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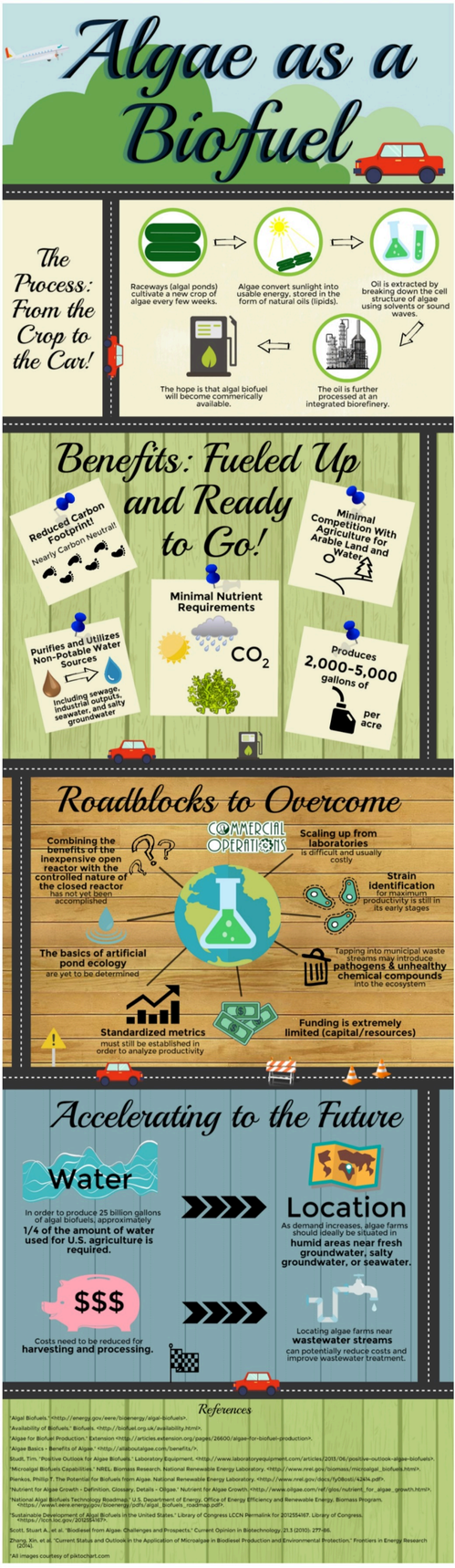
2016 Bioenergizeme Infographic Challenge: Algae as a Biofuel



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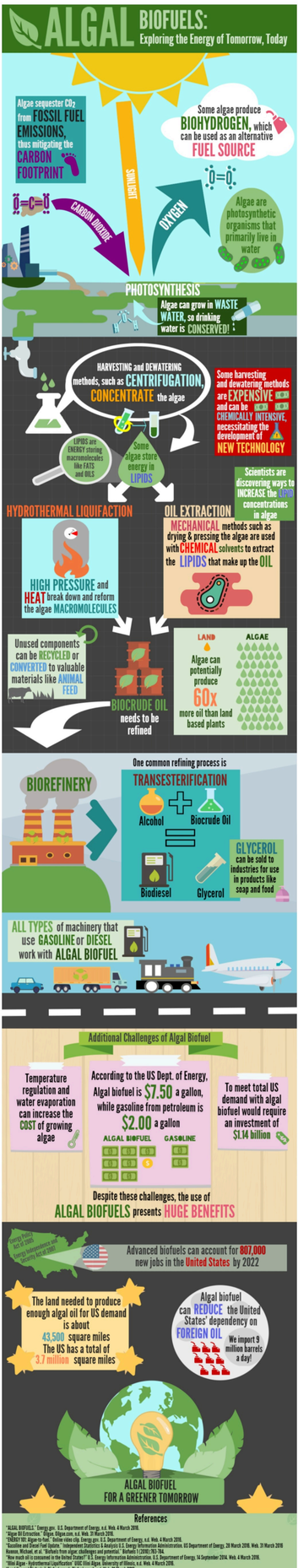
2016 BioenergizeME Infographic Challenge: Algae Biofuels, Exploring the Energy of Tomorrow Today



