**Thomas S. Kuntzleman**

**Education**

Ph.D. University of Michigan, Ann Arbor, MI.

Charles F. Yocum, advisor.

Concentration: Physical Chemistry, with emphasis in Biophysics.

Graduated December, 2005.

Thesis: *Redox chemistry of the calcium-manganese cluster of photosystem II as probed by chemical reducing agents.*

M.S. University of North Carolina at Greensboro, Greensboro, NC.

Major: Chemistry.

Graduated August, 2000.

Thesis: *Fluoride inhibition and the role of the 17 kDa and 23 kDa extrinsic polypeptides in calcium and chloride activation Photosystem II.*

No degree conferred Institute of Chemical Education, University of Wisconsin at Madison, Summer, 1994.

B.S. Ed. Bloomsburg University, Bloomsburg, PA.

Major: Secondary Education/Chemistry.

Graduated May, 1991, Summa Cum Laude.

Highest GPA, College of Professional Studies

**Professional Experience**

2023 – present Assistant Professor of Teaching, Wayne State University

2019 – 2021 Dean, School of Natural Sciences, Spring Arbor (MI) University.

2015 – 2023 Professor of Chemistry, Spring Arbor (MI) University.

2010 – 2015 Associate Professor of Chemistry, Spring Arbor (MI) University.

2004 – 2010 Assistant Professor of Chemistry, Spring Arbor (MI) University.

2005 – present Director, Cougar Science Camp, Spring Arbor (MI) University.

2017 – 2022 Editorial Advisory Board, Journal of Chemical Education

2017 – present Associate Editor, Chemical Education Exchange

2013 – 2016 Lead User, Chemical Education Exchange

2007 – 2011 NAIA Faculty Athletic Representative, Spring Arbor (MI) University.

2003-2004 Graduate Student Instructor, University of Michigan, Ann Arbor, MI.

2000-2004 Research Assistant, University of Michigan, Ann Arbor, MI.

2001-2003 Adjunct Instructor of Chemistry, Jackson (MI) College.

1998-2000 Teaching/Research Assistant, University of North Carolina at Greensboro.

* 1. Teacher/Coach, Orange County Schools, Orange County NC.
  2. Assistant Coach of Wrestling, Duke University, Durham, NC.

**Fellowships/Scholarships**

2019-present Honorary Fellow, Wisconsin Initiative for Science Literacy

2000-2002 Molecular Biophysics Training Grant Fellow, University of Michigan

**Awards/Honors**

2024 American Chemical Society Helen M. Free Award for Public Outreach

2023 ChemEd 2023 Irwin Talesnick Award

2022 YouTube Silver Creator Award

2020 Spring Arbor University Faculty Merit Award

2017 *Journal of Chemical Education* Highly Prolific Author

2016 Flame Challenge Finalist (Video Competition)

2015 Winner of the ChemEd 2015 So You Think You Can Demo Competition

2013 Spring Arbor University Second Mile Award

2011 Spring Arbor University Faculty Merit Award

2009 Spring Arbor University Faculty Merit Award

1997 Runner up, Orange County Schools Teacher of the Year, Hillsborough, NC.

1997 Stanford Middle School Teacher of the Year, Hillsborough, NC.

**Publications**

## Kuntzleman, T. S.; Matti, A. Tomco, D. Chemistry in a Bottle. *Journal of Chemical Education* 2024, *101*, 4122-4124.

## Campbell, D. J.; Ott, Q.; Kuntzleman, T. S. Dealing with Dust Entrained in the Nitrogen Plume Demonstration. *Journal of Chemical Education* 2023, *100*, 4122-4124.

## Kuntzleman, T. S.; Kenney, J. B. Quantifying the Dynamics of the Candy Cola Soda Geyser Using a Simple and Inexpensive Protocol. *Journal of Chemical Education,* 2023*,* *100*, 4114-4118.

# Kuntzleman, T. S. **Estimation of the Curie Temperature of Nickel Using a Simple Thermodynamic Analysis**. Journal of Chemical Education, **2023**, 100, 2789 – 2792.

# Campbell, D. J.; Kuntzleman, T. S.; Lippincott, K.; Yassin, A.; Dar, K.; Ott, Q. **Plumes from Using Iron to Boil Liquid Nitrogen to Illustrate the Importance of Surface Area.** Journal of Chemical Education, **2023**, 100, 1699 – 1703.

# Kuntzleman, T. S. **Cola en Mentos - De kinetica achter het Cola Light en Mentos experiment.** *NVOX*, **2022**, *47* (10), 52-54.

# Kuntzleman, T. S.; Kuntzleman, J. T.; Campbell, D. J. **A Simple Chemical Oscillator: The “Educator”.** Journal of Chemical Education, **2022**, 99, 3540 – 3545.

# Kuntzleman, T. S.; Hogan, L. T. **Gold at the End of the Rainbow: A Simple and Colorful Modification of the Golden Penny Demonstration.** Journal of Chemical Education, **2022,** 99, 3083-3086.

Kuntzleman, T.S.; Campbell, D. J. The Chemical Wonders of No-Mess Markers Journal of Chemical Education 2022, 99, 2364-2371.

Kuntzleman, T.S.; Imhoff, A. M. How Many Bubbles Are in the Foam Produced during the Candy-Cola Soda Geyser? Journal of Chemical Education 2021, 98, 3915 – 3920.

Kuntzleman, T. S.; Corts, S. Schmidt, A. At-Home Titration: Magnesium Hydroxide in Milk of Magnesia using an Inexpensive Digital Balance and Natural Food Dye as Indicators Journal of Chemical Education, 2021, 98, 2592 – 2595.

Kuntzleman, T.S.; Kuntzleman, J.T. **Ethanol as a Probe for the Mechanism of Bubble Nucleation in the Diet Coke and Mentos Experiment** *Molecules,* **2021**, *26*, 1691.-1707.

Kuntzleman, T.S.; Mullen, A. **The Effect of Temperature on Experiments Involving Carbonated Beverages** Journal of Chemical Education, **2020**, 97, 4033 – 4038.

Kuntzleman, T. S.; Cullen, D. M.; Milam, S.; Ragan, D. **Rapid Formation of Copper Patinas: A Simple Chemical Demonstration of Why the Statue of Liberty is Green** Journal of Chemical Education, **2020**, 97, 2244 – 2248.

# Kuntzleman, T. S.; Johnson, R. **Probing the Mechanism of Bubble Nucleation in and the Effect of Atmospheric Pressure on the Candy–Cola Soda Geyser** Journal of Chemical Education, **2020**, 97, **980 – 985 (**article featured in *Chemical & Engineering News*, **2020**, (98), *14*.

Kuntzleman, T. S.; Annis, J.; Anderson, H.; Kenney, J. B.; Doctor, N. Kinetic Modeling of and Effect of Candy Additives on the Candy-Cola Soda Geyer: Experiments for Elementary School through Physical Chemistry Journal of Chemical Education, 2020, 97, **283 – 299.**

Baldwin, B. W.; Bunker, K. R.; Kuntzleman, T. S. Extraction of dyes contained in glow sticks using liquid CO2. *Green Chem. Lett. Rev.*, 2019, 12, **101 – 106**.

Kuntzleman, T. S. Electrochemistry with Simple Materials to Create Designs and Write Messages. Journal of Chemical Education, 2019, 96, **1178 – 1181.**

# Kuntzleman T. S.; Bunker, K. R.; Bartlett, A. A. **Simple Glowmatography: Chromatographic Separation of Glow-Stick Dyes Using Chalk.** Journal of Chemical Education, **2019**, 96, **1506 – 1509.** (article featured on *Journal* cover).

