

## ANTHONY N. STRANGES

### ***EDUCATION***

PhD	History of Science	University of Wisconsin-Madison
MS	Chemistry	Niagara University
BS	Chemistry	Niagara University

### ***TEXAS A&M UNIVERSITY EXPERIENCE***

1983-Present	Associate Professor, History Department
1977-82	Assistant Professor, History Department
1977-82	Member, German Document Retrieval Project

### ***TEACHING***

#### **Courses Taught**

- History of the United States, 1877 to the Present: History 106, History 106H (Honors), History 106I (International)
- Interplay of Scientific Thought and Society: Liberal Arts (LBAR) 203
- History of Science: History 362, History 362H (Honors)
- History of Science in America: History 363, History 363H (Honors)
- Great Lives in Science: History 376
- Energy and the Environment: Conflict or compatibility: History 381
- History 481: Undergraduate Seminars
  - Science and Society
  - Science and Religion
  - Great Scientists in History
- History 485: Problems
- History 497: University Honors Papers and Projects directed
- History 685: Problems
- History 691: Research

Science, Engineering, and Society (TAMU PREP Program), 1989-93. A six-week summer instructional program designed to introduce scientifically inclined seventh- and eighth-grade students to the ideas, principles, and applications of science, mathematics, and engineering. William Perry, Dean of Faculties and Executive Associate Provost and Vice-Provost, established and directed the program. A Department of Energy competitive grant supported the program. Dow Chemical and Texas, A&M University's Colleges of Science and Engineering provided additional funding.

Video-Electronic Instruction. CD-ROM. "Reflections on the Electron Theory of the Chemical Bond: 1900-1925." Instruction program based on my book, *Electrons and Valence*. In *Physics InfoMall, The Physics Teacher's CD-ROM Toolkit Project*, 1993. Robert Fuller, University of

Nebraska, Omaha, director.

History of Science, Texas A&M University Study Abroad Program, Italy, Summer 1982.

### **High-Impact Undergraduate Experience**

Katelyn Preston, *Chemistry of the Steel Industry*, Honors Contract, History 106, Spring 2024  
Sasha Bell, *COINTELPRO and the FBI's War on the Black Movement*, Honors Contract, Spring 2023

Katie James, *Albert Michelson and the Speed of Light*, Honors Contract, History 363, Fall 2018

Jordan Thomas, *World War II Propaganda*, Honors Contract, History 106, Fall 2015

Joshua Brehm, *Molecular Biology*, Honors Contract, History 106, Spring 2014

Connor Jacobson, Honors Contract, History 106, Fall 2013

Anand Ganapathy, Honors Contract, History 363, Spring 2011

Katherine Bora, Honors Contract, History 363, Spring 2011

Courtney Boothe, cotton gin project, History 363, Spring 2009

Rene Mai, Physics Department, *Women Competing in a Man's Field, Science*, Honors Contract, History 106, Fall 2008

### **Teaching Grant**

Texas A&M University Honors Program, LBAR Grant, 2004: \$2,000.

### **Teaching Recognition**

Recognized by the Texas A&M University Veteran Resource & Support Center at the 2016 Graduation Cord Reception for faculty support of Aggie student veterans.

## ***GRADUATE FACULTY ACTIVITIES***

### **PhD Graduate Committee Chair**

Roger Horky, History, 2012

Marlene Bradford, History, 1998

### **MA Graduate Committee Chair/Co-Chair**

Antonio Villarreal, Science & Technology Journalism, 2010 (co-chair)

Steven Kirkpatrick, *Francis Bacon: The Rise and Fall of His Influence on Science in America*, History, 1990

John Sven Knudson, *Beam on: The Development of the Texas A&M Cyclotron Institute*, History, 1982

### **PhD, EdD Graduate Committee Membership/Co-Chair**

Katy Carr, EdD, Curriculum & Instruction, 2021

Eriel Hinojosa, PhD, Curriculum & Instruction, 2021

Rachel Turner, PhD, Curriculum & Instruction, 2020

Byron Williams, EdD, Curriculum & Instruction, 2019  
Carolyn Kennedy, PhD, Nautical Archaeology, 2019  
Sean Kelly, PhD, History, 2014  
Mark Janzen, PhD, History, 2010  
Linda Black, PhD, EDCl, 2008  
William Bryant, PhD, Psychology  
Anna S. Toness, PhD, Agricultural Education, 2002  
Aletta Speegle, PhD, Mathematics, 1997  
Richard Jones, PhD, EDCl, 1990

### **MA, MS Graduate Committee Membership**

Jessica Scarfuto, MS, Science & Technology Journalism, 2014  
Manjusha Sala, MS, Science & Technology Journalism, 2013  
Alejandra Arreola, MS, Science and Technology Journalism, 2012  
Roma Subramanian, MS, Science & Technology Journalism, 2011  
Misha Kidami, MS, Science Journalism, 2009  
Emily Roberge, MS, Science Journalism, 2009  
Sean McMaughan, MS, Chemistry 2005  
Gretchen Catron, MA, Education, 2003  
Jaejin Lee, MA, Journalism, 2003  
Jennifer Hut, MA, Journalism, 2003  
Richard Cunningham, MA, Journalism, 2002  
Steven Ellis, MA, Sociology, 1988  
Harvey Bordett, MS, Industrial Engineering, 1985  
Mark Triesch, MA, English 1984

Science Journalism students must pass an oral exam and a written exam that I administer.

### **MEd (Master of Education) Graduate Committee Co-Chair /Member**

In the period 2001-2024, I have served on the committees of 225 graduate students in the College of Education. Each MEd student writes a research paper that I evaluate and gives an oral presentation on the research.

### **Graduate College Representative**

Cheryle Crawford, PhD, Education, 1997  
Ned Mamula, PhD, Geology, 1997  
Robert Wagner, PhD, Education, 1994  
John Tabarlet, PhD, Education, 1994  
Chad E. Redman, PhD, Chemistry, 1994  
Matthew Prebeg, PhD, Agricultural Engineering, 1988  
Teresa Elaine Rowles, PhD, Veterinary Anatomy, 1988  
Barbara Biddle, PhD, Wildlife and Fisheries Sciences, 1988  
Eduardo Aizpuru-Garcia, PhD, Range Science, 1988  
Normando Fernandez, PhD, Soil science, 1985  
Rodney Stockton, PhD, Chemistry, 1985

## **RESEARCH**

### **PUBLICATIONS**

#### **Books**

Stranges, Anthony N. *Petroleum from Coal: A Century of Synthesis*. Brill Publishers: Leiden, Netherlands, 420 pages, 2024.

Stranges, Anthony N. *Transforming America*. Dubuque, Iowa: Kendall Hunt Publishing Company, 832 pages, third edition 2018.

Stranges, Anthony N. *Science Changed the World*. Dubuque, Iowa: Kendall Hunt Publishing Company, 767 pages, second edition 2018.

Stranges, Anthony N. *Transforming America*. Dubuque, Iowa: Kendall Hunt Publishing Company, 832 pages, second edition 2017.

Stranges, Anthony N. *Technological Transformation of Gilded Age America*. Dubuque, Iowa: Kendall Hunt Publishing Company, 172 pages, 2016.

Stranges, Anthony N. *Science Changed the World*. Dubuque, Iowa: Kendall Hunt Publishing Company, 762 pages, 2015.

Stranges, Anthony N. *Transforming America*. Dubuque, Iowa: Kendall Hunt Publishing Company, 832 pages, 2014.

Stranges, Anthony N. *Technological Transformation of Gilded Age America*. Dubuque, Iowa: Kendall Hunt Publishing Company, 160 pages, 2014.

Stranges, Anthony N. *Electrons and Valence: Development of the Theory, 1900-1925*. College Station: Texas A&M University Press, 292 pages, 1982.

#### **Book Chapters**

“Albert Einstein.” In *Great Lives in European History 1600-1945*. Ed. William J. Fanning Jr., 342-72. Curriculum Project Foundation: All Saints Episcopal School of Fort Worth, 2021.

“A History of the Fischer-Tropsch Synthesis in Germany 1926-45.” In *Fischer-Tropsch Catalysts and Catalysis*. Ed. Burtron Davis and Mario Occello, 1-28. Elsevier Publishers: The Netherlands, 2007.