References

"ALGAL BIOFUELS." Energy.gov. U.S. Department of Energy, n.d. Web. 4 March 2016.
"Algae Oil Extraction." Algae. Algae.com, n.d. Web. 31 March 2016.
"ENERGY 101: Algae to Fuel." Online video clip. Energy.gov. U.S. Department of Energy, n.d. Web. 4 March 2016.
"Gasoline and Diesel Fuel Options." Independent Statistics & Analysis U.S. Energy Information Administration. US Department of Energy, 28 March 2016. Web. 31 March 2016
Hannon, Michael, et al. "Biofuels from algae: challenges and potential." Biofuels 1 (2010): 763-784.
"How much oil is consumed in the United States?" U.S. Energy Information Administration. U.S. Department of Energy, 14 September 2014. Web. 4 March 2016.
"Wild Algae - Nutritional Liquifaction" UIUC Kim Algae. University of Illinois, n.d. Web. 4 March 2016.
"Land Use and Biofuels." Biofuel.org.uk. Biofuel.org.uk, n.d. Web. 31 March 2016.
Lane, Jim. "Where are we with algae biofuels?" BiofuelsDigest. Biofuels Digest, 13 October 2014. Web. 31 March 2016.
Melis, Anastasios, et al. "Hydrogen Production. Green Algae as a Source of Energy." Plant Physiology 127 (2001): 740-48.
National Alliance for Advanced Biofuels and Bio-products. (2010). "National Alliance for Advanced Biofuels and Bio-products Full Final Report Section I."
Stenhouse, Kaitlyn and Jason Doren. "Harvesting Algae." Energy Education. University of Calgary, n.d. Web. 4 March 2016.
"The World Factbook." Central Intelligence Agency. Central Intelligence Agency, n.d. Web. 4 March 2016.
U.S. DOE. Algal Biofuels. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. Biomass Program.
U.S. DOE 2016. National Algal Biofuels Technology Roadmap. U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Biomass Program
"U.S. Economic Impact of Advanced Biofuels Production." Biotechnology Innovation Organization. Biotechnology Innovation Organization, 25 February 2008. Web. 31 March 2016.
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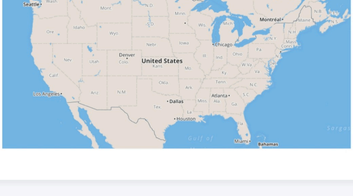
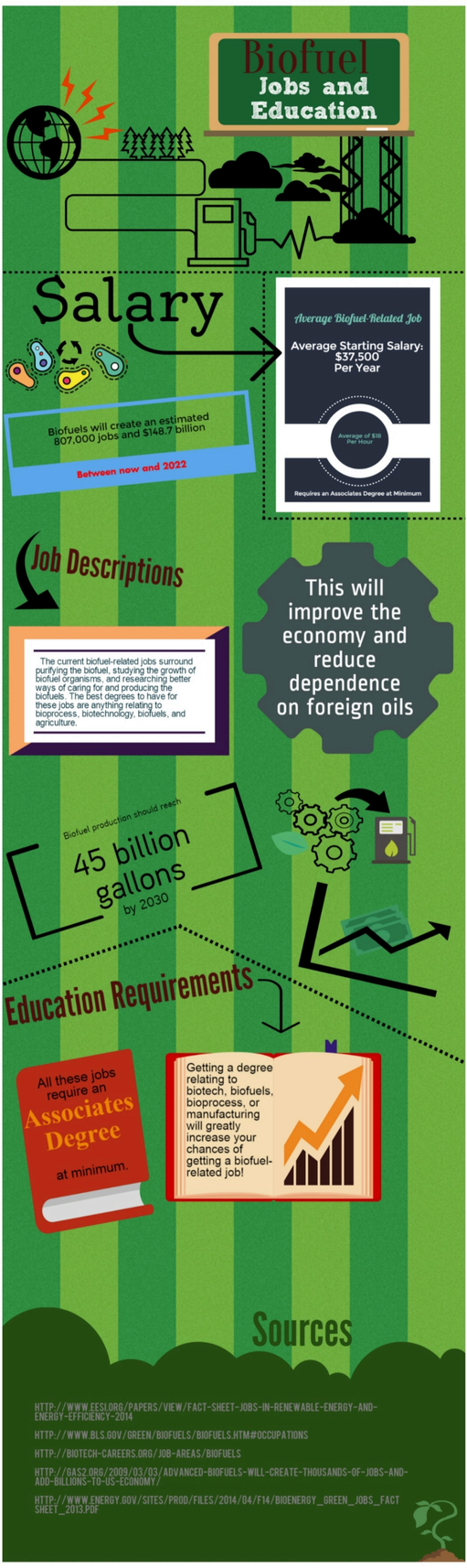


