NABT National Conference, Memphis, Tennessee

*“Using Project Based Education in your Biotechnology Program”*

* **Presenter** *–* (2007) NABT National Conference, Atlanta, Georgia

*“Developing a High School Based Biotechnology Program: Lessons from an Inner City Model”*

* **Presenter/Trainer** – (2006) Fulbright Educator Exchange, London, UK
* **Educational Consultant**- (2013) String Theory High School STEM Program, Philadelphia, PA
* **Educational Consultant** *–* (2008) Portsmouth City Public Schools
* **Educational Consultant -** (2008- 2010) TBED.21 - Technology Based Economic Development for the 21st Century
* **Educational Consultant** *–* (2008-2010)- African Ancestry.com
* **Educational Consultant** *-* (2007-2010) – Philadelphia Biotechnology and Life Sciences Institute
* **Judge –**  (2011) - Bio Genius Challenge Science Competition
* **Judge** – (2013) – eCYBERMISSION Science Competition
* **Judge** *–* (2013) – Joint Science Education Project (JSEP)
* **Trainer/Facilitator –**(2006-2010) *CSI McKinley* Forensic Science Workshop, Washington, DC
* **Trainer/Facilitator –**(2011) Howard University Plant Biotechnology Summer Workshop, Washington, DC
* **Trainer/Facilitator –** (2011) CTE (Career and Technical Education) Biotechnology Teacher Training Institute, Washington, DC

**Present Affiliations**

* American Education Research Association
* National Association of Biology Teachers
* National Science Teacher Association
* D.C. Biotech
* Triangle Coalition for Science and Technology Education
* Omega Psi Phi Fraternity, Inc., Kappa Psi Chapter – Member, Chaplain (1998-2000)
* Dr. William Montague Cobb Education Foundation – Secretary (2013 – 2015)

**Additional Education**

* Over 100 Seat Hours of Science and Biotechnology Education Coursework
* Introduction to Biotechnology (2007), Protein Biotechnology (2008), Montgomery College
* Advanced Placement Teacher Certification Course (2003), College of William & Mary
* Fifteen Credit Hours of Biomedical and Bioscience Courses taken at FAES Graduate School at NIH (1997-2003)

***References furnished upon request***