“Germany’s Synthetic Fuel Industry.” In *The German Chemical Industry in the Twentieth Century*. Ed. John E. Lesch, 147-216. Dordrecht, The Netherlands: Kluwer Academic Publishers, 2000.

“Synthetic Petroleum from High-Pressure Coal Hydrogenation.” In *Chemistry and Modern Society: Historical Essays in Honor of Aaron J. Ihde*. Ed. John Parascandola and James Wharton, 21-42. Washington, DC: American Chemical Society, 1983. The American Chemical Society published this *Festschrift* volume honoring Aaron Ihde, Professor Emeritus of Chemistry and the History of Science at the University of Wisconsin, Madison.

## Articles

“Farrington Daniels: Pioneer in the Use of Solar Energy as Appropriate Technology.” *ICON*, forthcoming 2025.

“Is the Debate Over? James Hansen’s Contributions to the Changing Atmosphere-Changing Climate Debate.” In *Technology in Times of Transition, Brasov, Romania. Proceedings of the International Committee for the History of Technology*, 423-28, 2014.

“Germany’s Fischer-Tropsch Synthesis 1926-1945: The World’s First Commercial Scale Coal-to-Liquid Fuel Industry.” *Gas Technologies Outlook* (2006): 1-28.

“Farrington Daniels, Solar Prophet and Pioneer in the Use of Solar Energy as Appropriate Technology.” In *Proceedings of the International Solar Energy Society*. Ed. D.Y. Goswami, S. Viayaraghavan, R. Campbell-Howe, Paper No. 2019, 1-5, 2005.

“Germany’s Synthetic Fuel Industry 1927-1945.” In *Third Topical Conference on Natural Gas Utilization. Proceedings of the American Institute of Chemical Engineers*. Ed. C.H. Chiu, R.D. Srivastava, and R. Mallinson, 635-46. New York, Spring 2003.

“Synthetic Fuel Production in Prewar and World War II Japan.” In *Third Topical Conference on Natural Gas Utilization. Proceedings of the American Institute of Chemical Engineers*. Ed. C.H. Chiu, R.D. Srivastava, and R. Mallinson, 657-67. New York, Spring 2003.

“Air Pollution Problems in History.” In *Science and Cultural Diversity. Proceedings of the XXIst International Congress of the History of Science*. Ed. Juan-Jose Saldana. Universidad Nacional Autónoma de México : Sociedad Mexicana de Historia de la Ciencia y la Tecnología, A.C., México, D.F., 2003. All papers on CD, 2001.

“Germany’s Synthetic Fuel Industry.” *Energeia* 12, 5 (2001): 1, 2, 6.

“The US Bureau of Mines Synthetic Liquid Fuels Programme, 1920-1950s: German Connections and American Advances.” *Annals of Science* 54 (1997): 29-68.

“Germany’s Synthetic Fuel Industry 1930-1945.” *Working Paper 5.64, Center for German and European Studies*, Berkeley: University of California (March 1997): 1-94.

“William Francis Giauque: An Adventure in Low-Temperature Thermodynamics.” In *Proceedings of the Eighteenth Symposium of the International Committee for the History of Technology*. Ed. Alexander Herlea, 1-12. San Francisco: San Francisco Press, 1993.

“Synthetic Fuel Production in Prewar and World War II Japan: A Case Study in Technological Failure.” *Annals of Science* 50 (1993): 229-65.

“Farrington Daniels and the Wisconsin Process for Nitrogen Fixation.” *Social Studies of Science* 22 (1992): 317-37.

“X-Rays: Laying the Foundation of Modern Radiology.” *Medicina Nei Secoli Arte e Scienza* 3 (1991): 207-22 (with Deidi Strickland).

“Canada’s Mines Branch and Its Synthetic Fuel Program for Energy Independence.” *Technology and Culture* 32 (1991): 521-54.

“William Francis Giauque (1895-1982): An Adventure in Low-Temperature Research.” *Journal of Chemical Education* 67 (1990): 187-93.

“Unravelling Origins: The Archean.” *Earth Science* 42 (December 1989): 20-22 (with Richard Jones).

“Canada’s Mines Branch and Its Synthetic Fuels Programme for Energy Independence.” *Canadian Chemical News (L'Actualité Chimique Canadienne)* 41 (May 1989): 22-24.

“Friedrich Bergius and the Transformation of Coal Liquefaction from Empiricism to a Science-Based Technology.” *Journal of Chemical Education* 65 (1988): 749-51.

“Canada’s Mines Branch: Synthetic Fuels and the Search for Energy Independence.” In *Proceedings of the Sixteenth Symposium of the International Committee for the History of Technology*, 495-505. Madrid, Spain: Ministerio de Obras publicas y Urbanismo, 1988.

“Friedrich Bergius: Scientist and Industrial Pioneer of High-Pressure Coal Liquefaction.” In *Technology and Technical Sciences in History. Proceedings of the Twelfth Symposium of the International Committee for the History of Technology*. Ed. Rolf Sonnemann and Klaus Krug, 263-66. East Berlin: VEB Deutscher Verlag der Wissenschaften, 1987.

“The Conversion of Coal to Petroleum: Its German Roots.” *Fuel Processing Technology* 16 (1987): 205-25.

“From Birmingham to Billingham: Synthetic Fuels in Great Britain, 1910-1945.” *Technology and Culture* 26 (1985): 726-57.

“Friedrich Bergius and the Rise of the German Synthetic Fuel Industry.” *Isis* 75 (1984): 643-67.

“Petroleum from Coal: German Roots and Recent American Developments.” In *Energy in History. Proceedings of the Eleventh Symposium of the International Committee for the History of Technology*. Ed. Hans Joachim-Braun and Wolfgang König, 125-31. Düsseldorf: Verein Deutscher Ingenieure, 1984.

“Reflections on the Electron Theory of the Chemical Bond: 1900-1925.” *Journal of Chemical*

*Education* 61 (1984): 185-90. Published as the “G.N. Lewis Symposium Papers.”

“Synthetic Petroleum from Coal Hydrogenation: Its History and Present State of Development in the United States.” *Journal of Chemical Education* 60 (1983): 617-25.

“History of High-Pressure Coal Hydrogenation.” In *Proceedings of the Society for the History of Technology* 3, 111-28, 1982.

“Reflections on the Electron Theory of the Chemical Bond: 1900-1925.” *The Physics Teacher* 19 (1981): 583-89.

### **Dictionary and Encyclopedia Articles**

“Chemistry,” in *The Oxford Encyclopedia of the History of American Science, Medicine, and Technology*, Vol. I. Ed. Hugh R. Slotten. New York and Oxford: Oxford University Press, 2014: 187-94.

“Karl Ziegler,” in *Encyclopedia Britannica*. Chicago, Electronic Version, 2007.

“Coal,” in *Chemistry: Foundations and Applications*, Vol. I. Ed. in Chief Joseph J. Lagowski. New York: Macmillan Publishers, 2004: 232-36.

“Standard International Units,” in *Chemistry: Foundations and Applications*, Vol. II. Ed. in Chief Joseph J. Lagowski. New York: Macmillan Publishers, 2004: 245-48.

“Oil from Coal Process,” in *Encyclopedia of Twentieth-Century Technology*, Vol. II. Ed. Colin Hempstead and William Worthington. New York: Routledge, 2004: 547-49.

“Chemistry,” in *The History of Science in the United States: An Encyclopedia*. Ed. Marc Rothenberg. New York: Garland Publishing, Inc., 2001: 114-19 (with Marlene Bradford).

“Auguste and Jean-Felix Piccard,” in *Dictionary of World Biography, 20<sup>th</sup> Century*, Vol. 9. Pasadena, California: Salem Press and Fitzroy Dearborn Publishers, 1999: 3002-5 (with Marlene Bradford).

“William F. Giauque,” in *Biographical Encyclopedia of Scientists*. Ed. Richard Olson. New York: Marshall Cavendish Corp., 1998: 503-6 (with Steve Kirkpatrick).

“G.N. Lewis,” in *Biographical Encyclopedia of Scientists*. Ed. Richard Olson. New York: Marshall Cavendish Corp., 1998: 829-31 (with Steve Kirkpatrick).