2016 Bioenergizeme Infographic Challenge: Biofuel Jobs and Education



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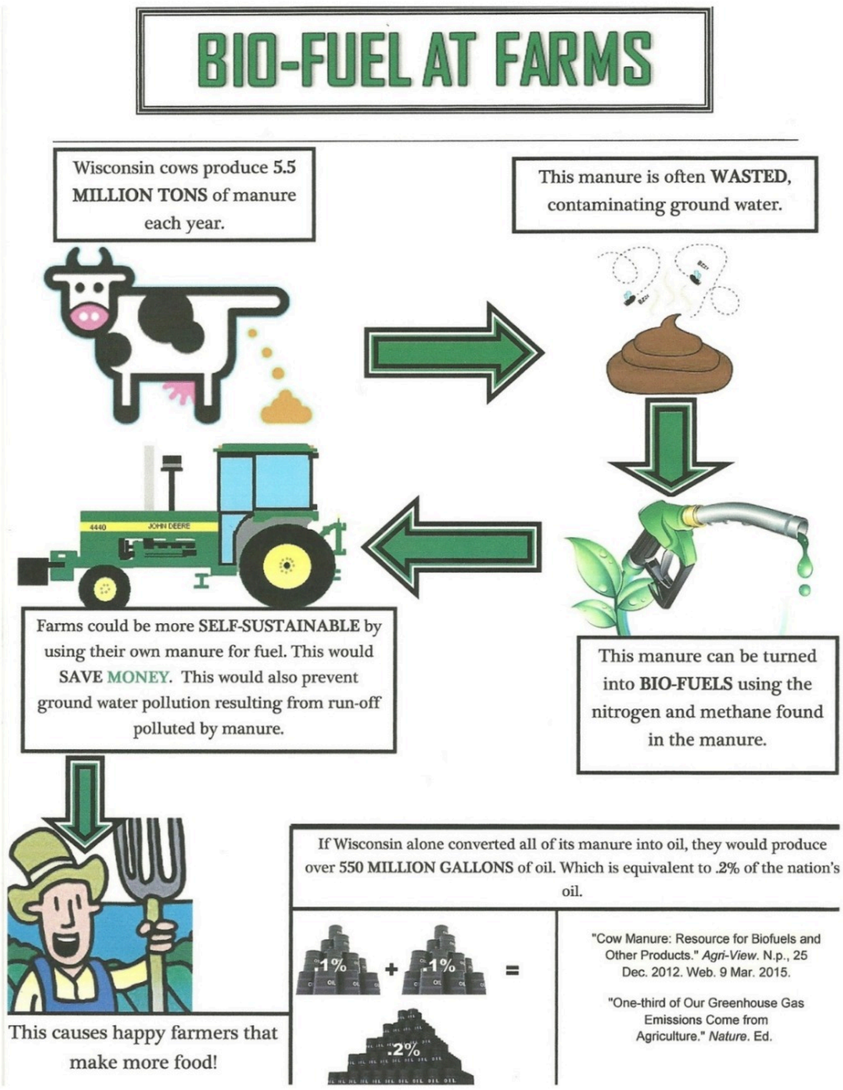
BIOENERGIZEME INFOGRAPHIC CHALLENGE: Bio-Fuel at Farms



