Christina Anlynette Crawford

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Diversity Statement

The world and the humans who live in it are only truly valued when individuals share unique, diverse, and sometimes opposing perspectives. The celebration of diversity and the inclusion of all ideas creates a critical consciousness of the world today and paves the way to a sustainable and prosperous future.

Education

Ph.D Education - Curriculum & Instruction — August 2019 — Present

University of Houston

Science, Urban Education, Black Feminist Theory

MS. Education - Curriculum & Instruction — August 2007 — May 2009

University of Houston

Science Education

BS. Biology — January 2002 — December 2005

Texas A & M University - Corpus Christi

Biomedical Science

Work experience

William Marsh Rice University — June 2013 — Present

Associate Director for Science & Engineering

- Creates designs, develops, instructs, and analyzes science curricula for elementary and secondary educators and undergraduate students.
- Evaluates the effectiveness of SST educational programs through the development and implementation of appropriate assessments and surveys.
- Collaborates with Director, Executive Director, faculty, external stakeholders, staff, and students to develop and implement STEM programming, workshops, short courses, and seminar and evaluate their effectiveness.
- Seeks out external funding opportunities through grant writing, sponsorships,

and gifts for sustaining K-12 educational programs.
- Cultivates and maintains collaborations with colleagues at other educational institutions.
- Assists in the creation of technical reports to external agencies.
- In charge of creating, tracking, and reporting participant materials and supply budgets

Houston ISD — July 2012 — July 2013

Professional Support & Development - Teacher Development Specialist

- Observe instructional practice and provide a formative assessment of strengths and weaknesses.
- Provide real-time feedback and access to relevant development opportunities.
- Provide critical on the job coaching to teachers in support of their professional development.
- Work with teachers and principals to review performance data and development plans, and to identify teachers' strengths and prioritize most pressing development needs to increase student achievement Help identify and connect teachers to appropriate PD opportunities to meet priority needs.
- Monitor teacher's efficacy in applying new skill and impact on student learning, adjust approach as necessary to achieve goals for teacher improvement and student achievement.
- Provide input to the Primary Appraiser as one input into the appraisal process.
- Partner with Principals and SSOs to ensure focus is aligned to development priorities for individual teachers and across the campus.
- Collaborate with other Teacher Development Specialists within their team and across teams to think strategically about PD - e.g., review performance data, reflect on themes, determine how to aggregate and prioritize needs, and allocate resources accordingly.
- Tap into school-based resources (e.g., Teacher Leaders, Dept. Heads) to deliver PD support, e.g., mentoring, modeling, facilitation, training, etc.
- Lead group learning opportunities focused on increasing teacher effectiveness in a specific area.
- Identify high need training topics, work with PD Central Support to develop high-value training, deliver training where appropriate and able.
- Improve instructional, content, and developmental expertise on an ongoing basis by participating in research-based learning opportunities.

Cypress Fairbanks ISD — August 2007 — July 2012

Classroom Teacher - Biology

- Trained teachers and staff in proper educational techniques.
- Took lead position in five Biology classes, and TAKS/EOC preparation.
- Mentored first year science teachers.
- Brought ideas to the Biology team which aligned curriculum and instruction with student growth.
- Created a Proactive classroom environment in which the students were able to gain cooperative learning experiences.
- Provided students Inquiry based lesson which helped develop their scientific

minds.

- Trained in AVID based instruction which was used daily to promote growth in ESL and LEP students.
- Member of the Differentiated Instruction Committee
- 2010- Awarded Wildcat Exemplary Award
- 2011- Awarded Team Leader Curriculum Guidance Award

Grant Funded Projects

NSF NanoEnabled Water Treatment (NEWT) # 1449500 — February 2016 — Present

Pre-College Programs Facilitator

Rice University, Arizona State University, University of Texas-El Paso, Yale University

- NEWT Research Experience for Teachers (RET)
- NanoEnvironmental Engineering for Teachers (CEVE 565)
- NanoAcademies
- Young Scholars
- Teacher Leaders Engineering Network (TaLENt) - Supplement
- NEWT Virtual Tutorial Program
- Science Alternatives for K-12 Education (SAKE)

NSF Precise Advance Technology and Health Systems for Underserved Populations (PATHS-UP) # 1648451 — June 2018 — September 2019

Pre-College Programs Facilitator

Rice University

- PATHS-UP Research Experience for Teachers (RET)
- Computing for Health -Summer Academy

NSF Robert Noyce Grant # 1852821 — June 2019 — Present

Texas Leadership Initiative for Inquiry Science Teaching (TLIIST)

- Rice University - Teacher Mentor

Synergistic Teaching Activities

Bioc 520/521- Teaching Biology via Learning Active — 2013 — 2017

Rice University

3-hour graduate course - Secondary Biology teachers enhanced content knowledge, visit research labs, attend lectures by Rice researches, and focus on new developments in pedagogy and research on how students learn biology.