## Kuntzleman, T. S.; Nydegger, M. W.; Shadley, B.; Doctor, N.; Campbell, D. J. [Tribonucleation: A New Mechanism for Generating the Soda Geyser](https://pubs.acs.org/doi/10.1021/acs.jchemed.8b00127) Journal of Chemical Education, 2018, 95, **1345 – 1349.**

Baldwin, B. W.; Kuntzleman, T. S. **Liquid CO2 in Centrifuge Tubes: Separation of Chamazulene from Blue Tansy *Tanacetum annuum* Oil via Extraction and Thin Layer Chromatography** *Journal of Chemical Education*, **2018**, *95*, 620 – 624.

Kuntzleman, T. S.; Davenport, L. S.; Cothran, V. I.; Kuntzleman, J. T.; Campbell, D. J. **New Demonstrations and New Insights on the Mechanism of the Candy-Cola Soda Geyser**,*Journal of Chemical Education*, **2017**, *94*, 569–576.

Sims, T. P. T.; Kuntzleman, T. S. **Kinetic Explorations of the Candy - Cola Soda Geyser.** *Journal of Chemical Education*, **2016**, *93*, 1809–1813 (article featured on the *Journal* cover).

Hall, J. M.; Amend, J. R.; Kuntzleman, T. S. Experiments to Illustrate the Chemistry and Bouncing Ability of Fresh and Spent Zinc-Manganese Oxide Alkaline Batteries. *Journal of Chemical Education*, 2016, *93*, 676–680.

Kuntzleman, T. S.; Jacobson, E. C. **Teaching Beer’s Law and Absorption Spectrophotometry with a Smart Phone: A Substantially Simplified Protocol.** *Journal of Chemical Education*, **2016**, *93*, 1249–1252.

Kuntzleman, T.S. **National Chemistry Week: A Platform for Scholarship** *Journal of Chemical Education* **2015,** *92*, 1585–1588 (invited editorial).

Kuntzleman, T.S. **The Dynamic Density Bottle: A Make-and-Take, Guided Inquiry Activity on Density** *Journal of Chemical Education*, **2015,** *92*, 1503–1506 (article featured on the *Journal* cover).

Kuntzleman, T.S.; Ford, N.; No, J-H.; Ott, M.E. **A Molecular Explanation of How the Fog Is Produced when Dry Ice Is Placed in Water.** *Journal of Chemical Education*, **2015,** *92*, 643–648 (article featured on the *Journal* cover).

Kuntzleman, T. S.; Baldwin, B. W.; Rohrer, K. N.; Kingsley, J.; Schaerer, C. L.; Sayers, D. K.; West, V. B. **Constructing an Annotated Periodic Table Created with Interlocking Building Blocks: A National Chemistry Week Outreach Activity for All Ages** *Journal of Chemical Education*, **2013**, *90*, 1346 – 1348 (article featured in *Chemical & Engineering News*, **2013**, (91), *41*, 48.

Kuntzleman, T.S.; Mork, D.J.; Norris, L.D.; Maniére-Spencer, C.D. **Creating and Experimenting with Fire Gel, an Inexpensive and Readily Prepared Insulating Material** *Journal of Chemical Education*, **2013**, *90*, 947–949.

Williamson, J.C.; Kuntzleman, T.S.; Kafader, R.A. **A Molecular Iodine Spectral Data Set for Rovibronic Analysis** *Journal of Chemical Education*, **2013**, *90*, 383 – 385.

Kuntzleman, T.S.; Rohrer, K.; Schultz, E. **The Chemistry of Lightsticks: Demonstrations to Illustrate Chemical Processes** *Journal of Chemical Education*, **2012**, *89*, 910 – 916 (article featured on the *Journal* cover).

Kuntzleman, T.S.; Kenney, J.B.; Hasbrouck, S.; Collins, M.J.; Amend, J.R. **Simple and Automatic Coulometric Titration of Acid Using Non-Isolated Electrodes** *Journal of Chemical Education*, **2011**, *88*, 1565 – 1568.

Kuntzleman, T.S.; Baldwin, B.W. **Adventures in Coaching Young** **Chemists** *Journal of Chemical Education*. **2011**, *88*, 863 – 867.

Kuntzleman, T.S. **Chromatography: A Simple Kinetic Approach** *The Chemical Educator*, **2011**, *16*, 136 – 137.

Howder, C.R.; Groen, K.D.; Kuntzleman, T.S. **And the Oscar Goes to … A Chemist!** *Journal of Chemical Education*. **2010**, *87*, 1060 – 1061 (article featured on the cover of the *Journal* in September, 2012 as one of the top 15 all-time *JCE* Classroom Activities).

Kuntzleman, T.S.; Richards, C. **Another Method for Determining the Pressure Inside an**

**Intact Carbonated Beverage Can (or Bottle)**. *Journal of Chemical Education*. **2010**, *87*, 993.

Kuntzleman, T.S.; Hasbrouck, S.; Smith, J. **Demonstrating Various Flame Tests Using Common Household Materials.** *Journal of Chemical Education*. **2010**, *87*, 790 – 792.

Kuntzleman, T.S.; Masayuki, S. **Intermolecular Interactions: Permanent Dipole- Permanent Dipole, Permanent Dipole-Induced Dipole, and London Dispersion Energies.** *Journal of Chemical Education*, **2009**, *86*, 1469.

Stewart, G.; Kuntzleman, T.S.; Amend, J. R.; Collins, M. J. **Affordable Cyclic Voltammetry.** *Journal of Chemical Education*, **2009**, *86*, 1080 - 1081.

Kuntzleman, T.S.; Haddy, A. **Fluoride inhibition of photosystem II and the effect of removal of the PsbQ subunit.** *Photsynth. Res.* **2009**, *102*, 7 – 19.

Haddy, A., Ore, B.M.; Kuntzleman, T.S. **Characteristics of the Dark-Stable Multiline EPR Signal of Ca2+-Depleted Photosystem II. *Biophys. J.* 2009, *96*, 526a.**

Kuntzleman, T.S.; Comfort, A.; Baldwin, B. **Glowmatography.** *Journal of Chemical Education*, **2009**, *86*, 64 – 67 (article featured on the *Journal* cover).

Popelkova, H.; Commet, A.; Kuntzleman, T.; Yocum, C.F.  **Inorganic Cofactor Stabilization and Retention: The Unique Functions of the Two PsbO Subunits of Eukaryotic Photosystem II.** *Biochemistry*, **2008,** *47*, 12593 – 12600.

Kuntzleman, T.S.; Sellers, D.; Hoffmeyer, R. **Having** **a Ball with Chemistry: More Things to Try.** *Journal of Chemical Education*, **2008**, *85*, 1478 – 1480.

Kuntzleman, T.S., Ellison, M.; Tippin, J. **Construction of the Electronic Angular Wave Functions and Probability Distributions of the Hydrogen Atom.** *Journal of Chemical Education*, **2007**, *84*, 1886.

Kuntzleman, T.S., Swanson, M.S.; Sayers, D.K. **Visualizing the Transition State: A Hands-on Approach to the Arrhenius Equation.** *Journal of Chemical Education*, **2007**, *84*, 1776 – 1778.

Kuntzleman, T.S., **Construction of the Electronic Radial Wave Functions and Probability Distributions of Hydrogen-like Systems.** *Journal of Chemical Education*, **2007**, *84*, 1231.

Kuntzleman, T.; Yocum, C. **Hydoxylamine is a substrate analogue of water in PSII.** *Proceedings of the 13th International Congress of Photosynthesis*, **2005**, 365 – 367.