“Leo H. Baekeland,” in *American National Biography*, Vol. 1. Ed. John A. Garraty. New York: Oxford University Press, 1999: 861-64 (with Richard Jones).

“Frederick Gardner Cottrell,” in *American National Biography*, Vol 5. Ed. John A. Garraty. New York: Oxford University Press, 1999: 569-70 (with Richard Jones).

“Farrington Daniels,” in *American National Biography*, Vol. 6. Ed. John A. Garraty. New York: Oxford University Press, 1999: 92-93.

“Roger Adams,” in *Encyclopedia of Chemistry*, Vol. 1. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 24-25 (with Marlene Bradford).

“Adolph Baeyer,” in *Encyclopedia of Chemistry*, Vol. 1. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 210 (with Marlene Bradford).

“Friedrich Beilstein,” in *Encyclopedia of Chemistry*, Vol. 1. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 218 (with Marlene Bradford).

“Niels Bohr,” in *Encyclopedia of Chemistry*, Vol. 1. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 250 (with Marlene Bradford).

“Robert Bunsen,” in *Encyclopedia of Chemistry*, Vol. 1. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 275-76 (with Marlene Bradford).

“Albert Einstein,” in *Encyclopedia of Chemistry*, Vol. 2. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 501-2 (with Marlene Bradford).

“Alexander Fleck,” in *Encyclopedia of Chemistry*, Vol. 2. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 628 (with Marlene Bradford).

“Henry Gilman,” in *Encyclopedia of Chemistry*, Vol. 2. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 689-90 (with Marlene Bradford).

“Ernest O. Lawrence,” in *Encyclopedia of Chemistry*, Vol. 4. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 844 (with Marlene Bradford).

“Henri Le Chatelier,” in *Encyclopedia of Chemistry*, Vol. 4. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 846-47 (with Marlene Bradford).

“Lothar Meyer,” in *Encyclopedia of Chemistry*, Vol. 4. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 940-41 (with Marlene Bradford).

“Henry G.J. Moseley,” in *Encyclopedia of Chemistry*, Vol. 4. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 984-85 (with Marlene Bradford).

“The Proton,” in *Encyclopedia of Chemistry*, Vol. 4. Ed. Joseph Lagowski. New York: MacMillan Publishing, 1997: 1262-63 (with Marlene Bradford).

“Coal Liquefaction,” in *Magill's Survey of Science: Applied Science*. Ed. Frank N. Magill. Pasadena, California: Salem Press, 1993: 441-48 (with Steve Kirkpatrick).

“Hess Concludes the Debate on Continental Drift,” in *Magill's Great Events from History II: Science and Technology*. Ed. Frank N. Magill. Pasadena, California: Salem Press, 1991: 1650-



54 (with Richard Jones).

“William GIAUQUE,” in *Dictionary of Scientific Biography*, Vol. 17. Ed. Charles C. Gillispie. New York: Charles Scribner's Sons, 1990: 337-44.

“George SCATCHARD,” in *Dictionary of Scientific Biography*, Vol. 18. Ed. Charles C. Gillispie. New York: Charles Scribner's Sons, 1990: 776-79.

“The Archean Eon,” in *Magill's Survey of Science, Earth Science Series*, Vol. 1. Ed. Frank N. Magill. Pasadena, California: Salem Press, 1990: 92-97 (with Richard Jones).

“The Geological Time Scale,” in *Magill's Survey of Science, Earth Science Series*, Vol. 2. Ed. Frank N. Magill. Pasadena, California: Salem Press, 1990: 874-81 (with Richard Jones).

### **Published Book Reviews**

Michael Camp, *Unnatural Resources: Energy and Environmental Politics in Appalachia after the 1973 Oil Embargo*, in *Technology and Culture*, 63 (2022): 274-76.

Joseph Pratt, Martin Melosi, Kathleen Brosnan, *Energy Capitals*, in *ICON* 22 (2016): 185-87.

Stephan H. Lindner, *Inside I.G Farben: Hoechst During the Third Reich*, in *Technology and Culture* 50 (2009): 712-13.

Dietrich Stolzenberg, *Fritz Haber; Chemist, Nobel Laureate, German Jew*, in *Technology and Culture* 46 (2005): 448-49.

Ahmed Zewail, *Voyage Through Time: Walks of Life to the Nobel Prize*, in *Isis* 95 (2004): 164-65.

Frederic Holmes and Trevor H. Levere, *Instruments and Experimentation in the History of Chemistry*, in *Isis* 95 (2004): 506-7.

Vaclav Smil, *Enriching the Earth: Fritz Haber, Carl Bosch, and the Transformation of World Food Production*, in *Isis* 93 (2002): 329-30.

John Perlin, *Space to Earth: The Story of Solar Electricity*, in *Isis* 92 (2001) 217-18.

Donald Beattie, Ed., *History and Overview of Solar Heat Technologies*, in *Isis* 90 (1999): 402-3.

Robin Herman, *Fusion: The Search for Endless Energy*, in *Annals of Science* 50 (1993): 296-98.

Robert S. Mulliken, *Life of a Scientist*, in *Isis* 81 (1990): 797.

Michael Crow, Barry Bozeman, Walter Meyer, and Ralph Shangraw, Jr., *Synthetic Fuel*

*Technology Development in the United States*, in *Technology and Culture* 31 (1990): 350-52.

S.W. Hawking and W. Israel, *Three Hundred Years of Gravitation*, in *Annals of Science* 46 (1989): 110-12.

William Ashworth, *The History of the British Coal Industry*, Vol. 5, in *Technology and Culture* 29 (1988): 975-77.

Arnold Kramish, *The Griffin: The Greatest Untold Espionage Story of World War II*, in *Isis* 79 (1988): 173-74.

Yuval Ne'man and Yoram Kirsch, *The Particle Hunters*, in *Annals of Science* 44 (1987): 534-36.

Hugh J.G. Aitken, *Syntony and Spark: The Origins of Radio*, in *American Historical Review* 91 (1986): 1166-67.

John Hendry, *The Creation of Quantum Mechanics and the Bohr-Pauli Dialogue*, in *Annals of Science* 43 (1986): 304-5.

R.L. Whitmore, *Coal in Queensland: The First Fifty Years*, in *Technology and Culture* 25 (1984): 857-59.

Kevin Hance, *Conflict and Coal*, in *Technology and Culture* 25 (1984): 857-59.

Brian McCusker, *The Quest for Quarks*, in *Annals of Science* 41 (1984): 498-500.

## **Book Manuscripts Reviewed**

Steven Hahn, *Forging America*, Oxford University Press, 2023, book evaluation conducted in a Zoom meeting March 2024.

David M. Henkin and Rebecca M. McLennan, *Becoming America*, 2nd edition, McGraw-Hill book evaluation conducted in a Zoom meeting 4 August 2021.

Maria Montoya, Steve Hackel, Lon Kurashige, *Worlds of Difference: A Social and Global History of the United States*, Wadsworth Cengage Learning, 2015.

Audra Wolfe, *Freedom's Laboratory: The Cold War Struggle for the Soul of Science*, University of Chicago Press, 2015.

William E. Burns, *The Scientific Revolution: A Global Perspective*, Oxford University Press, 2012.

Arno de Klerk, *Beyond Fischer-Tropsch: 50 Years of Research at Sasol*, Elsevier Publishers, 2006.

Albert I. Berger, *J. Robert Oppenheimer: Science and War in the Twentieth Century*, Longman Publishers, 2005.

*Leonardo da Vinci Bibliography*, Garland Press, 1999.

John Wilson, *Forging the American Character*, First Edition, Volumes I and II, Simon & Schuster, 1995.

*American Chemical Society Books*, manuscript review of articles on Friedrich Bergius, Carl Bosch, William Giauque, and Walter Libby for *Biographical Dictionary of Nobel Laureates in Chemistry*, Ed. Laylin James, 1991.

Richard M. Golden, *Social History of Western Civilization*, revised edition, St. Martin's Press, 1990.

John R.M. Wilson, *Shaping the American Character*, revised edition, Prentice-Hall, 1988.

Rebecca Gruver, *An American History*, second edition, Alfred Knopf Publishers, 1986.

Richard T. Aulie, *Evolution, Religion, and Society*, Texas A&M University Press, 1984.