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BIOENERGIZEME INFOGRAPHIC CHALLENGE: Bessie's Biofuel

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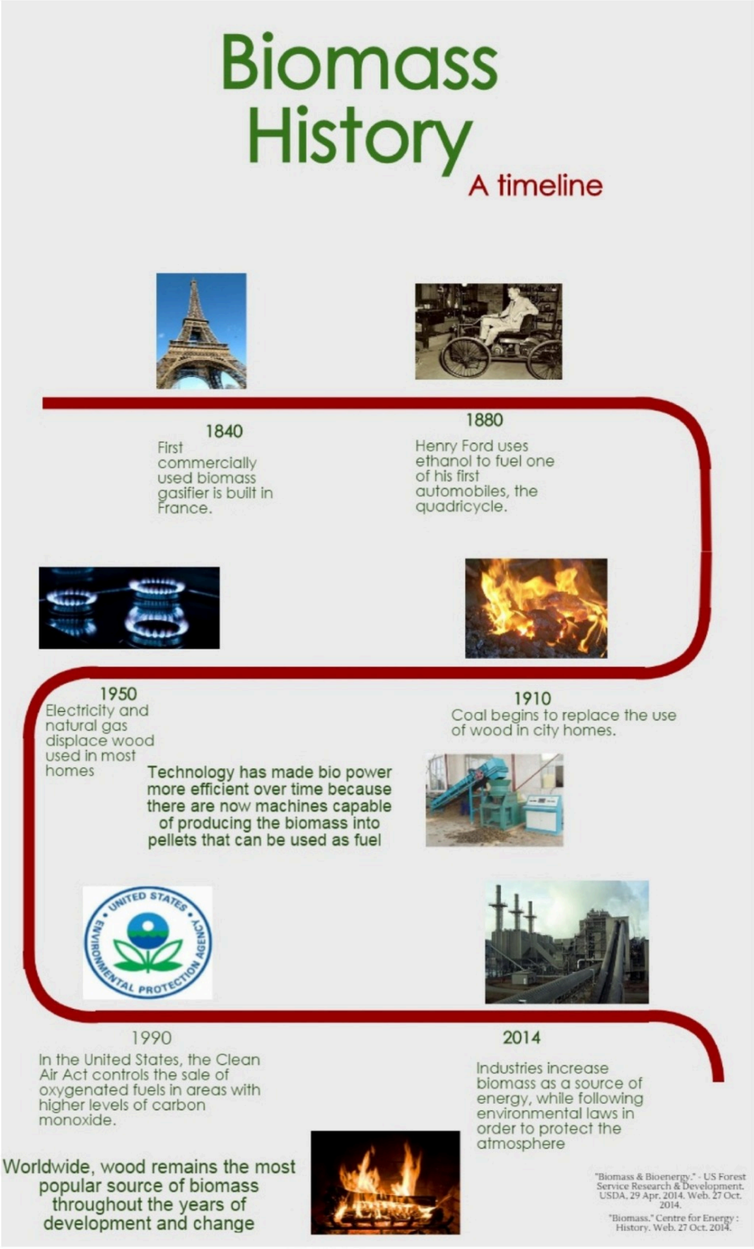
BioenergizeME Virtual Science Fair: Biomass History A timeline