Kuntzleman, T.; Yocum, C.F. **Reduction-induced inhibition and Mn(II) release from the Photosystem II oxygen-evolving complex by hydroquinone or NH2OH are consistent with a Mn(III)/Mn(III)/Mn(IV)/Mn(IV) oxidation state for the dark-adapted enzyme.** *Biochemistry* **2005**, *44*, 2129 – 2142.

Kuntzleman, T.; McCarrick, R.; Penner-Hahn, J.; Yocum, C. **Probing reactive sites within the Photosystem II manganese cluster: Evidence for separate populations of manganese that differ in Redox Potential.** *Phys. Chem. Chem. Phys.* **2004**, *6*, 4897 – 4904.

Letter:

Kuntzleman, T. **The Poetry of Science** *Chemical & Engineering News*, **2013**, (91), *22*, 4 – 5.

**Symposia Organized:**

ChemEd 2023 Conference, Guelph, Ontario: ChemEdX Demos Symposium

**Professional Presentations**

Oral:

July, 2024. Biennial Conference on Chemical Education, University of Kentucky, Lexington, KY. Integrating Quantitative Data Collection and Analysis into Lecture-Based Demonstrations.

July, 2024. Biennial Conference on Chemical Education, University of Kentucky, Lexington, KY. Chemical Demonstrations with Household Items.

March, 2024. (Invited) National Meeting of the American Chemical Society, Chicago, Il. *Experiments and Demonstrations for the Chemistry Classroom*.

Kuntzleman, T. July, 2023. ChemEd 2023 Conference, Guelph, Ontario. *Demos for the Classroom* (two presentations)

Kuntzleman, T. July, 2023. ChemEd 2023 Conference, Guelph, Ontario. *Coke and Mentos: Quantitative Experiments You Can Do in Your Classroom.*

July, 2023 (Invited): Meeting of the Upper Peninsula Local Section of the American Chemical Society. *Chemistry on the Beach.*

April, 2023 (Invited): Michigan State University Science Festival, East Lansing, MI. *At Home Science with Tommy Technetium.*

Kuntzleman, T. S. and Campbell, D. J. March, 2023. National Meeting of the American Chemical Society, Indianapolis, IN*. A Simplified Approach to Oscillating Chemical Reactions.*

(Invited) Kuntzleman, T. S. August, 2022. National Meeting of the American Chemical Society, Chicago, Il. *Experiments and Demonstrations with Crayola’s Color Wonder Markers*.

(Invited) Kuntzleman, T. S. July, 2022. The Mole at the Biennial Conference on Chemical Education, Purdue University, West Lafayette, IL. *The Power of Chemistry*.

Kuntzleman, T. S. and Campbell, D. J. August, 2022. Biennial Conference on Chemical Education, Purdue University, West Lafayette, IL. The Wonderful Chemistry of Crayola’s “Color Wonder” Markers.

(Invited keynote) Kuntzleman, T. S. June, 2022. Associated Chemistry Teachers of Texas Conference. *Simple Activities and Demonstrations for the Chemistry Classroom.*

April, 2022 (Invited): Michigan State University Science Festival, East Lansing, MI. *Science is So Cool*!

Kuntzleman, T. November, 2021 (virtual). Colorado Science Conference. *Quantitatively Investigating the Coke and Mentos Experiment.*

Holsinger-Friesen, T., Bilbro, J. and Kuntzleman, T.S. September, 2019. Spring Arbor University Community of Learners Series. *Should Science Be Defended in a Post Truth World?*

(Invited) Kuntzleman, T. S. July, 2019. ChemEd 2019, Naperville, IL. *Construction of a Simple Device to Measure Kinetic Data in the Coke and Mentos Experiment.*

(Invited) Kuntzleman, T. S. May, 2019. Great Lakes Regional Meeting of the American Chemical Society, Lisle, IL. *Everyday Chemistry*

(Invited) Posthuma-Adams, E.; Kuntzleman, T. S. March, 2019. The 257th Meeting of the American Chemical Society, Orlando, FL*. Simple hands-on activities from ChemEdX.*

Kuntzleman, T. S. and Baldwin, B. W. July, 2018. Biennial Conference on Chemical Education, Notre Dame University. Small research projects in the chemistry classroom.

Kuntzleman, T. S. July, 2018. Biennial Conference on Chemical Education, Notre Dame University. Coke and Mentos: Simple experiment, rich chemistry.

(Invited) Kuntzleman, T. S. July, 2018. The Mole at Biennial Conference on Chemical Education, Notre Dame University. Charred Marshmallow Soufflé.

Baldwin, B. W.; Kuntzleman, T. S. July, 2018. Biennial Conference on Chemical Education, Notre Dame University. End of the year projects: twenty years of helping students accumulate sufficient failure.

Baldwin, B. W.; Kuntzleman, T. S. July, 2018. Biennial Conference on Chemical Education, Notre Dame University. Liquid carbon dioxide as a solvent for chromatography and TLC.

(Invited) Kuntzleman, T. S. March, 2018. The 255th Meeting of the American Chemical Society, New Orleans, LA*. Demonstrations, experiments and research involving the Diet Coke and Mentos Experiment.*

Kuntzleman. T. S. August 2017. ChemEd 2017 Conference, Brookings, SD. *Theory, Experiments and Demonstrations on the Diet Coke and Mentos Experiment.*

Kuntzleman. T. S. August, 2016. Biennial Conference on Chemical Education, University of Northern Colorado. Investigations on the Diet Coke/Mentos Experiment

Cullen, D.; Kuntzleman. T. S. August, 2016. Biennial Conference on Chemical Education, University of Northern Colorado. Who Needs a Spec-20? Using Smartphones to Teach about Solutions for Introductory Chemistry Courses.

Kuntzleman. T. S. August, 2015 ChemEd 2015 Conference, Kennesaw, GA. *Flame Gel: How Chemistry is Used in the Special Effects Industry to Safely Light Stunt Persons on Fire.*

Kuntzleman. T. S. August, 2015 ChemEd 2015 Conference, Kennesaw, GA. *Chemistry, Lego, and Density: A Great Combination.*

Kuntzleman. T. S. May, 2015 Joint Great Lakes/Central Regional Meeting of the American Chemical Society. *A Simple mechanism for fog formation in the dry-ice-in-water experiment.*

Kuntzleman. T. S.; Baldwin, B. W. August, 2014. 2014 Biennial Conference on Chemical Education. *Interfacing undergraduate research projects with summer science camp and other community outreach endeavors*.

Kuntzleman. T. S.; Ott, M. August, 2014. Biennial Conference on Chemical Education, Grand Valley State University. Dry ice *into water:* *Where does the cloudy fog actually come from*?

Kuntzleman. T. S. September, 2013. The 246th Meeting of the American Chemical Society, Indianapolis, IN. *Molecular Iodine Absorption and Emission Spectra: A Comprehensive, “Dry Lab” Analysis.*

Kuntzleman. T. S. July, 2012. 23rd Biennial Conference on Chemical Education, State College, PA. *Demonstrations with Lightsticks and Simple Materials*.

Amend, J.R. and Kuntzleman, T.S. 2011. The 192nd Two Year College Chemistry Consortium, North Canton, OH. . *Using Computers to Cut Costs and Buy Time for Inquiry*.

Kuntzleman, T.S. March, 2010. The 239th Meeting of the American Chemical Society, San Francisco, CA. *Can the Scholarship of Service be Expressed through Outreach?*

Baldwin, B.W. and Kuntzleman, T.S. March, 2010. The 239th Meeting of the American Chemical Society, San Francisco, CA. *How We Grow Interest in Chemistry in our Community.*

Kuntzleman, T.S. August, 2008. 21st Biennial Conference on Chemical Education, Bloomington, IN. *Chaotic Chemical Mechanisms in the Physical Chemistry Curriculum*.