D. Stanley and Tracy Tarbell, *Roger Adams: Scientist and Statesman* (biography of Roger Adams, twentieth-century American chemist), American Chemical Society, 1980.

Robert Hawthorne, *Friedrich Wöhler* (biography of nineteenth-century German chemist), American Chemical Society, 1980.

## **Journal Manuscripts Reviewed**

“Making the Impossible, Possible: Producing Plutonium During the Manhattan Project.” *Technology and Culture*, 33 pages, July 2024.

Harold D. Wallace, “Fuel Cells: A Challenging History.” *Substantia: An International Journal of the History of Chemistry*, June 2019.

“Nazi Scientists at Mark Twain’s Missouri: The US Bureau of Mines’ Synthetic Fuels Demonstration Plant at Louisiana, Missouri, 1945-1953.” *Missouri Historical Review*, 24 pages, 2015.

“Boron Trifluoride Etherate as a Catalyst Precursor for Co-liquefaction of Coal and Plastics at Mild Conditions.” *International Journal of Oil, Gas, and Coal Technology*, 33 pages, two reviews, 2013.

“Astronomy by Correspondence: A Study of the Appropriation of Science by the Mexican Public (1927-1947).” *Science Communication*, November 2011.

“Graphical and Computationally Intensive Techniques for Representing and Disseminating Information About the Genetics of Disease—Possibilities, Limitations and Additions.” *Science Communication*, October 2010.

“Running Ahead: Marie Curie Above the Fold.” *Science Communication*, March 2010.

“Technological Trajectories: Two Case Studies from the History of Wind Power.” *Technology and Culture*, 1999.

“Signs of Hybris. The Shaping of Wind Technology Styles in Germany, Denmark, and the USA, 1940-1990.” *Technology and Culture*, 1996, two reviews.

Georgios Tsaparlis, “Atomic and Molecular Structure in Chemical Education: A Critical Analysis from Various Perspective of Science Education.” *Journal of Chemical Education*, 1995, two reviews.

Shigeaki Kikuchi, “A History of the Structural Theory of Benzene: The Aromatic Sextet and Huckel’s Rule.” *Journal of Chemical Education*, 1995, two reviews.

Michael Tennesand, “Hispanic Contributions to Science.” *Journal of Chemical Education*, 1994.

David C. Johnson, “Isaac Newton and the Mind of God: Rationality and Irrationality in Science.” *Journal of Chemical Education*, 1993.

Thomas Misa, “The Laboratory and the Workplace.” *Technology and Culture*, 1993.

George B. Kauffman, “Edvard Immanuel Hjelt (1855-1921): Finnish Chemist, Administrator, Patriot, and Statesman.” *Journal of Chemical Education*, 1991.

Lisa M. Robinson, “Borrowing from Industry: Edgar Fahs Smith’s Rotating Anode and Double-cup Mercury Cathode.” *Journal of Chemical Education*, 1988.

“Technology and the West German Economic Miracle.” *Technology and Culture*, 1988.

John Stock, “Fritz Haber and the Electroreduction of Nitrobenzene.” *Journal of Chemical Education*, 1987.

John Wotiz, “Louis Pasteur, August Kekulé and the Franco-Prussian War.” *Journal of Chemical Education*, 1987.

“Government Research and the Corporate State: The Rittman Refining Process.” *Technology and Culture*, 1987.

E.R. Stephen “Smog Studies of the 1950s.” *EOS* (Transactions of the American Geophysical Union), 1986.

*Defense Analysis* article review, 1985.

H.S. Kimmell and R.P.T. Tomkins, "A Course on Synthetic Fuels." *Journal of Chemical Education*, 1984.

## **Proposals Reviewed**

"The Elaboration of the Scientific Fundamentals of Coal Gasification by Methods of Electrical Stimulation," US Civilian Research and Development Foundation (CRDF), *US Department of State, Science Center*, 2007.

*National Science Foundation* proposal review (author's name and proposal title are confidential), 2006.

*National Science Foundation* proposal review (author's name and proposal title are confidential), 2005.

*National Science Foundation* proposal review (two reviews, author's name and proposal title are confidential), 2004.

Jeffrey A. Johnson and Roy MacLeod, "The Great War and Modern Chemistry," *National Science Foundation*, 1997.

Daniel Barrett, "The Science of Irving Langmuir," *National Science Foundation*, 1996.

Kenneth Taylor, "Langmuir and the Atom: A Study in the Development and Subsequent Divergence of the Discipline of Physical Chemistry," *National Science Foundation*, 1995.

Robert Friedman, "Historical Studies of the Nobel Chemistry and Physics Prizes," *National Science Foundation*, 1994.

Edward W. Constant, "Science, Ideology, and Oil: Petroleum Engineering Science, the Oil Fraternity in Texas, and the Socio-Natural Reality," *National Endowment for the Humanities*, 1994.

Kathryn Steen, "Wartime Catalyst and Postwar Reaction: The Making of the US Synthetic Organic Chemicals Industry, 1910-1933," *National Science Foundation*, two reviews, 1992, 1994.

Jeffrey A. Johnson, "Chemists, Chemistry, and German Society," *National Science Foundation*, 1992.

Cornelius W. Gispén, "National Socialism and the Politics of Inventing in Twentieth Century Germany," *National Science Foundation*, 1991.

Noretta Koertge, "The Early History of Stereochemistry and the Origins of Mechanistic Chemistry, 1875-1920," *National Science Foundation*, two reviews, 1990-91.

Raymond G. Stokes, "The Emergence of the West German Petrochemical Industry," *National Science Foundation*, 1990, two reviews.

George B. Kauffman, "The Christian Wilhelm Blomstrand - Sophus Mads Jorgensen Correspondence," *National Science Foundation*, 1990, two reviews.

Mary Jo Nye, "Scientific Explanations and the Emergence of Theoretical Chemistry: The Manchester and Paris Schools 1880-1950," *National Science Foundation*, 1989.

Davis Baird, "Scientific Instruments as Elements of Scientific Knowledge," *National Science Foundation*, 1989.

Frederick J. Brown, "The Development of a Comprehensive Historical Account of the Efforts to Create Waterway Connections Between the Rhine and Danube Rivers," *National Science Foundation*, 1988.

Erwin Hiebert, "Low Temperature Studies and the Early History of Quantum Theory," *National Science Foundation*, 1987.

Leon Gortner, "The History of Physical Organic Chemistry in the US 1925-1950," *National Science Foundation*, 1987.

Everett Mendelsohn, "Research Between Science and Politics at the Kaiser Wilhelm Society in the Third Reich," *National Science Foundation*, 1987.

Arnold Thackray, "Corn or Oil? The American Synthetic Rubber Program and the Evolution of the Modern Petrochemical Industry," *National Endowment for the Humanities*, 1987.

Mary Joe Nye, "Scientific Explanation and Modern Chemistry in England and France," *National Endowment for the Humanities*, 1985.

## **Tenure Evaluation**

Outside manuscript review for tenure evaluation of Jeffrey Johnson, Assistant Professor, State University of New York at Binghamton, 1983.

## **Research Grants**

Texas A&M University International Research Travel Assistance Grant. 2002: \$2,000.

Texas A&M University MiniGrant Program. 1982: \$300; 1990: \$855; 1992: \$510.

Texas A&M University International Enhancement Grants Program, Office of International Coordination. 1989: \$900.

Canadian Studies Program, Academic Relations Office, Canadian Embassy, Washington, DC.

“Canada’s Mines Branch and Its Synthetic Fuel Program for Energy Independence.”  
1988-89: \$2,500.

National Science Foundation. “A History of High-Pressure Coal Hydrogenation in Germany.”  
1980-88: \$55,988.

Center for Energy and Mineral Resources, Texas A&M University. “A History of High-Pressure Coal Hydrogenation in Germany and Britain.” 1980-88: \$33,686.

Office of University Research Services, Texas A&M University. 1986-87: \$6,760.

## **Travel Grants**

Texas A&M University History Department. 2024-\$3,500; 2023-\$3,500; 2022-\$300; 2021-\$75; 2020-\$2,500; 2019-\$1,500; 2018- \$2,200; 2017, 2016, 2015, 2014, 2013, 2012-\$2715; 2011, 2010, 2009, 2008, 2007-\$750; 2006-\$1,000; 2005-\$1,500.