Conoco Phillips Rice University Applied Mathematics Program — 2014 — Present

Rice University

As program facilitator, I provided a unique and innovative professional development opportunity for 8th-grade science and mathematics teachers and Algebra I and Biology teachers. The program increases mathematics and science content and pedagogical

knowledge of school teachers by preferentially selecting pairs of mathematics and science teachers from the same campus and supporting their further development through intensive professional development.

CEVE 565 - NanoEnvironmental Engineering for Teachers
2016 — Present

Rice University

3-hour graduate course. K-12 teachers increase the content knowledge of educators and empower them to implement rigorous project-based engineering activities on the topic of water sustainability in the classroom.

Schlumberger Science Teacher Academy
July 2014 — July 2014

Mtwara, Tanzania

1-week program in Mtwara, Tanzania, focused on enhancing Science Inquiry Practices with K-12 teachers.

Publications

1. Crawford, C., Beason-Abmayr, B., Eich, E., Scott, J., & Nichol, C. (2014). Going Viral. The Science Teacher (National Science Teachers Association), 81(6), 51–. https://doi.org/10.2505/4/tst14_081_06_51
2. Crawford, C., Nevils-Noe, G. & Szymczyk, A. (2014). R-STEM reaches out. Rice at Large, Issue 26, p. 4.
3. Crawford, C. A. (2017). Principles of Biology. Salem Press.
4. Crawford, C. A. (2018). Principles of Biotechnology. Salem Press.
5. Crawford, C. A., and Nichol, C.,(2018) Nanotechnology Scavenger Hunt! - Activity, TeachEngineering.org, University of Colorado Boulder
6. Enemchukwu, C., Crawford, C., Mei, H, Verduzco, R. & C. Nichol, (2019) Designing Polymers to Clean Water - Activity,TeachEngineering.org, University of Colorado Boulder
7. Antoine, A., Crawford, C., and Nichol, C.,(2019) Local High School Students Learn How Computer Science Can Improve Health, Rice At Large, Fall, 40, 7.
8. Crawford, C. (2020). How to Stop Internalizing Microaggressions. Women in Higher Education, 29(10), 6–14. https://doi.org/10.1002/whe.20900

Conference Proceedings

1. Nichol, C. A., & Obenland, C., & Chow, A., & Crawford, C. A., & Avendano, C. (2017, June), Board # 27: Promoting STEM Education in Community College Students via Research Paper presented at 2017 ASEE Annual Conference & Exposition, Columbus, Ohio. 10.18260/1-2--27819
2. Nichol, C. A., & Chow, A., & Obenland, C., & Crawford, C. A., & Avendano, C. (2017, June), Board # 115: Nanotechnology Research Experience for Teachers Enhancing STEM Education Paper presented at 2017 ASEE Annual Conference & Exposition, Columbus, Ohio. 10.18260/1-2--27699
3. Nichol, C. A., & Crawford, C. A., & Loyo-Rosales, J., & Chow, A., & Obenland,

C. (2018, June), Nano-environmental Engineering for Teachers (Work in Progress) Paper presented at 2018 ASEE Annual Conference & Exposition, Salt Lake City, Utah. 10.18260/1-2--29642

4. Crawford, C. A., & Nichol, C. (2019, June), Water Sustainability: Science and Engineering Activities for the High School Classroom (Resource Exchange) Paper presented at 2019 ASEE Annual Conference & Exposition, Tampa, Florida. 10.18260/1-2--33546
5. Crawford, C. A., & Nichol, C., & Wimpelberg, R., & Larson, J. S., & Cook-Davis, A. (2020, June), WIP: Teacher Leader Engineering Network (TaLENt): A Collective Impact Model for K-12 Engineering Teacher Leaders Paper presented at 2020 ASEE Virtual Annual Conference Content Access, Virtual Online. 10.18260/1-2--35573