Kuntzleman, T.S. August, 2007. The 234th Meeting of the American Chemical Society, Boston, MA. *Illustrating Dynamic Chemical Processes with Microsoft Excel.*

Kuntzleman, T.S. August, 2006. 20th Biennial Conference on Chemical Education, West Lafayette, IN. *Hands on Molecular Visualizations*.

Kuntzleman, T.S.; Yocum, C. F. March 13, 2005. The 229th Meeting of the American Chemical Society, San Diego, CA. *Redox Chemistry of the Oxygen Evolving Complex of Photosystem II.*

Kuntzleman, T.S. October 30, 2004. The 30th Midwest Regional Photosynthesis Meeting, Marshall, IN. *Reactivity of the High Potential, Calcium Sensitive Manganese in Photosystem II.*

Kuntzleman, T.S. November, 2002. The 28th Midwest Regional Photosynthesis Meeting, Marshall, IN. *Chemical Interaction of Reductants with the Manganese Cluster of Photosystem II.*

Kuntzleman, T.S. Spring, 2000. Annual Meeting of the North Carolina Academy of Sciences, Raleigh, NC. *Fluoride Inhibition and the Role of the 17 kDa and 23 kDa Extrinsic Polypeptides in Calcium and Chloride Activation Photosystem II.*

Poster:

Yassin, A.; Dar, K.; Lojpur, B.; Stoewer, A.; Kraft, C.; Kuntzleman, T.; Campbell, D. April, 2022. Illinois Heartland Section of the American Chemical Society Awards Banquet, Peoria, IL. *Surface Area Matters: Using Rusty Iron Spheres to Produce Gases Three Different Ways.*

Kirkwood, A.; Tran, T.; Kuntzleman, T.; Campbell, D. April, 2022. Illinois Heartland Section of the American Chemical Society Awards Banquet, Peoria, IL. *Oscillating Chaotic Reactions Involving Iron and Acidic Hydrogen Peroxide.*

Kuntzleman, T. S.; Doctor, N.; Campbell, D. J. March-April, 2019. The 257th Meeting of the American Chemical Society, New Orleans, LA*. The Coke and Mentos fountain: Probing popular claims.*

Kuntzleman, T. S.; Shadley, B. T.; Nydegger, M.; Doctor, N.; Campbell, D. J. March, 2018. The 255th Meeting of the American Chemical Society, New Orleans, LA*. Investigation of nucleation mechanisms in the candy-cola soda geyser*

Kuntzleman, J. T.; Kuntzleman, T. S. 2017 Conference of the Michigan Academy of Science, Arts, and Letters *Effect of alcohols and ionic solids on bubble sizes and fountain height in the Diet Coke and Mentos experiment*

Davenport, L. S.; Kuntzleman, T. S. 2017 Conference of the Michigan Academy of Science, Arts and Letters *Effect of beverage additives on bubble sizes and fountain height in the Diet Coke and Mentos experiment*

# Hall, J.; Amend, J.R.; Kuntzleman, T.S.; December, 2015 Pacifichem Meeting. *Bouncing batteries: Exploring the chemistry of alkaline cells.*

# Hall, J.; Kuntzleman, T.S.; May, 2015 Joint Great Lakes/Central Regional Meeting of the American Chemical Society. *Bouncing batteries: Exploring the chemistry of alkaline cells.*

# Francis, J.; Kuntzleman, T.S.; May, 2015 Joint Great Lakes/Central Regional Meeting of the American Chemical Society. *Coulometric titration of thiosulfate in shampoo.*

Koppelman, B.E.; Wyman, A.J.; Kuntzleman, T.S.; September, 2013. The 246th Meeting of the American Chemical Society, Indianapolis, IN*. Flame gel: An interesting application of super absorbent polymers.*

Kuntzleman, T.S.; Ford, N.; Ott, M.E.; No, J.-H. September, 2013. The 246th Meeting of the American Chemical Society, Indianapolis, IN*. Mechanism of cloud formation in the dry ice in water experiment.*

Kuntzleman, T.S. and Welsh, D.A. September, 2013. The 246th Meeting of the American Chemical Society, Indianapolis, IN. [*Possible*](javascript:void(0)) *graphite formation on organic material.*

Rohrer, K.N.; Schaerer, C.L.; Kingsley, J.A.; Kuntzleman, T.S. and Baldwin, B.W. March, 2012. The 243rd Meeting of the American Chemical Society, San Diego, CA. [*American Chemical Society/International Year of Chemistry granted LEGO periodic table activity in the context of a Halloween outreach activity*](javascript:void(0))*.*

Kuntzleman, T.S. and Rohrer, K.N. March, 2012. The 243rd Meeting of the American Chemical Society, San Diego, CA. *Using Lightsticks to Teach a Variety of Chemical Concepts*.

Richards, C. and Kuntzleman, T. October 7, 2011. Midwestern Symposium on Undergraduate Research in Chemistry. *Determining the Pressure inside an Intact Carbonated Beverage Can and Possible Clathrate Formation*.

McKenzie, T. and Kuntzleman, T. October 7, 2011. Midwestern Symposium on Undergraduate Research in Chemistry. *The Electrochemistry Behind Blood Glucose Meters*.

Hasbrouck, S.D. and Kuntzleman, T.S. March, 2010. The 239th Meeting of the American Chemical Society, San Francisco, CA. *Electrochemical and Photometric Methods of Detecting Transient Chemical Chaos in the Ce(IV) Catalyzed Belousov-Zhabotinski Reaction*.

Kuntzleman, T.S., Baldwin, B.W. and Spring Arbor University Student Members of the American Chemical Society March, 2010. The 239th Meeting of the American Chemical Society, San Francisco, CA. *Marshmallow Movie Madness*.

Kuntzleman, T.S., Baldwin, B.W. and Spring Arbor University Student Affiliates of the American Chemical Society March, 2009. The 237th Meeting of the American Chemical Society, Salt Lake City, UT. *Let’s Get Fired Up: The Chemistry of Fireworks*.

Stewart, G. and Kuntzleman, T.S. March, 2008. The 235th Meeting of the American Chemical Society, New Orleans, LA. *Low Cost Voltammetry by Interfacing a Pine Research Cell with MicroLab Data Acquisition Equipment*.

Manby, J. Sellers, D. and Kuntzleman, T.S. March, 2008. The 235th Meeting of the American Chemical Society, New Orleans, LA. *Application of a Two Dimensional Particle in a Box Model to the Electronic Absorption Spectra of Polyaromatic Hydrocarbons and Porphyrin Molecules.*

Comfort, A., Kuntzleman, T.S. and Baldwin, B.W. March, 2008. The 235th Meeting of the American Chemical Society, New Orleans, LA. *Chromatographic Separation and Spectroscopic Characterization of the Dyes Present in Commercial Lightsticks.*

Kuntzleman, T.S., Baldwin, B.W. and Spring Arbor University Student Affiliates of the American Chemical Society March, 2008. The 235th Meeting of the American Chemical Society, New Orleans, LA. *The Bouncing Ball Breakdown*.

Kuntzleman, T.S. and Yocum, C.F. March, 2008. The 235th Meeting of the American Chemical Society, New Orleans, LA. *Redox properties of the Calcium Manganese Chloride Active Site of Photosystem II as probed by two phenylenediamines*.