Texas A&M University, College of Liberal Arts International Travel Grant. 2020-\$2,500; 2019-\$2,500; 2018-\$2,200; 2017-\$1,500; 2015-\$2,400; 2014-\$1,700; 2013-\$1,500; 2011-\$1,500; 2010-\$750; 2005-\$750; 2003-\$750; 2002-\$600; 2001-\$600; 2000-\$600; 1999-\$400; 1998-\$400; 1996-\$400.

## **Other Research Projects and Activities**

### *German Document Retrieval Project (1977-82)*

I was a member of Texas A&M’s German Document Retrieval Project that collected and brought most of Germany’s World War II synthetic fuel documents (Bergius and Fischer-Tropsch coal to oil conversion processes) to Texas A&M’s Center for Energy and Mineral Resources. Richard Wainerdi (1931-2021), professor of engineering and Associate Vice-President for Academic Affairs, and Kurt Irgolic (1938-99), professor of chemistry, established the project in 1975. In the ensuing years I have added to the collection a significant number of synthetic fuel documents that I obtained during visits to BASF’s archives in Ludwigshafen, Theodor Goldschmidt archives in Essen, the Bundesarchiv in Koblenz, Imperial Chemical Industries (ICI, since 2008 AkzoNobel) archives in London, the National Diet Library in Tokyo, and the Central State Archives in Rome. The collected documents, about 300,000 pages, and 305 Technical Oil Mission (TOM) microfilm reels of German documents, and numerous Japanese, American, British, and Canadian documents that members of the Technical Oil Mission brought to the United States in the closing months of the war are now in the Texas A&M University Archives. The archival collection (100 large archive boxes) is one of the largest historical collections of synthetic fuel production. I also interviewed and corresponded with several TOM members, Vladimir Haensel, John Gordon Allen, William Appler Horne, and Hans Schindler who provided synthetic fuel documents that they possessed and interviewed and corresponded with several German synthetic fuel scientists such as Ernst Donath and Hans Schappert, who came to the United States during Project Paperclip to work for the US Bureau of Mines.

### *Fischer-Tropsch Website (2002-Present)*

I served as a full-time research consultant to Syntroleum Corporation (now Emerging Fuels Technology) in Tulsa, Oklahoma, in spring and summer 2001 and as a part-time consultant 2001-2010. The collaboration led to creating the Fischer-Tropsch Archive, a website ([www.fischer-tropsch.org](http://www.fischer-tropsch.org)) that contains an extensive collection of documents on the development of the Fischer-Tropsch and related synthetic fuels processes in Germany, Britain, Japan, the United States, and other countries from the 1920s to the 2000s. I catalogued the entire collection of documents (100 large archive boxes) in the Texas A&M University Archives and provided copies of the documents to Syntroleum. Syntroleum converted the documents to electronic form (digitized) and made them available at the Fischer-Tropsch internet site to researchers worldwide. The purpose of the website is to put in the public domain the chronology of Fischer-Tropsch's 100-year development, indicating the current state of the process and its potential for further technological advancement. I assumed sole management of the website in 2007.

Syntroleum also digitized and made available in DVD format the 305 reels of microfilm on Germany's synthetic fuel industry that the TOM compiled in 1945-46. The cost of digitizing exceeded \$150,000. Syntroleum has donated a complete DVD set to the TAMU Archives.

### *Aviation History and Museum*

Project on the history of aviation with Brian Heckman, a professor of meteorology at the Air Force Academy in Colorado Springs, Colorado. The project had several objectives, one of which is the establishment of a history of aviation museum in the original 1940 terminal at Hobby Airport in Houston. The project resulted in the museum's developing student internships and offering courses for the public on the history of aviation and related sciences such as meteorology and the history of aviation in agriculture.

### *Farrington Daniels: Physical Chemist and Pioneer of Alternative Energy*

This book-length manuscript examines the career of Farrington Daniels, well-known chemist, textbook writer, and pioneer in the study of solar energy.

## **SCHOLARLY PRESENTATIONS**

### **Invited Papers**

Invitation to serve as chair and speaker on Solar Photovoltaic Technologies, 7th World Congress of Smart Energy, 2-4 November 2017, Wuxi, China, declined.

"Using the History of Science to Examine the Impact of Science and Technology on the Free Enterprise System and the Economic Development of the United States," Pasadena Independent School District, Pasadena, Texas, December 2012.

"Farrington Daniels," International Solar Energy Society, Naples, Italy, October 2004.



“History of Synthetic Fuel,” Center for Applied Energy Research, University of Kentucky, Lexington, KY, October 2000.

“Germany’s Synthetic Fuel Industry 1930-1945,” German Chemical Industry in the Twentieth Century Symposium, sponsored by the Center for German and European Studies, University of California, Berkeley, CA, March 1997.

“Synthetic Fuel Production in Prewar and World War II Japan,” Research Center for Advanced Science and Technology, University of Tokyo, Japan, December 1990.

“Synthetic Fuel Production in Prewar and World War II Japan,” History of Science Colloquium, Doshisha University, Kyoto, Japan, December 1990.

“William Francis GIAUQUE: An Adventure in Low-Temperature Thermodynamics,” 18th Symposium of the International Committee for the History of Technology, The Relations of Science with Technology, Paris, France, July 1990.

“The IG Farben-Japanese World War II Synthetic Liquid Fuels Agreement,” Annual Meeting of the Society for the History of Technology, Wilmington, Delaware, October 1988.

“Canada’s Mines Branch: Synthetic Fuels and the Search for Energy Independence,” 16th Symposium of the International Committee for the History of Technology, Civil Engineering, Madrid, Spain, September 1988.

“Friedrich Bergius and the Transformation of Coal Liquefaction from Empiricism to a Science-Based Technology,” Southwestern and Rocky Mountain Division, American Association for the Advancement of Science, Austin, Texas, April 1987.

“Friedrich Bergius: Scientist and Industrial Pioneer of High-Pressure Coal Liquefaction,” 12th Symposium of the International Committee for the History of Technology, Technology and Technical Sciences in History, Dresden, East Germany, August 1986.

“Petroleum from Coal: German Roots and Recent American Developments,” 11th Symposium of the International Committee for the History of Technology, Energy in History, Lerbach, West Germany, September 1984.

“Petroleum from Coal,” Southwest Research Institute, San Antonio, Texas, June 1983.

“Reflections on the Electron Theory of the Chemical Bond, 1900-1925,” G.N. Lewis Symposium, Annual Meeting of the American Chemical Society, Las Vegas, Nevada, March 1982.

“History of High-Pressure Coal Hydrogenation,” Annual Meeting of the Society for the History of Technology, Milwaukee, Wisconsin, October 1981.

## Papers Presented

“Changing Use and Awareness of Hydrogen as a Clean Energy Source,” XXVIIth International Congress of the History of Science and Technology. Dunedin, New Zealand, June-July 2025

“The Petroleum Industry’s Fracking Revolution and Its Environmental Consequences,” International Committee for the History of Technology, 50th Symposium, Tallinn, Estonia, August 2023, virtual conference because of Covid-19.

“The Technological Transformation of the 1850s and its Environmental Consequences,” International Committee for the History of Technology, 49th Symposium, University of Ostrava, Czech Republic, September-October 2022, virtual conference because of Covid-19.

“Acid Rain: Causes, Consequences, Remedies, and Regulation,” XXVIth International Congress of the History of Science and Technology. Prague, The Czech Republic, July 2021, virtual conference because of Covid-19.

“Pioneering Studies on Acid Rain,” International Committee for the History of Technology, 47th Symposium, Eindhoven, The Netherlands, July 2020, virtual conference because of Covid-19.

“The Present and Future of Solar Energy,” International Committee for the History of Technology, 46th Symposium, Katowice, Poland, July 2019.

“Wind Energy,” International Committee for the History of Technology, 45th Symposium, St. Etienne, France, July 2018.

“Earth’s Environment, Climate Change and the Doubters,” XXVth International Congress of the History of Science, Technology and Medicine, Rio de Janeiro, Brazil, July 2017.

“Arvid Högbom and Svante Arrhenius: Early Recognition of a Future Environmental Crisis,” International Committee for the History of Technology, 43rd Symposium, Porto, Portugal, July 2016.

