August 2022 CANDIDATE STATEMENT AND BIO FOR THE COMMITTEE ON NOMINATIONS

Name: Dr. Robert L. "Bob" Horton

Present Position: Executive Director

Organization: Scientific Research Foundation of Texas, a 501c(3) non-profit dedicated to fostering the next generation of researchers

Chapter Affiliation: Rice University / Texas Medical Center Chapter (073)

Candidate's Statement: The interdisciplinary nature of Sigma Xi provides a fertile environment for the free exchange of ideas not only across disciplines but also across those "perceived gaps" – for example, the gap between academia and industry – that we are all trying to minimize. Those "gaps" are perceived to exist among academic, governmental, professional societal, industrial, and independent research organizations and groups. As a Full Member of Sigma Xi since 1972, I strongly believe our duty is to promote the importance of this exchange among our peers, transcending those "gaps" in order to keep alive the desire of learning beyond the narrow scope of our disciplines and to foster the next generation of researchers no matter where their interests lead them.

I was an Assistant Professor at LSU from 1971 - 1975; therefore, during my graduate research years, post-doctoral training, and a few years at LSU, I was in academia, but I really learned a only little about academia. In the ~44-year period thereafter, I re-trained on-the-job as a Petroleum Engineer and worked mostly as an industrial researcher in new product and new technology development in the Petroleum Industry. Thereby, I learned a bit more about industrial research. Subsequent to my retirement from industrial research, I have taken on less formal *pro bono* roles as a mentor to young researchers and chief leader of a very small non-profit.

Unfortunately, by joining only their own narrow professional specialty societies, many scientists do not take advantage of the free exchange of ideas across disciplines. I have become much more keenly aware of these needs since I was invited by the Board of Directors (BoD) of the Rice University / Texas Medical Center Chapter in 1999 to run for election to the office of Chapter Qualifications and Membership Committee Chair. Continuing in that role since 1999, I have become keenly aware of the need to keep our membership standards at least as high as they were in 1972 when the University of California Berkeley Chapter elected me and to actively support membership-expansion initiatives like the Sigma Xi Affiliates Program, the Sigma Xi Explorers Program and the establishment of "Sister Chapters" as a means of overcoming some of the barriers to the creation of new chapters, especially outside the US. Over the years I have worked very hard among the technical communities in the Greater Houston Area and at our Rice University and Texas Medical Center campuses to keep our chapter relevant and viable. If elected to the Committee on Nominations, I will use my experience to assist the Committee and its Chair as needed and I will work towards promoting the relevance of scientific endeavors both in all our campuses and in the community at large.

I am currently donating a flow-assurance-related Provisional Patent Application to Rice University. While the Chapter has an excellent relationship with the Texas Medical Center, it is clear that Sigma Xi is NOT so important to the research enterprise at Rice University as it could be. It is hoped that the situation for Sigma Xi at Rice can be improved in the future. Accordingly, as a "Thrice Rice" alum I have been dispatched as an emissary by the Board of Directors of the Rice University / Texas Medical Center Chapter of Sigma Xi on a mission to attempt to improve the liaison between our Sigma Xi Chapter and Rice University. This, it is hoped, may be accomplished by my working to support the Rice Brine Chemistry Consortium, the Rice Hydrocarbon Thermodynamics and Flow Assurance Consortium, the Rice Oshman Engineering Design Kitchen (OEDK), OEDK Executive Director Kavalewitz-Dern, Engineering Dean Chapman, and Professors Vargas, and Oden.

Sigma Xi and Other Activities:

1964-2013	American Chemical Society (ACS)
1972-present	Sigma Xi (Research Society of North America) (ΣΞ)
1978-1980	Society of Mining Engineers (SME)
1978-2019	Society of Petroleum Engineers (SPE)
1978-1982	Canadian Institute of Mining (CIM)
1978-1986	Gas Processors Association (GPA)
1978-1986	GPA Phase Equilibrium Steering Committee
1995-2013	American Association of Drilling and Completion Engineers (AADE)
1995-1999	Rice Alumni Volunteers for Admissions to Rice University (RAVA)
1995-2013	NACE International
2009-present	Qualifications & Membership Committee Chairman of the Rice University / Texas Medical Center Chapter of Sigma Xi (ΣΞ)
2009-present	Member of the Board of Directors of the Rice University / Texas Medical Center Chapter of Sigma Xi (ΣΞ)

Biographical Information: Dr. Horton is a member of nearly a dozen professional associations and, career-to-date, is credited with over 78 patents and other publications. As a result of these publications on his own part and recruiting new members into Sigma Xi after having reviewed new inductees publications, he knows how important publication is for the research enterprise. Unfortunately, only with one of the 5 high school students Dr. Horton has mentored, has he succeeded in convincing them to draft a paper for publication as part of their science fair research; and that was during COVID, when Dr. Horton was unable to succeed in finding available space in a laboratory for the high school student, so writing a paper was almost the only thing the student could do to show science fair judges that he had done anything during his project.

Dr. Horton earned a BA *cum laude* in Chemistry from Rice University, a Ph.D. in Chemistry from UC-Berkeley, and received post-doctoral training from the late Professor J. L. Franklin at Rice. In mid-January 2018, he retired as the Chief Technology Officer and Technical Vice President of Home Run Specialty Chemicals, Inc. (HRSC), a position he had held since he co-founded HRSC in February 2009. He was developing the product lines for specialty additives for production, drilling, completion, acid stimulation, hydraulic fracturing stimulation, wellbore work-over, and emulsion breaking and preventing. Dr. Horton was previously the Patent and External Technologies Manager at WellChem Technologies, a division of Nalco-Champion. Dr. Horton's responsibilities there also included leading a small research team in developing new specialty additives for wellbore construction, and serving as a liaison between the Petroleum Industry and WellChem Technologies R & D. Prior to 2009, Dr. Horton had spent a decade as a Senior R & D Advisor with M-I SWACO, the world's leading supplier of drilling fluid systems, where he led a small research team in developing new reservoir drilling fluids and oil and gas well-completion-fluid additives.

Since retiring from industrial research, his recent research has focused on prevention / mitigation of hydrocarbon flow losses in oil and gas production due to hydrate deposition. He has also taken on less formal *pro bono* roles as a mentor to young researchers and leader of a very small non-profit dedicated to fostering the next generation of researchers in science and engineering. His mentorship includes (1) a post-doc, Dr. Qiliang Wang, in helping him to establish a technology start-up company focused on reduction of hydrocarbon flow assurance costs in oil and gas production due to the deposition of scale, asphaltenes, and wax, (2) a medical student, Kishore Balasubramanian, who is creating and leading the Texas A & M Health Science Center Science Fair Mentorship Program, and (3-7) high school students, Anushka Jetly, Tyler Kubecka, Andrearosa Nguyen, Bridget Huynh, and Victoria Page with their Science and Engineering Fair of Houston (SEFH) projects. In these mentorship roles, Dr. Horton is overtly and materially fostering members of the next generation of researchers.