Comfort, A.E. and Kuntzleman, T.S. March, 2007. The 233rd Meeting of the American Chemical Society, Chicago, IL. *Qualitative Determination of the Fluorescent Dyes in Commercial Lightsticks.*

Kwon, H.D.; Kenney, J.; Baldwin, B.W. and Kuntzleman, T.S. March, 2007. The 233rd Meeting of the American Chemical Society, Chicago, IL. *Synthesis and Computer Analysis of Two Related Chalcones.*

Kuntzleman, T.S. October, 2006. Midwest Area Chemistry Teachers at Liberal Arts Colleges, South Bend, IN. *Lessons and Animations using Excel and Mathcad.*

Haddy, A.; Bryson, D.; Sheppard, V. and Kuntzleman, T. July, 2006. Gordon Research Conference on Photosynthesis, Bryant University, Smithfield, RI. *Calcium dependence of the S2-state EPR signal at g = 4.1 from photosystem II.*

Kuntzleman, T.S. March, 2006. Regional meeting of the American Chemical Society, Frankenmuth, MI. *Student Adventures in Johnstone’s Triangle.*

Kuntzleman, T.S. and Yocum, C.F. November, 2005. The 31st Annual Midwest Regional Photosynthesis meeting, Marshall, IN. *The relationship between calcium and a subpopulation of high potential manganese within the oxygen evolving complex of photosystem II*.

Kuntzleman, T.S., Penner-Hahn, J.E., Yocum, C., August, 2005. 12th International Conference on Bioinorganic Chemistry, Ann Arbor, MI. Probing the Reactivity of the Photosystem II Manganese Cluster.

Kuntzleman, T.S. March 13, 2005. The 229th Meeting of the American Chemical Society, San Diego, CA. *Computer Predictions of Chemical Reactions*.

Kuntzleman, T.S. August, 2004. The 13th Annual Photosyntheis Congress, Montreal, Canada. *Hydroxylamine is a Substrate Analogue of Photosystem II.*

Kuntzleman, T.S. November, 2003. The 29th Midwest Regional Photosynthesis Meeting, Marshall, IN. *Evidence for Distinct High and Low Potential Sites in the Manganese Cluster of Photosystem II.*

Kuntzleman, T.S. December, 2002. Molecular Biophysics Symposium, Ann Arbor, MI. *Chemical Interaction of Reductants with the Manganese Cluster of Photosystem II.*

Kuntzleman, T.S. November, 2001. The 27th Midwest Regional Photosynthesis Meeting, Marshall, IN. *Mechanism of Attack of Hydroxylamine with the Manganese Cluster in Photosystem II.*

Kuntzleman, T.S. November, 2000. The 26th Midwest Regional Photosynthesis Meeting, Marshall, IN. *The Effect of Ammonia and Chloride on the Irreversible Inhibition of Photosystem II by Hydroxylamine.*

Kuntzleman, T.S. November, 2000. The 26th Midwest Regional Photosynthesis Meeting, Marshall, IN. *Fluoride Inhibition of Photosystem II.*

February, 1999. Seminar Series, University of North Carolina at Greensboro, Greensboro, NC.

*Endohedral Noble Gas Fullerenes.*

Kuntzleman, T.S. February 8, 2000. Fifth Annual Life and Physical Sciences Research Symposium, North Carolina A&T University, Greensboro, NC. *Characterization of Fluoride as an Inhibitor of Oxygen Evolution by Photosystem II of Higher Plants.*

Spring, 2000. Seminar Series, University of North Carolina at Greensboro, Greensboro, NC.

*Fluoride Inhibition of Photosystem II.*

Webinars / Online Conferences:

April, 2021 (Invited): Michigan State University Science Festival *Dazzling Demonstrations with Copper*.

April, 2021 (Invited): Michigan State University Science Festival *The Chemistry of the Statue of Liberty*.

November, 2020 (Invited) American Association of Chemistry Teachers Webinar Series *Soda Pop Science.*

August, 2020 (Invited) Communication in Science Conference Michigan 2020 *Navigating Difficult Conversations in Science.*

July, 2020 (Invited) American Association of Chemistry Teachers Webinar Series *The Chemistry Behind Why the Statue of Liberty is Green.*

June, 2020 (Invited) Associated Chemistry Teachers of Texas Biennial Conference *Demonstrations with Diet Coke and Mentos.*

April, 2020 (Invited) Michigan State University Science Festival *The Science of Diet Coke and Mentos.*

September, 2019 (Invited) American Association of Chemistry Teachers Webinar Series *Activities and Demonstrations Aligned with the 2019 National Chemistry Week Theme, “Marvelous Metals!”.*

January, 2019 (Invited) American Association of Chemistry Teachers Webinar Series *Chemistry Experiments with Familiar, Inexpensive, and Easily Obtained Materials.*

Workshops:

January, 2016. University of Detroit, Mercy. Presented how to use the MicroLab data acquisition interface to a group of 7 chemistry and biochemistry faculty members.

July, 2011. MicroLab, Inc. Bozeman, MT. Presented how to use the MicroLab data acquisition interface to a group of 8 high school teachers.

**Presentations and Exhibits on Campuses, at Local Schools and other Community Venues:**

Demonstrations shows at Cougar Science Camp open to public visitors (usually parents and other relatives):

June, 2021 Cougar Science Camp Lecture Series: *Science at Home* (10 lectures, virtual)

June, 2019 Cougar Science Camp Lecture Series: *Science and the Movies* (15 lectures)

June, 2018 Cougar Science Camp Lecture Series: *The Science of the Solar System* (15 lectures)

June, 2017 Cougar Science Camp Lecture Series: *Is it Science…or Magic*? (15 lectures)

June, 2016 Cougar Science Camp Lecture Series: *Forensic Science* (15 lectures)

June, 2015 Cougar Science Camp Lecture Series: *Super Science!* (15 lectures)

June, 2014: Cougar Science Camp Lecture Series: *Lights, Camera, Chemical Reactions!* (15 lectures)

June, 2013 Cougar Science Camp Lecture Series: *The Chemistry of Food* (10 lectures)

June, 2012 Cougar Science Camp Lecture Series: *Making Waves with Science* (10 lectures)

June, 2011 Cougar Science Camp Lecture Series: *The International Year of Chemistry* (10 lectures)

June, 2010 Cougar Science Camp Lecture Series: *The Chemistry of the Solar System* (10 lectures)

June, 2009 Cougar Science Camp Lecture Series: *The Elements* (10 lectures)

June, 2008 Cougar Science Camp Lecture Series: *Great Scientists* (10 lectures)

June, 2007 Cougar Science Camp Lecture Series: No overall theme (5 lectures)

June, 2006 Cougar Science Camp Lecture Series: No overall theme (5 lectures)

June, 2005 Cougar Science Camp Lectures: No overall theme (2 lectures)

Lectures open to the public prior to the Halloween in the Science Lab celebration. This celebration begins with a lecture open to the public. Participants (usually K – 8th grade students and parents) then “trick-or-treat” through the science building on the campus of SAU. Rather than getting candy, students partake in hands-on science experiments (run by SAU students). Everyone (participants and SAU students alike) dresses in Halloween costumes for this event.

October, 2022: Halloween in the Science Lab: *Hot vs. Cold*

October, 2021: Halloween in the Science Lab: *The Self-Carving Pumpkin and other Halloween Experiments*

October 2020: Halloween in the Science Lab (virtual): *What’s in the Air?*

October 2019: Halloween in the Science Lab: *The Chemistry of Carbon Dioxide*

October, 2018: Halloween in the Science Lab: *The Science of Safely Lighting a Stunt Person on Fire.*

October, 2017, Halloween in the Science Lab: *Batman and the Joker under Pressure*

October 2016, Halloween in the Science Lab Lecture: *Combustion Chemistry*

October 2015, Halloween in the Science Lab Lecture: *Acids and Bases*

October, 2014 Halloween in the Science Lab Lecture: *Ghastly Gases*

October, 2013 Halloween in the Science Lab Lecture: *Favorite Chemistry Demonstrations*

October, 2012 Halloween in the Science Lab Lecture: *Sound*

October, 2011 Halloween in the Science Lab Lecture: *My Favorite Chemistry Demonstrations on Halloween*

October, 2010 Halloween in the Science lab Lecture: *The Chemistry of Fire*

Demonstrations at Swim-o-Rama. At this event, 1st – 3rd grade students enjoy time in the pool, science demonstrations / exhibits, a short science demonstration show, and a pizza party on the campus of Spring Arbor University:

February, 2013: *Gases*

February, 2012: *Electrochemistry*

February, 2011: *Acids and Bases*

February, 2010: *Carbon dioxide*

February, 2009: *Density*

February, 2008: *Sound*

February, 2007: *Light*

Math and Science Nights: At these events, K – 5th grade students, their parents, and some older siblings visit the school for an evening of fun with math and science. I supervise SAU students, who do the presenting at these events. I also guide SAU students in the preparation and appropriate presentation of hands-on activities for elementary.