“Guy Callendar and Gilbert Plass, Pioneering Proponents of Global Warming,” International Committee for the History of Technology, 42nd Symposium, Tel Aviv, Israel, August 2015.

“Is the Debate Over? James Hansen’s Contributions to the Changing Atmosphere-Changing Climate Theory,” International Committee for the History of Technology, 41st Symposium, Brasov, Romania, July 2014.

“Roger Revelle Answers the Question, How Deep is the Ocean,” XXIVth International Congress of the History of Science, Manchester, England, July 2013.

“Keeling Curve: Causes and Consequences of Global Warming,” International Committee for the History of Technology, 39th Symposium, Barcelona, Spain, July 2012.

“Global Warming, its Three-Stage History,” International Committee for the History of Technology, 38th Symposium, Glasgow, Scotland, August 2011.

“Key Scientists in the History of Climate Change,” International Committee for the History of Technology, 38th Symposium, Glasgow, Scotland, August 2011.

“The Breadth of a Scientific Process Called Hydrogenation,” International Committee for the History of Technology, 37th Symposium, Tampere, Finland, August 2010.

“Water Pollution and Its Treatment in Nineteenth-Century United States,” XXIIIrd International Congress of the History of Science, Budapest, Hungary, July 2009.

“Scientists in the History of Air Pollution,” International Committee for the History of Technology, 35th Symposium, Victoria, British Columbia, Canada, August 2008.

“Germany’s Fischer-Tropsch Synthesis,” International Committee for the History of Technology, 34th Symposium, Copenhagen, Denmark, August 2007.

“Key Scientists in the History of Air Pollution,” Part II, International Committee for the History of Technology, 33rd Symposium, Leicester, England, August 2006.

“Key Scientists in the History of Air Pollution,” XXIIInd International Congress of the History of Science, Beijing, China, July 2005.

“Farrington Daniels, Solar Prophet and Pioneer in the use of Solar Energy as Appropriate Technology,” International Solar Energy Society, 2005 Solar World Congress, Orlando, Florida, August 2005.

“Germany’s Synthetic Fuel Industry 1927-45,” Third Topical Conference on Natural Gas Utilization, American Institute of Chemical Engineers, New Orleans, LA, March-April 2003.

“Synthetic Fuel Production in Prewar and World War II Japan,” Third Topical Conference on Natural Gas Utilization, American Institute of Chemical Engineers, New Orleans, LA, March-April 2003.

“Technical Oil Mission Microfilm Reels: Background and New Developments,” (with Steve Leviness, Syntroleum Corporation, and Ed Koper, Sasol, South Africa), Third Topical Conference on Natural Gas Utilization, American Institute of Chemical Engineers, New Orleans, LA, March-April 2003.

“Responses to Air and Water Pollution in the United States from the 1900s to the 1950s,” International Committee for the History of Technology, 30th Symposium, St. Petersburg and Moscow, Russia, August 2003.

“History of Acid Rain,” International Committee for the History of Technology, 29th Symposium, Granada, Spain, June 2002.

“Air Pollution in History,” XXIst International Congress of the History of Science, Mexico City, Mexico, July 2001.

“Fischer-Tropsch Reactor Design II, 1940-45, Germany,” Annual Meeting of the American Chemical Society, Chicago, Illinois, August 2001.

“Frederick Cotrell (1877-1948): Pioneer Industrial Environmentalist,” 27th Symposium of the International Committee for the History of Technology, Prague, Czech Republic, August 2000.

“Fischer-Tropsch Reactor Design I: Germany 1923-1939,” Annual Meeting of the American Chemical Society, Washington, DC, August 2000.

“Fischer-Tropsch Fuels and Lubricants I: Germany 1923-1939,” Annual Meeting of the American Chemical Society, Washington, DC, August 2000.

“Farrington Daniels, Pioneer in the Use of Solar Energy as Appropriate Technology,” 26th Symposium of the International Committee for the History of Technology, Belfort, France, August 1999.

“The Fischer-Tropsch Synthetic Fuel Process: European Roots and American Developments,” 25th Symposium of the International Committee for the History of Technology, Lisbon, Portugal, August 1998.

“IG Farben’s Coal Liquefaction Program 1920-1945,” 23rd Symposium of the International Committee for the History of Technology, Budapest, Hungary, August 1996.

“Synthetic Fuel Development at BASF in the 1920s,” Annual Meeting of the Society for the History of Technology, Charlottesville, Virginia, October 1995.

“Farrington Daniels: Pioneer in the Use of Solar Energy as Appropriate Technology,” Annual Meeting of the History of Science Society, New Orleans, Louisiana, October 1994.

“The US Bureau of Mines Synthetic Fuel Program: 1920s-1954,” 22nd Symposium of the International Committee for the History of Technology, Bath, England, July 1994.

“Synthetic Fuel Production in Prewar and World War II Japan: A Case Study in Technological Failure,” XIXth International Congress of History of Science, Zaragoza, Spain, August 1993.

“Canada’s Mines Branch and its Synthetic Fuel Program for Energy Independence,” Joint Meeting of the American, British, and Canadian History of Science Societies, Toronto, Ontario, Canada, July 1992.

“Farrington Daniels and the Use of Solar Energy as Appropriate Technology,” Annual Meeting of the Society for the History of Technology, Madison, Wisconsin, October 1991.

“William Francis Giaouque: An Adventure in Low-Temperature Research,” Annual Meeting of

the American Chemical Society, Washington, DC, August 1990.

“Canada’s Mines Branch and Its Synthetic Fuel Program for Energy Independence,” Association for Canadian Studies in the United States, Tenth Biennial Meeting, San Francisco, California, November 1989.

“Farrington Daniels and the Wisconsin Process for Nitrogen Fixation,” XVIIIth International Congress of History of Science, Symposium on Failed Technologies, Hamburg, West Germany, August 1989.

“The Mines Branch and Canada’s Program for Energy Self-Sufficiency,” Joint Meeting of the American Chemical Society, and the Chemical Congress of North America, Toronto, Ontario, Canada, June 1988.

“Synthetic Fuels in Japan,” Annual Meeting of the History of Science Society, Raleigh, North Carolina, October 1987.

“The Bureau of Mines’ German Synthetic Fuel Scientists,” Annual Meeting of the Society for the History of Technology, Dearborn, Michigan, October 1985.

“A Special Relation: The Development of Synthetic Fuels in Nazi Germany,” XVIIth International Congress of History of Science, University of California, Berkeley, California, August 1985.

“US Bureau of Mines: Early Research on Coal Hydrogenation,” Annual Meeting of the History of Science Society, Norwalk, Connecticut, October 1983.

“Synthetic Petroleum from Coal Hydrogenation: Its History and Present State in Texas,” Texas State Historical Society Meeting, El Paso, Texas, March 1981.

“The Production of Synthetic Fuels in Great Britain, 1910-1945,” Joint Meeting of the American Historical Association and the History of Science Society, New York City, New York, December 1979.

“Friedrich Bergius and the Rise of the German Synthetic Fuel Industry,” Annual Meeting of the History of Science Society Meeting, Madison, Wisconsin, October 1978.

### **Other Presentations**

“Science and Religion,” Jordan Institute, Texas A&M University, November 2002.

“Turning Points in the History of Chemistry,” Texas A&M Chemistry Department Graduate Students Association, November 2001.

“Complexity in Science,” Texas A&M Undergraduate Honors Group, April 2000.

“Evolution and Creation,” Texas A&M Student Atheists Association, April 1999.

“The Electron Theory of Valence,” Chemical Education Interest Group, Department of Chemistry, Texas A&M University, October 1999.

“History of Science,” Graduate Seminar, Texas A&M Journalism Department, September 1996.

“Leonardo da Vinci: Artist, Scientist, Engineer,” Pi Tau Sigma, National Mechanical Engineering Honor Society, Texas A&M University, November 1995.

“Humans in the Designed World,” Convocation Address, Texas Project 2061: The Designed World. Science Literacy Project of the American Association for the Advancement of Science, Texas A&M University, November 1993.

“Sharing the Continent: Canada and the United States,” The Cultures of Canada, Mexico, and the United States: Contrast and Conflict, Symposium, Wiley Lecture Series, Texas A&M University, February 1991.

