

# CHEMISTRY BREAKTHROUGHS WITH ISIAH M. WARNER



**Professor Isiah M. Warner** is Boyd Professor of the LSU System and West Professor of Chemistry. He is an analytical chemist with research in fluorescence spectroscopy and ionic liquid chemistry applied to solid phase ionic materials. He has 380 refereed publications and an h-index of 65. He has produced 70 PhDs; more than half are women and more than a third underrepresented minorities. Mentoring is a focus of his educational effort to move students to higher levels of Bloom's Taxonomy. His combined efforts in research, mentoring, and education have guided hundreds of students to STEM careers and earned him many awards including:

- 1) International Journal Nature Award for Mentoring in 2019
- 2) Fellow of National Academy of Inventors in 2017
- 3) American Academy of Arts and Sciences in 2016
- 4) SEC Professor of the Year in 2016
- 5) ACS Award in Analytical Chemistry in 2013
- 6) ACS Award for Encouraging Disadvantaged Students into the Sciences in 2003
- 7) HHMI Professor in 2002;
- 8) AAAS Lifetime Mentor in 2000
- 9) Carnegie Foundation for Advancement of Teaching/CASE Louisiana Professor of the Year in 2000
- 10) Presidential Award (President Clinton) for Excellence in Science, Mathematics, and Engineering Mentoring in 1997

## OVERVIEW:

**HOMETOWN:**  
BUNKIE, LOUISIANA

**EDUCATION:** BS, SOUTHERN UNIVERSITY, 1968; PHD, UNIVERSITY OF WASHINGTON, 1977

**CURRENT ROLE:** VICE PRESIDENT FOR STRATEGIC INITIATIVES, PHILIP W. WEST PROFESSOR OF ANALYTICAL AND ENVIRONMENTAL CHEMISTRY, AND HOWARD HUGHES MEDICAL INSTITUTE PROFESSOR, LOUISIANA STATE UNIVERSITY; BOYD PROFESSOR, LSU SYSTEM

**FUN FACT:** I LOVE TO COOK, SING, PLAY SAXOPHONE, AND DANCE

# INTERVIEW



**1. SHARA ZEITLIN:** Although February was an important month to recognize African American's major achievements, I believe that black history should be celebrated throughout the year. It is not just a time where we reflect upon African Americans who made impactful contributions in the past, but also those who are presently making history and playing a big role in the black community today. It is a pleasure to meet you Dr. Warner! What inspired you to learn Chemistry?

**DR. WARNER:** It was my high school English teacher. She knew that I was very bright and got me into a summer chemistry institute that literally changed my life. Those who did well in the institute got to skip the first year of chemistry if they attended Southern University. That was an easy decision

for me since I had a full scholarship to attend Southern. However, it wasn't easy jumping into sophomore chemistry. The chair, Dr. Vandon White, heard that we were grumbling about the difficulty and called us into his office for a pep talk. He told each of us our singular characteristic that would make us a great success, and when he got around to me, he said, "Mr. Warner, you will have your PhD before you're 30." I had no idea what a PhD was, but once I did, I aspired to get one. So that is what brought me along; there were mentors along the way that helped and guided me.

**2. SHARA ZEITLIN:** That must be great to have such a strong support system to pursue your passion. Having mentors along the way seems like it definitely impacted you to become one yourself. You've been a role model for many people, especially for black students & other underrepresented communities through your mentorship style. What about mentorship do you love most?

**DR. WARNER:** It is the feeling that I'm helping some-one. I wouldn't be on the path I'm on had there not been persons in place for me, so it's important for me to help others. I'm actually writing a book about mentoring and does not have an exact title yet.

**3. SHARA ZEITLIN:** That is great! I think a lot of people would be interested in reading your book. Tell me about your experience with mentoring PhD students & undergraduates. How many students? What was your mentorship style?

**DR. WARNER:** The number of students is difficult to count since I quite often encounter students who say that I was a mentor to them. However, I do not always remember the exact incidences. If I had to estimate, I would say several hundred. Maybe more! My mentoring style is to provide students with options to achieve their goals and let them make the final decision. In that way, they have ownership of the decision.

**4. SHARA ZEITLIN:** I have read that you spent the past few decades creating novel materials called GUMBOS — For “Group of Uniform Materials Based on Organic Salts”. Tell me more about that.

**DR. WARNER:** I worked in ionic liquid chemistry for a while, and those are organic salts that have low melting points—less than 100 °C. I was fascinated with this chemistry and how you can manipulate the chemistry of those liquids simply by changing the counterions. It occurred to me that if you were to do the same thing in the solid state, it would be just as fascinating. So that’s what we are doing. We already have several acquired or pending patents in this area.

**5. SHARA ZEITLIN:** How would you describe the current focus of your work?

**DR. WARNER:** I am nearing retirement and there are still many interesting things about GUMBOS chemistry that will encourage me to continue to pursue that chemistry. I am particularly interested in biological applications of GUMBOS.

**6. SHARA ZEITLIN:** Where do you hope to see the field as it pertains to African Americans in the next 5-10 years?

**DR. WARNER:** I am beginning to see more young African Americans doing some interesting chemistry. Therefore, the numbers are growing and many of them are mentoring and helping persons younger than themselves. I hope that this continues such that diversity in science continues to grow and multiply.

**7. SHARA ZEITLIN:** What’s one piece of advice you would like to give other African American chemists as they pursue their career path & goals?

**DR. WARNER:** The advice I would give would be to hang in there, do your best, challenge yourself, and look for positive mentors. Look for that person or persons who give you positive energy. Do not let negative energy turn you off from science.

**"In pursuing their dreams, students should not worry about their backgrounds since that is determined by their past. It is how hard they are willing to work that determines their future."**

**— Isiah M. Warner**