March, 2015: Michigan Center High School Math and Science Night.

May, 2014: Warner Elementary School Math and Science Night. For this particular event, I trained fifteen 5th grade students at Warner Elementary School how to do particular experiments. These 5th grade students presented to K – 4th grade students and their parents).

October, 2012 Warner Elementary School Math and Science Night (fall)

March, 2012 Warner Elementary School Math and Science Night (spring)

October, 2011 Warner Elementary School Math and Science Night (fall)

March, 2011 Warner Elementary School Math and Science Night (spring)

October, 2010 Warner Elementary School Math and Science Night (fall)

March, 2010 Warner Elementary School Math and Science Night (spring)

October, 2009 Warner Elementary School Math and Science Night (fall)

March, 2009 Warner Elementary School Math and Science Night (spring)

October, 2008 Warner Elementary School Math and Science Night (fall)

March, 2008 Warner Elementary School Math and Science Night (spring)

October, 2007 Warner Elementary School Math and Science Night (fall)

February, 2007 Hanover-Horton Elementary School

March, 2007 Warner Elementary School Math and Science Night (spring)

October, 2006 Warner Elementary School Math and Science Night (fall)

March, 2006 Warner Elementary School Math and Science Night (spring)

October, 2005 Warner Elementary School Math and Science Night (fall)

March, 2005 Warner Elementary School Math and Science Night (spring)

Pre-School Presentations:

March, 2007 Spring Arbor Free Methodist Church Pre-School: *Solids, Liquids and Gases*

February, 2003 Jack and Jill Pre-School, Jackson, MI: *Solids, Liquids and Gases*

Elementary School Presentations (at Warner Elementary School, Spring Arbor, MI, unless otherwise noted):

February, 2024: Conant Elementary School 5th grade assembly: *Rainbow Solutions*

August, 2022: Warner Elementary Back to School Night: *Fun with Liquid Nitrogen.*

June, 2021: Warner Elementary School, Mrs. Clanton’s 4th grade class: *The Bucket Launch.*

March, 2021 (virtual): Northwest Elementary School, Mrs. Morgan’s 5th grade class: *Chemical Magic.*

May, 2017: Keicher Elementary School 3rd Grade Classes: *Solids, Liquids, and Gases*.

December, 2016: Mrs. Kline’s Kindergarten Class: *Ice Cream with Liquid Nitrogen and Dry Ice!* (Worked with two dual enrolled WHS-SAU undergraduates, Ellie Kline and Justin Macchia).

June, 2015: Mrs. Frazier’s Fourth Grade Class: *Bernoulli’s Principle*

May, 2015: Paragon Charter Academy (entire school assembly): *The Chemistry of Fire*.

May, 2015: Mrs. Davey’s Fourth Grade Class: *Harry Potter and the Elephant Toothpaste Potion.*

March, 2015: Mrs. Gibb’s Fourth Grade Class: *Floating and Sinking*

March, 2015: Mrs. Davey’s Fourth Grade Class: *The Dynamic Density Bottle*

March, 2013. Sharp Park Elementary School, Jackson, Michigan (entire school assembly) *The Fire Triangle*

March, 2013: Mrs. Hinckley’s Fourth Grade Class: *Solids, Liquids and Gases*

March, 2013: National Reading Month, Warner School (entire school assembly) *Strega Nona and the Big Mess!*

March, 2011: Mrs. Gibb’s 2nd Grade Class: *Chemical Reactions*

March, 2011 Mrs. Beissel’s Fourth Grade Class: *Insulators and Conductors*

April, 2010: Mrs. King’s First Grade Class: *Type I Diabetes*

April, 2009: Mrs. King’s Second Grade Class: *Solids, Liquids and Gases*

April, 2009: Mrs. Kline’s Kindergarten Class: *Elephant Toothpaste*

April, 2008: Mrs. King’s First Grade Class: *The Ruben’s Tube*

January, 2007: Mrs. Simpson’s 2nd grade class, Bean Elementary School, Spring Arbor, MI: *Lightstick Chemistry*

October, 2005: Mrs. Valentine’s First Grade Class: *Gravity*

October, 2004: Mrs. Clevenger’s Kindergarten Class: *Why Leaves Change Color in the Fall*

Middle School Presentations:

February, 2024: Priest Middle School, Detroit Michigan, 7th grade classes: *Rainbow Indicators*

October, 2019: Western Middle School 6th grade assembly: *Chemical Energy*

December, 2018: Western Middle School 6th grade assembly: *Sound Science*

May, 2018: Western Middle School 6th grade assembly: *Energy for Life*

March, 2018: Western Middle School 6th grade assembly: *The Elements.*

February, 2018: Grass Lake Middle School (entire school assembly) *What It’s Like to Be a Scientist.*

January, 2018: Western Middle School 6th grade assembly: *Phase Changes!*

December, 2017: Mrs. Wurmlinger’s 7th grade classes: *Chemical Equations.*

March, 2017: Mrs. Vandenberg’s 7th grade classes: *Chemical Reactions.*

March, 2017: Mr. Mulnix’s 7th grade classes: *Chemical vs. Physical Reactions*.

May, 2016: Mr. Page’s 6th grade class: *Phase Changes*

March, 2016: Mr. Mulnix’s 7th grade classes: *Chemical Equations and Chemical Reactions.*

2011 – 2015, 2016 – 2017. American Chemical Society Science Coaching – Worked with science teachers and students at Western (MI) Middle school. Presented at least six different science demonstration shows each academic year. The American Chemical Society donated $500 to Western Middle School each academic year as to support this effort.

2013 – 2014: Presented 6 science demonstration lessons to two different periods of Mrs. Damm’s 7th grade Middle School Science Class at Middle School at Parkside, Jackson, MI

November, 2012. First LEGO® League Competition, Harbor Lights Middle School, Holland, MI *Enhancing American competitiveness in math and science*

October, 2011: Mrs. Kiebler’s 7th grade class: *Flame tests*.

High School Presentations:

October, 2021 *Blue and Gold, Green and White.* Presentation made on the campus of Spring Arbor University to Jerome / North Adams Public School High School students.

March, 2020: Mrs. Sharp’s Advanced Chemistry class, Western High School, Parma MI *The Chemistry of Why the Statue of Liberty is Green.*

November, 2019: Mrs. Sharp’s Advanced Chemistry class, Western High School, Parma, MI *Spectrophotometric Monitoring of the Kinetics of the Reaction Between Blue Food Dye and Hydrogen Peroxide Using a Smartphone.*

April, 2019: Mrs. Sharp’s Advanced Chemistry class, Western High School, Parma, MI *Absorption Spectroscopy.*

March, 2019: Mrs. Sharp’s Advanced Chemistry class, Western High School, Parma, MI *Chemical Equilibrium and Ocean Acidification.*

January, 2017: Jackson High School, Jackson, MI *Phase Changes, Superconductors and Quantum Locking.*

March, 2017 Jackson Christian School’s First Annual Science Fair. *Sound Waves*.