“Historical Perspectives on Science, Technology, and Society,” National Science, Technology, and Science Leadership Conference, Region 5: Arkansas, Louisiana, New Mexico, Oklahoma, and Texas; Texas A&M University, College Station, October 1989.

“Evolution and Creation Science,” Texas A&M University Students with Alternative Philosophies, November 1988.

“The History of Science and Its Contribution to the Sciences,” Texas A&M University Students' Chemistry Club, November 1988.

“What the History of Science Has to Offer Science Educators,” Department of Curriculum and Instruction, Texas A&M University, November 1988.

“What is History of Science?” Above and Beyond, Texas A&M University Science Students' Club, March 1983.

“A History of Electrical Theories and Their Applications,” Part 1 and Part 2, Department of Electrical Engineering, Texas A&M University, November 1982.

“The History and Development of Scientific Ideas,” Department of Oceanography, Texas A&M University, December 1981.

“Technology and Human Values,” Department of Agricultural Engineering, Texas A&M University, December 1979.

## ***SERVICE***

### **Departmental Service**

Climate Committee, 2024-present

Library Committee, 2015- 23

Faculty Adviser, *Phi Alpha Theta*, 1998-2011. While I served as adviser, *Phi Alpha Theta*, beginning in 2002 published seven volumes of its on-line journal *Gaines Junction*. The journal is available at PAT's website <http://pat.tamu.edu>. The Glasscock Center provided funds for the start-up.

Personnel Committee, 1987-present

Undergraduate Committee, 1980-81, 1983-86, 1988-90, 1994-95

Marshall, Graduation Exercises, Summer 1987

Tenure and Promotion Committee, 1986-87

European Committee, 1982-83, 1987-88

History of Technology Search Committee, 1981, 1986-87

Planning and Priorities Committee, 1985-86

Department Head Search Committee, 1984-85

Research Contact Representative, 1982-86

Chair, Social Committee, 1983-84

Visiting Professors Search Committee, 1983-84

Graduate Committee, 1982-83

American History Survey Readings Committee, 1978-80, 1981-82

Departmental Self-Study Committee, 1981-82

History of American Sea Power Search Committee, 1981

Commencement Representative, 1980

Representative, TAMU Career Day, 1979

Coordinator, Brazos County United Way, 1979

### **College Service**

Adviser, College of Engineering Curriculum Review Committee, 1999-2000

Faculty Distinguished Achievement Award in Teaching Committee, 1989

Academic Resources Committee, 1989

Liberal Arts Council Representative, 1984-86

Moderator, Session on Oil Policy, *Phi Alpha Theta* Annual Meeting, April 1983

Texas A&M Energy & Mineral Resources Advisory Council, 1981-83

College of Liberal Arts Advisory Committee for Continuing Education, 1980-82

### **University Service**

Judge, Texas Junior Science and Humanities Symposium,

sponsored by the College of Science, Texas A&M University, annually from 2006-17

Judge, Texas A&M Regional Science Bowl

sponsored by the College of Science, Texas A&M University, annually from 2006-present

Judge, Texas A&M Regional Junior Science Bowl

sponsored by the College of Science, Texas A&M University, annually from 2006-present

Texas Science Olympiad, supervisor for the History of Science,

sponsored by the College of Science, Texas A&M University, annually from 2006-12

Moderator, Fellows Symposium, Texas A&M Honors Program, April 2004

Chair, Review Panel International Research Travel Assistance Grants, 2003

Member, Review Panel International Research Travel Assistance Grants, 2002

Co-organizer, History of Chemistry Lecture Series. Texas A&M University Chemistry Graduate Students Association organized a History of Chemistry Lecture Series that started in 2001 and continued through 2003. I and five speakers from American universities presented

lectures on the History of Chemistry.

Advisor, Hindu Students Association 1997-2006.

“The History of Science in the Science Curriculum,” Science, Technology, and Youth, Science-Technology Symposium for Central Texas Students and Science Teachers, Texas A&M, March 1987- 2003.

“History of Science in the Science Curriculum,” Bryan Independent School District’s Teacher In-Service Session, Bryan, Texas, January 1993.

“Science, Technology, and Society,” Science, Technology, and Youth, Science-Technology Symposium for Central Texas Students and Science Teachers, Texas A&M, March 1991-94.

Advisory Council, Center for Science and Mathematics Education, 1992-94

Faculty Senate Appointee as College of Liberal Arts Representative on the Scholarship Committee, 1990-93

Interviewer, Texas A&M Student Delegates to SCONA 1990, US Foreign Aid: Purpose, Players, and Politics, November 1989

Interviewer, Texas A&M Student Delegates to SCONA 1989, Japan: The Power of a Growing Economy, November 1988

Co-Chairman, Kenneth Manning Lecture, “The Role of Blacks in American Science and Technology,” March 1986. Manning is a professor of the History of Science at MIT.

TAMU Science, Technology and Society Group, 1984-2004

University Undergraduate Fellows Program, Judge Senior Honor Theses, 1984

Member, Texas A&M University Mentors’ Program, 1980-present

### **Community Service**

Assisted high school students with their National History Day projects, providing source information and telephone interviews.

Melany Bustos and Avery Seale, Navasota, Texas, invention of the radio, April 2023

Sierra Obermoeller-Gilmer, Austin, Texas, on the Scopes Trial, March 2016

Iugenio Cobio, Houston, on Harvey Wiley, 2015

Omri Leshem, Plantation, Florida, on J. Robert Oppenheimer, 2015

Lecture, “Galileo, Science, and the Church,” St Mary’s Church, College Station, Texas, February 2002.

“The Marie Curie Exhibition,” website editor for *Women in Science*, a biographical collection of forty women scientists. The exhibition was on tour throughout the United States, March-April 2000.

“The German Atomic Bomb Project,” two-part television interview with Art Rascon, KTRK-TV Channel 13, Houston, 27-28 October 1999.

Lecture, “Galileo, Science and the Church,” Texas A&M University Catholic Faculty, St. Mary’s Church, College Station, Texas, November 1981.

### **Service to Profession**

Chair and organizer, session on “Energy and the Environment: Conflict or Compatibility,” XXVIIth International Congress of the History of Science and Technology, Dunedin, New Zealand, June-July 2025.



Chair and organizer, session on “The Interrelations of Politics, Environment, Culture, and Technology,” International Committee for the History of Technology, 50th Symposium, Tallinn, Estonia, August 2023, virtual conference because of Covid-19.

Chair and organizer, session on “Technology-Based and Technology-Generated Decisions,” 49th Symposium of the International Committee for the History of Technology, University of Ostrava, The Czech Republic, September-October 2022, virtual conference because of Covid-19.

Chair and organizer, session on “Energy and the Environment: Conflict or Compatibility,” XXVIth International Congress of the History of Science and Technology, Prague, The Czech Republic, July 2021, virtual conference because of Covid-19.

Chair and organizer, session on “Energy and the Environment: Conflict or Compatibility,” 47th Symposium of the International Committee for the History of Technology, Eindhoven, The Netherlands, July 2020, virtual conference because of Covid-19.

Chair and organizer, two sessions on “Energy, Power, Politics, Technology and the Environment,” 46th Symposium of the International Committee for the History of Technology, Katowice, Poland, July 2019.

Chair and organizer, session on “Energy and the Environment,” 45th Symposium of the International Committee for the History of Technology, St. Etienne, France, July 2018.

Chair and organizer, two sessions on “Energy and the Environment,” XXVth Congress of the History of Science, Technology and Medicine, Rio de Janeiro, Brazil, July 2017.

Chair and organizer, 30th Annual Meeting of the Lone Star Historians of Science, Texas A&M University, April 2017.

Chair and organizer, session on “Environmental Innovations and Crises,” 43rd Symposium of the International Committee for the History of Technology, Porto, Portugal, July 2016.

Chair and organizer, 27th Annual Meeting of the Lone Star Historians of Science, Texas A&M University, March 2014.

Chair and organizer, 23rd Annual Meeting of the Lone Star Historians of Science, Texas A&M University, March 2010.

Chair and organizer, 20th Annual Meeting of the Lone Star Historians of Science, Texas A&M University, April 2007.