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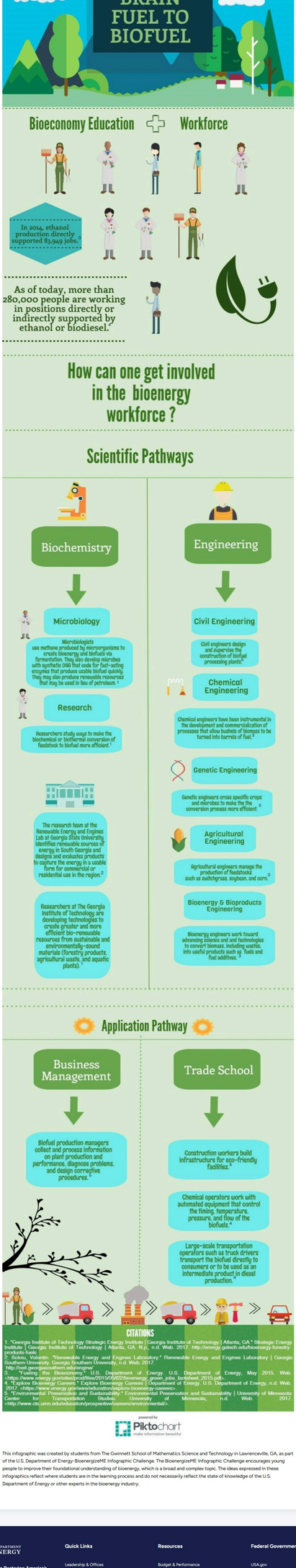
2017 Bioenergizeme Infographic Challenge: Brain Fuel to Biofuel



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BIOENERGIZEME INFOGRAPHIC CHALLENGE: Careers in Bioenergy

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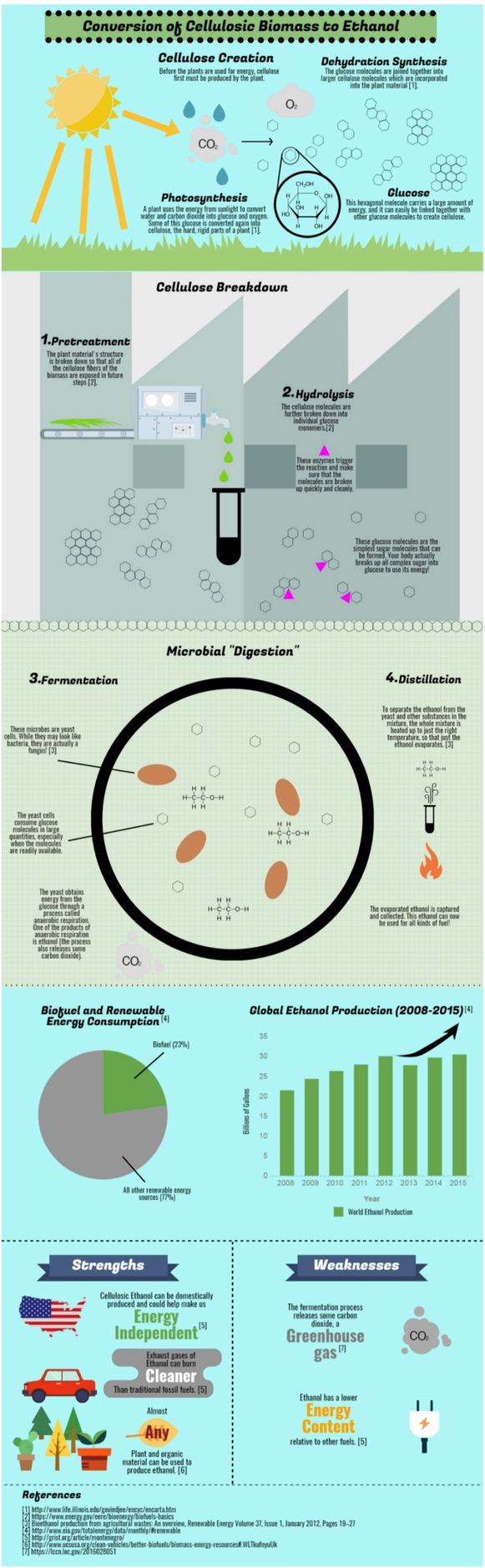
2017 Bioenergizeme Infographic Challenge: Conversion of Cellulosic Biomass to Ethanol



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2017 Bioenergizeme Infographic Challenge: Education and Workforce