May, 2016 *The Ruben’s Tube.* Presentation made on the campus of Spring Arbor University to Crestwood High School’s AP Chemistry class.

May, 2016 *The Science of Sound*. Presentation made on the campus of Spring Arbor University to Marshall Academy’s 9th and 10th grade science class.

March, 2009. Battle Creek Area Math and Science Center, Battle Creek, MI. *You can learn a lot about chemistry by playing with lightsticks*.

College / University Presentations:

August, 2024: Wayne State University, Presentation to Michigan Science Center Campers: *How to Avoid Fire Disasters*

June, 2024: Wayne State University Neinas Chemistry Day (Sponsored by the Detroit Local Section of the American Chemical Society) *Cool Chemistry*.

April, 2024: Wayne State University Take Our Daughters and Sons to Work Day: *The Chemistry of the Fire Triangle.*

April 13, 2024, Wayne State University admitted student day: *The Chemistry of Fire*.

March 2024, Wayne State University *Chemistry in the Movies* (with Sean Hickey).

November, 2023: Wayne State Universities Campus Activities Movie Night: *The Science of Oppenheimer*.

October, 2023: Wayne State University Open House: *The Chemistry of Fire*.

August, 2023: Wayne State University FestiFall: *Superconductors.*

April, 2023: Wayne State University Take Our Daughters and Sons to Work Day: *Chemistry is so cool!*

December, 2022: SAU Annual Hanging of the Greens Celebration: *Poinsettia as an Acid-Base Indicator*

October, 2022: SAU Homecoming: *Fun with Coke and Mentos*

November, 2021: Address to SAU freshman: *The Basics of How Humans are Changing Earth’s Climate.*

October, 2021: SAU Homecoming: *Experiments with Liquid Nitrogen.*

July - August, 2020: Liberal Arts Perspectives on COVID-19 Series. *The Scientific Attitude: What It Is and Why It’s Important.*

April, 2019: Spring Arbor University Natural Science Seminar *Some Favorite Experiments from My YouTube Channel, Tommy Technetium.*

October, 2018: Spring Arbor University FOCUS Series Keynote #3: *Reflections on Chaos Theory*.

September, 2018: Spring Arbor University Homecoming Faculty Forum: *The Basics of Human-Caused Climate Change.*

February, 2018: Spring Arbor University FOCUS Series *Making Sense of Why Climate Experts Agree that Human-Caused Climate Change is Altering Our World, Part II.*

February, 2018: Spring Arbor University Natural Science Seminar *Making Sense of Why Climate Experts Agree that Human-Caused Climate Change is Altering Our World.*

May, 2018: Spring Arbor University Evening at the Arbor: *It’s the Size of Your Heart that Matters.*

February, 2017: Spring Arbor University FOCUS Series *Making Decisions in an Uncertain Environment or, Hawthorne Explores Complex Probabilistic Judgments While Kuntzleman Blows Stuff Up*

February, 2016: Spring Arbor University FOCUS Series *Literal Illuminations on the Word: A Chemist’s Reflections on the St. John’s Bible*.

November, 2015. Spring Arbor University Chapel. *Embracing the Academic Challenge.*

September, 2012. Spring Arbor University Natural Science Seminar *Lightsticks, Camera, Action!*

April, 2012. Spring Arbor University Chapel. *My Favorite Wrestler of All Time.*

February, 2011. Spring Arbor University Natural Science Seminar *The Chemistry of the Solar System.*

February, 2006. Spring Arbor University Natural Science Seminar *Photosynthesis: The Other Green Chemistry at Spring Arbor University.*

March, 2004. Spring Arbor University Natural Science Seminar *Photosystem II.*

Public Presentations:

June and April, 2024, Veterans Park, Livonia, MI (two separate lectures): *Why Yes, Chemistry IS Rocket Science!*

March, 2024, Meeting of the Michigan Atheists, Troy, MI: *My Experience Giving Voice to Science in Christian Academia and Conservative Communities*

September, 2023: Midtown Educator’s Night at the Michigan Science Center: *The Sound of Science.*

April, 2022 (Invited): Michigan State University Science Festival, Michigan State Horticultural Gardens, East Lansing, MI. *Science is So Cool!*

September, 2019: Hurst Planetarium, Ella Sharp Museum, Jackson, MI. *Space Science Demonstrations with Professor Tom Kuntzleman.*

August, 2019: Jackson County Department of Human Services: *Experiments with Carbon Dioxide.*

June 2019: Spring Arbor – Parma Lions Club, Sandstone Community Church, Parma, MI *Phase Changes, Cold Chemistry, and Quantum Locking.*

May, 2019: Hurst Planetarium, Ella Sharp Museum, Jackson, MI *The Science of Star Wars: Light and Force*

May, 2019: Hurst Planetarium, Ella Sharp Museum, Jackson, MI *The Science of Star Wars: Chemistry of Hoth, Bespin, and Mustafar*

February, 2019 (three shows): Mid-Winter Mixer at the Hurst Planetarium, Ella Sharp Museum, Jackson, MI *Colder than the Polar Vortex*.

August, 2018 (two dates) Pop-up Marketplace at Westwood Mall, Jackson, MI. *Science Experiments for a Rainy Day.*

July, 2018 Pop-up Marketplace at Westwood Mall, Jackson, MI. *Experiments with Soda Pop and Candy.*

June, 2018 (two dates) Pop-up Marketplace at Westwood Mall, Jackson, MI. *Quantum Levitation*.

July, 2010. Learning Fair XIV, Jackson Area Career Center, Jackson, MI. *Infrared Light: You Can’t See It, But It’s There!*

April, 2010. The Jackson Family Expo, Westwood Mall, Jackson, MI. *Dr. Atomic and the Chem. Lab Explore the Chemistry of the Solar System*.

July, 2008. Learning Fair XII, Spring Arbor University, Spring Arbor, MI. *Hands-on Science Experiments*.

July, 2007. Learning Fair XI, Spring Arbor University, Spring Arbor, MI. *Hands-on Science Experiments*.

July, 2006. Learning Fair X, Spring Arbor University, Spring Arbor, MI. *Hands-on Science Experiments*.

July, 2005. Learning Fair IX, Spring Arbor University, Spring Arbor, MI. *Hands-on Science Experiments*.

After School and Summer School Presentations:

June, 2016 Reaching Higher Summer Program, Woodville Community School, Jackson MI. *Making Density Bottles.*

July, 2014 Reaching Higher Summer Program, Western Middle School, Parma MI. *The Bucket Launch*

June, 2013 Reaching Higher Summer Program, DaVinci Primary School, Jackson MI. *Liquid Nitrogen and Dry Ice.*

June, 2013 Reaching Higher Summer Program, Woodville Community School, Jackson MI. *Temperature.*

July, 2012 Summer Program at Salvation Army, Jackson, MI. *Nitrogen and Carbon Dioxide.*

2011 – 2012 Directed an after school science program at Warmer Elementary School, Spring Arbor, MI. We met once a month (6 meetings) during the school year. I presented science demonstrations and guided 3rd – 5th grade students through hands-on science experiments.

Internet:

Kuntzleman, T. American Association of Chemistry Teachers website. *Simple Kinetics Demonstration.* See <http://www.teachchemistry.org/content/aact/en/classroom-resources/middle-school/reactions/reaction-rate/simple-kinetics.html>

Published over 130 articles on the Chemical Education Exchange. <http://www.jce.divched.org/blogs/tom-kuntzleman>

Kuntzleman, T. and Reese, S. *A Simple and Rapid Method to Determine the Moles of CO2 Gas Produced in a Chemical Reaction Using the MicroLab FS522**MicroLab E-Newsletter,* **2010,** vol. 1, No. 3.