Chair, session on “Controversial Technologies,” 34th Symposium of the International Committee for the History of Technology, Copenhagen, Denmark, August 2007.

Chair and organizer, 17th Annual Meeting of the Lone Star Historians of Science, Texas A&M University, April 2004.

Chair, session on “Technology and the Landscape,” 30th Symposium of the International Committee for the History of Technology, St. Petersburg and Moscow, Russia, August 2003.

Chair session on “Technology and the Landscape,” 29th Symposium of the International Committee for the History of Technology, Granada, Spain, June 2002.

Chair and organizer, 14th Annual Meeting of the Lone Star Historians of Science, Texas A&M University, March 2001.

Chair, session on “Energy and Environment,” 27th Symposium of the International Committee for the History of Technology, Prague, Czech Republic, August 2000

Chair and organizer, 10th Annual Meeting of Lone Star Historians of Science, Texas A&M University, March 1997.

Chair and organizer, 6th Annual Meeting of Lone Star Historians of Science, Texas A&M

University, March 1993.  
Chair and organizer, session on “Twentieth-Century Fossil Fuel Research in Government and Industrial Laboratories” Joint Meeting of the American, British, and Canadian History of Science Societies, Toronto, Ontario, Canada, July 1992.  
Co-chair and organizer, 3rd Annual Meeting of Lone Star Historians of Science, Texas A&M University, April 1990.  
Contributor to Scientists’ Institute for Public Information (media resource service), 355 Lexington Avenue, New York, New York, 1987-present.

As indicated under the section entitled Manuscripts and Proposals Reviews, I have contributed significant time and effort in service to my profession as a reviewer for the National Science Foundation, National Endowment for the Humanities, and journals such as *Technology and Culture*, *Isis*, *Journal of Chemical Education*, and *Annals of Science*.

### **Interviews Given**

Stephen J. Cerulli, Calandra Italian-American Institute, Queens College, City University of New York, New York City, 19 July 2021: survey of Italian American educators.

Tasya Nasoetion, TAMU Chemical Engineering Student, participating in Texas A&M National Science Foundation Innovation Corps (i-Corps) program sponsoring engineering students in customer discovery research, May 2018.

Gap Barbin article, “After 140 years, A&M continues to educate students to meet the needs of a technologically advancing world,” *Texas A&M Battalion*, 17, 17 November 2016, pp.1-2.

Josh Hopkins article, “The Other Night Bonfire Didn’t Burn,” *Texas A&M Battalion*, 16, November 2015, pp. 1-3.

Steve Walker, Head of R&D for the Solidea Group Power Can Project, Polish Gekon Funding, interview on IG Farben’s World War II research on synthetic fuels. His organization is interested in establishing a research center in Poland that will hold copies of Germany’s World War II synthetic fuel documents that we have in the TAMU Library Archives. December 2014.

Andy Extance, science writer in Exeter, England for an article he published on synthetic fuels in *Chemistry World*, May 2011.

Tony Palermo, manager, Linde LLC, New Providence, NJ, *Synthetic Fuel Production*, 22 September 2009.

Wolfgang Lauenstein, BASF, Ludwigshafen, Germany, *Fischer-Tropsch Archive*, June 2010.

Randy Taylor, HydroCoal Technologies, Athens, Georgia, *Coal Hydrogenation*, June 2010.

Kim Tanneberger, specialist, *Lloyd’s Register*, London, England, *Fischer-Tropsch Archive*, 14 August 2009.

Maggie Zackowitz, writer, *National Geographic Magazine*, Washington, DC, *Farrington Daniels and Solar Energy*, 8 May 2009.

Merrill Sherman, Associated Press, *Fischer-Tropsch Process*, 10 March 2008.

Brian Vitagliano, CNN, *Fischer-Tropsch Process*, 21 May 2008, aired on Memorial Day 2008.

Yochi Draezen, *Wall Street Journal*, *Fischer-Tropsch Process*, 20 May 2008.

Robert Kaper, Naval Air Systems Command Public Affairs Office, Maryland, *Fischer-Tropsch Process*, 9 July 2008.

Donna Howell, *Investor's Business Daily*, article on leaders and success, 17 October 2008.

Russell Gold, business writer, *Wall Street Journal*, *Fischer-Tropsch Synthetic Fuel Process*, November 2004.

Edward Luttwak, senior fellow, The Center for Strategic and international Studies, Washington, DC, Member National Security Study Group, Department of Defense, *Fischer-Tropsch Synthetic Fuel Process*, August 2005.

Joseph Morris, business editor, the *Charleston Gazette*, West Virginia, *Fischer-Tropsch Synthetic Fuel Process*, September 2005.

Miguel Sancho, producer, 60 Minutes, CBS, *Fischer-Tropsch Synthetic Fuel Process*, December 2005.

Felicia Beberica, ABC News, New York City, *Fischer-Tropsch Synthetic Fuel Process*, October 2004.

Susan Kitchens, *Forbes Global Magazine*, *Fischer-Tropsch Synthetic Fuel Process*, December 2003.

Amy Daugherty, "Centuries of Memories," *The Eagle*, Bryan-College Station, Texas, 9 January 2000.

Masao Iwasaki, "Synthetic Fuel," Research Association for Petroleum Alternatives Development (RAPAD), Showa Shell Sekiyu K.K., Tokyo, January 1991.

Laura White, "University Teaching Award," *Illuminations* (College of Liberal Arts Newsletter), Volume 4, Fall 1988.

Dean Takahashi, "Science, Technology, Society," *The Dallas Times-Herald*, September 1988.

Steve Vinson, "Translators Seek Funding for Work on Nazi Papers," *The Eagle*, Bryan-College Station, Texas, 17 November 1986, 1-2.

Dudley Lynch, "The Cassandra Project," *Vision Magazine*, PBS, Dallas, January 1980, 17-20.

Andrew Pollack, "Germany's Synthetic Fuel Industry," *The Dallas Times-Herald*, October 1979.

Scott Pelley, "Germany's Synthetic Fuel Industry," KXAS-TV, Fort Worth, October 1979.

***PROFESSIONAL MEMBERSHIPS (some discontinued)***

American Historical Association

Canadian Science and Technology Historical Association

Forum for the History of Science in America

History of Chemistry Society

History of Science Society

Lone Star Historians of Science

Society for the History of Technology

Standing Committee on History of Solar Energy, International Solar Energy Society  
2004-10

***PROFESSIONAL LISTINGS***

*American Men and Women of Science*

*Canadian Science and Technology Historical Association Annual Directory*

*Dictionary of International Biography*

*History of Science Guide*

*International Directory of Distinguished Leadership*

*Society for the History of Technology Membership Directory*

*Who's Who in American Education*

*Who's Who in Science and Engineering*

*Who's Who in Technology*

*Who's Who in the World*

***HONORS AND AWARDS***

Texas A&M University Faculty Development Leave, Spring semester 1999.

Texas A&M University Association of Former Students University-Level Distinguished Teaching Award, 1988. Laura White article, "University Teaching Award," *Illuminations* (College of Liberal Arts Newsletter), Volume 4, Fall 1988.

Texas A&M University Faculty Development Leave Spring semester 1987.

Ford Foundation Dissertation Fellowship, University of Wisconsin/Madison, 1972-73.

National Science Foundation Fellowship, University of Wisconsin/Madison, 1970-72.

New York State Regents Scholarship, State University of New York/Cortland, 1966.

National Science Foundation Summer Institute Award, Yale University, New Haven, Connecticut, 1965.

National Science Foundation Summer Institute Award, Brown University, Providence, Rhode Island, 1964.

New York State Regents Scholarship, Niagara University, Niagara Falls, NY, 1963.

***OTHER EXPERIENCE***

- 1974-77      Archivist for the scientific papers of Farrington Daniels (1889-1972), Professor Emeritus of Chemistry at the University of Wisconsin, Madison. Collaborated with Olive Bell Daniels in writing Farrington Daniels' biography.
- 1969-74      Graduate Student, History of Science, University of Wisconsin, Madison.

***PERSONAL DATA***

Address (work):   Department of History                      Telephone: 979/845-7151  
                          Texas A&M University                      Fax:            979/862-4314  
                          College Station, TX 77843-4236   e-mail: a-stranges@tamu.edu