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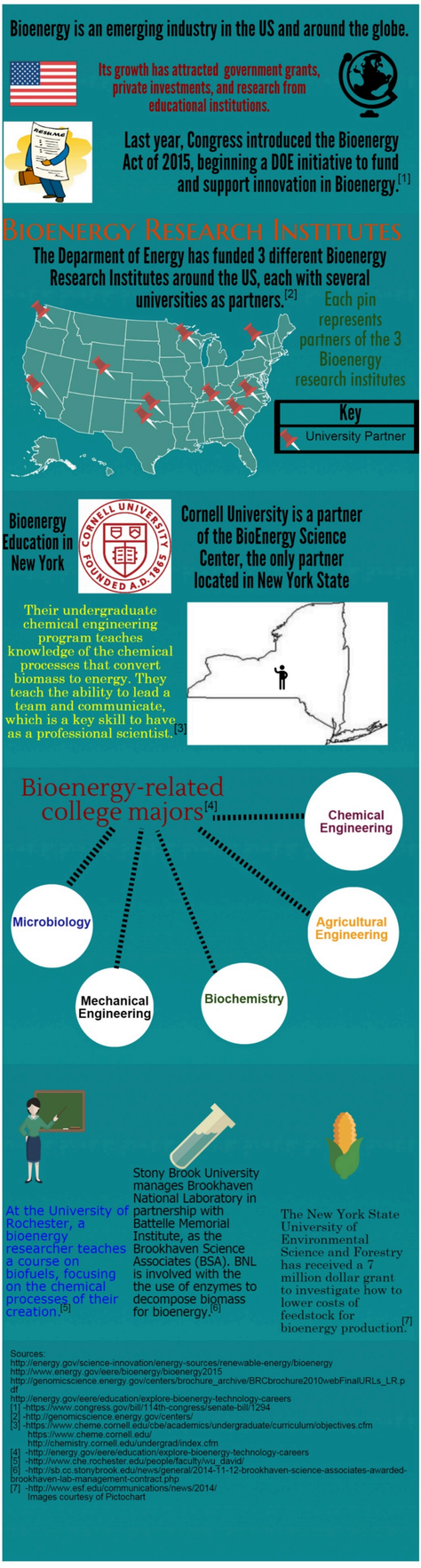
2016 BioenergizeME Infographic Challenge: Education in Bioenergy



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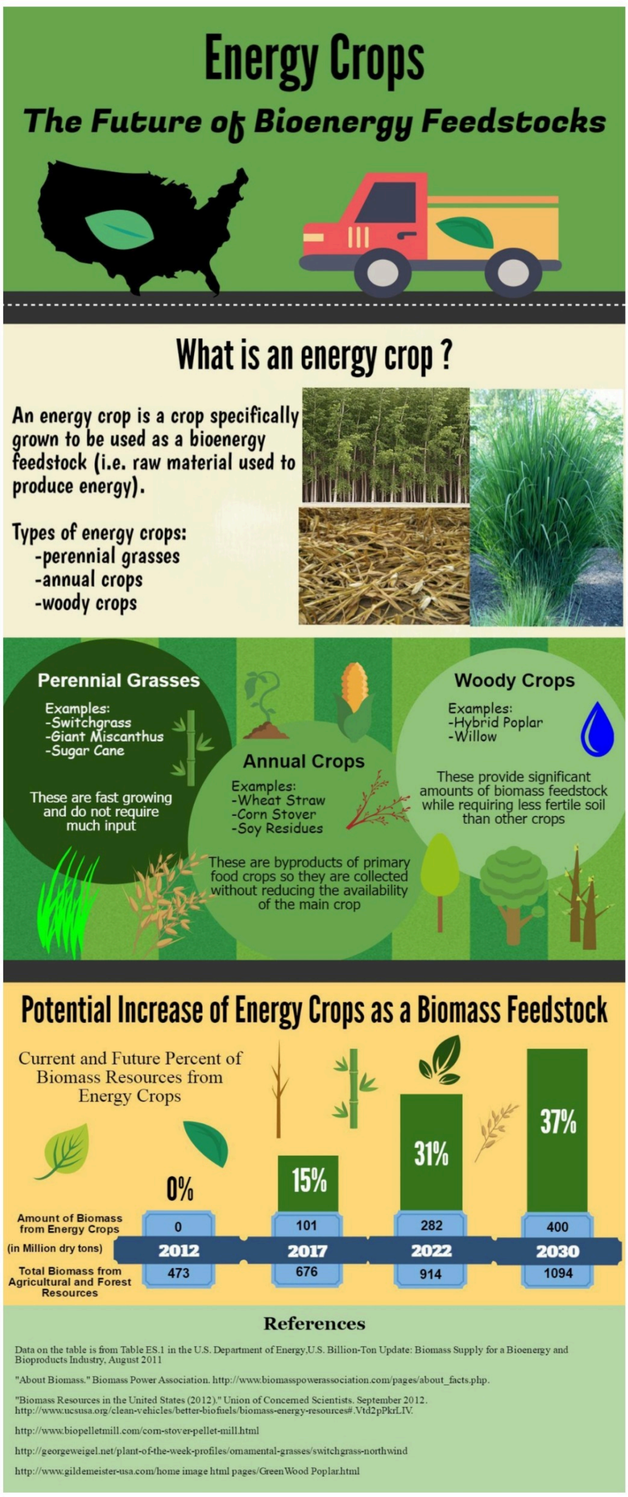
2016 Bioenergizeme Infographic Challenge: Energy Crops: The Future of Bioenergy Feedstocks