Worked with Theodore Gray, author of the “Gray Matter” column in Popular Science magazine to publish an article

[See: http://www.popsci.com/science/article/2010-10/gray-matter-which-i-set-myself-fire](See:%20%20http://www.popsci.com/science/article/2010-10/gray-matter-which-i-set-myself-fire)

# Kuntzleman, T. Lesson Plans Page. *The Spread of Disease.*

See: http://www.lessonplanspage.com/PEScienceOTheSpreadOfDiseaseLikeAids612.htm

Kuntzleman, T. Lesson Plans Page. *Jack-o-liters (science lesson on metric volume)*.

See: <http://www.lessonplanspage.com/ScienceMathVolume.htm>

Kuntzleman, T. Lesson Plans Page. *Speed of Sound*. (Inspiration for a feature used in the New York times). See: http://www.lessonplanspage.com/ScienceSpeedSound8.htm

Other:

Worked with Carolina Biological to develop the Carolina® Spectroscopy Chamber. See: <http://www.carolina.com/teacher-resources/Video/video-carolina-spectroscopy-chamber/tr41101.tr>

Worked with MicroLAB, Inc. to develop the Cyclic Voltammetry Module 170. See: <http://microlabinfo.com/equipment/sensors/cyclic_voltammetry_module/>

Worked with Flinn, Scientific to publish “Exploring Light Sticks – Chemical Demonstration Kit”

See: <http://www.flinnsci.com/store/Scripts/prodView.asp?idproduct=22097&noList=1>

**Grants Received:**

2021: *A Proposal to the Bauervic Foundation.* $2000 for the purchase of materials to be used at Spring Arbor University’s Cougar Science Camp. (Separate proposals have been submitted to the Bauervic Foundation each year since 2008. Each proposal has been successful, resulting in the foundation providing over $1000 annually since 2008; $20,000 to date).

2019: *Hurst Foundation*. $5000 granted for the purchase of materials to involve high school students and teachers in building devices to present to students at Spring Arbor University’s Cougar Science Camp. Funds were also intended to foster collaboration with the Hurst Planetarium in Jackson, Michigan.

2018: *Hurst Foundation*. $5000 granted for the purchase of materials to involve high school students and teachers in building devices to present to students at Spring Arbor University’s Cougar Science Camp. Funds were also intended to foster collaboration with the Hurst Planetarium in Jackson, Michigan.

2017: *A Proposal to the Hurst Foundation*. $7000 for the purchase of materials to involve high school students and teachers in building devices to present to students at Spring Arbor University’s Cougar Science Camp. The devices intended to teach concepts in the science of the solar system.

2016: *A Proposal to the Hurst Foundation*. $8500 for the purchase of materials to involve high school students and teachers in building devices to present to students at Spring Arbor University’s Cougar Science Camp. The devices intended to teach concepts in physics, chemistry, and Earth science.

2013: *Lights, Camera, Chemical Reaction!* Jackson Community Foundation: $5500 towards the purchase of a Phantom high speed video camera to film chemical reactions in slow motion.

2013: *Exploration of Cost-Efficient Diagnostic Tools for Neonatal Brachial Plexus Palsy Research*. The MedSAU Fund: $1271 towards the purchase of simple materials used to diagnose Brachial Plexus Palsy and evaluate progress in treatment.

2011: *Grafting Students into STEM Community Outreach*. Michigan Campus Compact: $3,477 to purchase of MicroLab data acquisition technology to enable Spring Arbor University students to more fully participate in scientific outreach to the surrounding community.

2011: *LEGO® Periodic Table*. American Chemical Society Community Activities Grant: $500 to purchase of LEGO® blocks to build a periodic table entirely of such blocks.

2010: *Experimental Determination of the Temperature of Hot, Blackbody Radiators*. Ocean Optics Educational Grant: $714.30 towards the purchase of an IR emission spectrometer for the purpose of measuring the temperature of hot objects.

2008: *A Proposal to the Chatlos Foundation*. $10,000. $7,500 to recruit 10 school teachers to work one week to develop lessons and activities for Spring Arbor University’s summer science camp and to work one week at the camp. $2,500 to provide 25 full scholarships to students from the King Center in Jackson, MI to attend the camp.

2006: *Glowmatography*. Ocean Optics Educational Grant: $1000 for the purchase of an absorption/emission spectrometer for the purpose of detecting the fluorescent dyes present in lightsticks.

1997: *Science Can Be a Shocking Experience.* Piedmont Electric Bright Ideas Grant: $700 for the purchase of 10 Van de Graaf generators for middle school students to use in inductive science experiments. Stanford Middle School matched these funds to purchase a large Van de Graaf generator for classroom demonstrations. The generators were used as an integral part of learning about electricity and magnetism.

1993: *Everyday Science for Every Kid*. University of North Carolina's Math and Science Education Network Grant: $500 for the purchase of household materials needed in hands-on science experiments for the middle school science classroom.

**Undergraduate theses advised**

2021: Selma Ehlert *Application of Chaos Theory to the Analysis of an Iron-Oxide Redox Reaction*

2020: Jezrielle Annis *Chemical Kinetics of Various Nucleation Methods Involved in Diet Cola Foam Production Diet Cola Foam Production*

2018: Logan Robart *Towards the Design of a pH Meter Using a Microbial Fuel Cell*

2018: Brooke Shadley *Investigation of Possible Mechanisms during Nucleation-Induced Soda Degassing*

2018: Andrea Sturgis *The Effect of Temperature in Experiments Using Commercially Carbonated Beverages*

2017: Sarah Boyer *A Comparison of Student Engagement in the Scientific Practice of Analyzing and Interpreting Data in Transformed and Traditional Undergraduate Physics Labs*

2017: Elisabeth Pettifor *Determining the Activation Energy of the Sublimation of Carbon Dioxide using Kinetic Studies*

2016: John Gurka *Coulometric Titration of Thiosulfate in Commercial Products*

2016: Trevor Sims *Development of Methods to Measure the Degassing of Diet Coke and Analysis of Factors Involved in the Process*

2015: Stephen White *An Analysis of the Hidden Structure Behind the Chaos of the*

*Williamowski-Rössler Network*

2014: Kent Fiero *The Measurement of Viscosity of Caulks and Adhesives for Application Purposes: An Undergraduate Study*

2014: Jin-Hwan No *Preparation and Characterization of a New Stationary Phase for Column Chromatography*

2012: Thomas McKenzie *The Electrochemistry behind Blood Glucose Monitors: An Undergraduate Study*

2012: Sarah Wellman *A Study of the Metal Removal Ability of Ground Dried Banana Peels*

2011: Kyle Groen *Determination of the Temperature of Blackbody Radiators using the Planck Distribution*

2011: Collin Howder *Determining the Ground State Structure of the Deprotonated Histidine-Zinc Ion*

2010: Rachael Kafader *Spectroscopic Analysis of Gaseous Diatomic Iodine*

2010: Scott Hasbrouck *An Exploration of Chemical Chaos*

2009: Aaron Bush *A Discovery and Analysis of the Hidden Structure in*

*Bifurcation Diagrams of Chaotic Chemical Mechanisms*

2009: Anna Comfort *Determination of Ferric Ion Concentrations using Spectroscopic Analysis of a Tetramethyl-p-Phenylenediamine Oxidation Reaction*

2009: Josh Kenney *Simple Coulometric Titration of Acidic Solutions*

2008: Kevin Eccles *Chemical Denaturation of Frataxin and its Mutants*