Conference Presentations

1. Nichol, C., Crawford, C., and Polan, J. Incorporating Polymer Chemistry in Undergraduate & High School Curricula, American Chemical Society National Meeting. Orlando, Florida. April 2019.
2. Antoine, A., Crawford, C. and Ramirez, R., "STEM for the Culture," 12th Annual Texas STEM Conference, Henry B. Gonzalez Convention Center. San Antonio, TX. January 2019.
3. Antoine, A., and Crawford, C., "AMP! Up Your STEM Classroom," 11th Annual Texas STEM Conference, Moody Garden Convention Center. Galveston, TX. February 2018.
4. Crawford, C., "Guess What: Reviewing for Biology EOC," Conference for the Advancement of Science Teaching (CAST). San Antonio, TX. November 2017.
5. Crawford, C., and Szymczyk, "NanoSteps to Nanotechnology," Conference for the Advancement of Science Teaching (CAST). San Antonio, TX. November 2017.
6. Nichol, C., Chow, A., Obenland, C., A., Crawford, C., and Avendano, C., "Nanotechnology Research Experience for Teachers Enhancing STEM Education," Board #115. ASEE Annual Conference & Exposition. Columbus, OH. June 2017.
7. Antoine, A., and Crawford, C., "Heat Check: An Algebra I & and Biology Inquiry Experience," Texas STEM Conference, InterContinental Hotel. Addison, TX. January 2017.
8. Crawford, C., "Going Viral," Conference for the Advancement of Science Teaching (CAST). San Antonio, TX. November 2016.
9. Crawford, C., "Guess What: Reviewing for Biology EOC," Conference for the Advancement of Science Teaching (CAST). San Antonio, TX. November 2016.
10. Antoine, A., and Crawford, C., A New Lease on Life,? Houston STEM Education Day, George R. Brown Convention Center. Houston, TX. April 2016.
11. Antoine, A., Crawford, C., and Szymczyk, A., Hanging in the Balance,Conference for the Advancement of Science Teaching (CAST), Fort Worth Convention Center. Fort Worth, TX. November 2015.
12. Crawford, C., Reviewing Biology: Can You Guess What?? Conference for

the Advancement of Science Teaching (CAST), Fort Worth Convention Center. Fort Worth, TX. November 2015.

13. Crawford, C., Lawton, E., and Pillow, V., "Teaching Biology Via Active Learning: Biology Symposium," Rice University. Houston, TX. March 2015.
14. Crawford, C., "Cell Structure and Function," RESST 1-Day Biology Workshop, Rice University. Houston, TX. February/March 2015.
15. Antoine, A., and Crawford, C., "New Lease on Life," Region 4 Science Conference. Houston, TX. February 2015.
16. Crawford, C., "Reviewing Biology with Games," Region 4 Science Conference. Houston, TX. February 2015.
17. Crawford, C., "Biomolecule Misconceptions," Texas Regional Collaborative Biology Round Robin. Austin, TX. September 2014.
18. Crawford, C., "Evacuate Houston! How Classification Can Save Your Life," Houston Independent School District. Houston, TX. September 2014.
19. Crawford, C., "Biodiversity," Houston ISD 2014 Fall Secondary Science Summit: Critical Thinking in Science. Houston, TX. September 2014.
20. Crawford, C., and Eich, E., Reviewing Biology with Games,? Region 4 Science Conference. Houston, TX. February 2014.
21. Crawford, C., and Szymczyk, A., Why does Fruit Float,? CAST Science Teachers Association of Texas. Houston, TX. November 2013.
22. Crawford, C., and Szymczyk, A., America's Next Top Model Model, Sally Ride Science Festival. Houston, TX. October 2013
23. Crawford, C., What Makes a Cell Aldine ISD Staff Development. Houston TX. August 2013.
24. Crawford, C., and Dodd, J., Using Rubrics to Assess Inquiry, Texas Regional Conference. Austin, TX. July 2013.

Professional Affiliations

American Society For Engineering Education — **April 2017 — Present**

Professional Member

Divisions:

- Pre-College Engineering Education
- Commission for Diversity Equity & Inclusion

National Science Teaching Assocation — **June 2013 — Present**

Regular Member

Current Journal - The Science Teacher

Science Teachers Association of Texas — **November 2015 — Present**

Regular Member

Qualifications

Texas Teacher Certification in Life Sciences grades 8-12

References

References available upon request.