

Program Summary (17 January 2013)

At 7:02 p.m., President Wade welcomed the membership and asked members to think about recruiting new members. HPS was founded as a Town & Gown society (a small town, Houston, and gown being the university community Rice). HPS would welcome a wider net of academic membership. Wade gave a brief introduction of tonight's after-dinner speaker and a preview of his remarks.

At 7:58 p.m., President Wade alerted the membership that the evening's presentation would begin shortly.

At 8:08 p.m., visitors were introduced by the members. Wade introduced the evening's speaker **Dr. Ned Thomas**, Dean of the George R. Brown School of Engineering. Wade shared some personal recollections of his thesis advisor and recreational activities over the past thirty years. (Fishing plays a prominent role.)

The title of Dean Thomas's talk was **Rice Engineering 1912-2112**. The membership warmly welcomed Ned. This is the 655th meeting of the Houston Philosophical Society.



Ned began with some pictures of Rice Institute from its groundbreaking, followed by images of engineering activities and faculty decade by decade.

At the 2012 Centennial celebration, President Leebron called for "A bolder, more entrepreneurial, aggressive Rice." Now think about the technologies that have arisen in the past fifty years: from biotech to the internet. What might 2112 look like?

It is easy to list challenges: economic competition, emissions, climate, health, and a finite resource base. What will engineers do to solve or address these trials?

Energy storage is a big deal. Currently, energy storage is reservoirs of oil deep in the earth. Capturing photons from the Sun is the future.

The future of American education: The T-Shaped Individual. (A concept that goes back to David Guest in 1991.) The vertical stroke is the deep thinker (phd, smartest person in the room), while the horizontal stroke captures the soft skills (communications, cost effectiveness, etc). Education will somehow start to emphasize teamwork more than it does today.

In 2112, there will still be a campus. The experience will still be rigorous and excellence will be a focus; fundamentals still the emphasis; highly competitive yet collaborative; team learning and doing; still hands on laboratories; research mentoring; creation of scholars but also global leaders.

How will Rice Engineering get there? In 1910, problem-driven research might be putting windshields on cars, then fixing the problems caused by putting glass in front of drivers, leading to seat belts and finally air bags. The 21st century will satisfy the demand for on board on-demand systems, automatically deployed when needed. The need: dynamic materials, integrated systems of nanotechnologies.

Reading science fiction, you can find lots of examples of good forecasting (and even more of bad forecasting). Jules Verne in 1865 wrote of traveling to the moon. Rowling writes of cloaking in 1997, which has been realized in 2011 (acoustic cloaking). The time from idea to realization appears to be accelerating. Chemistry will lead the way through self-assembly and new properties.

What if? What if on-line education really works? (Finally?) What if hydrogen fusion can occur at room temperature? Etc.

But the prediction is that Rice “X” in 2112 will indeed be “a great university realized.” And Rice engineers will help save the world!

Ned wrapped up his comments at 9:02 and the audience warmly thanked the speaker. Questions were entertained. Is nanotechnology risky? Is American leadership admired around the world? What beyond carbon will be important? (boron) Will public transportation make a quantum leap?

Ned received another round of applause, and we adjourned at 9:15 p.m.

David W. Scott
Recording Secretary