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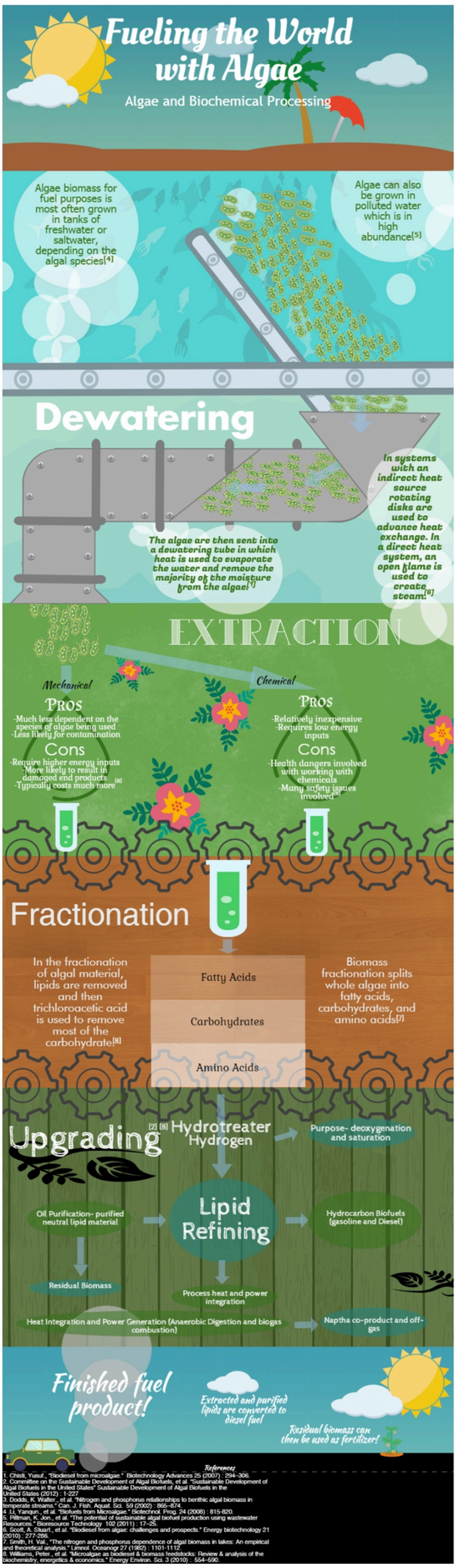
2017 Bioenergizeme Infographic Challenge: Fueling the World with Algae



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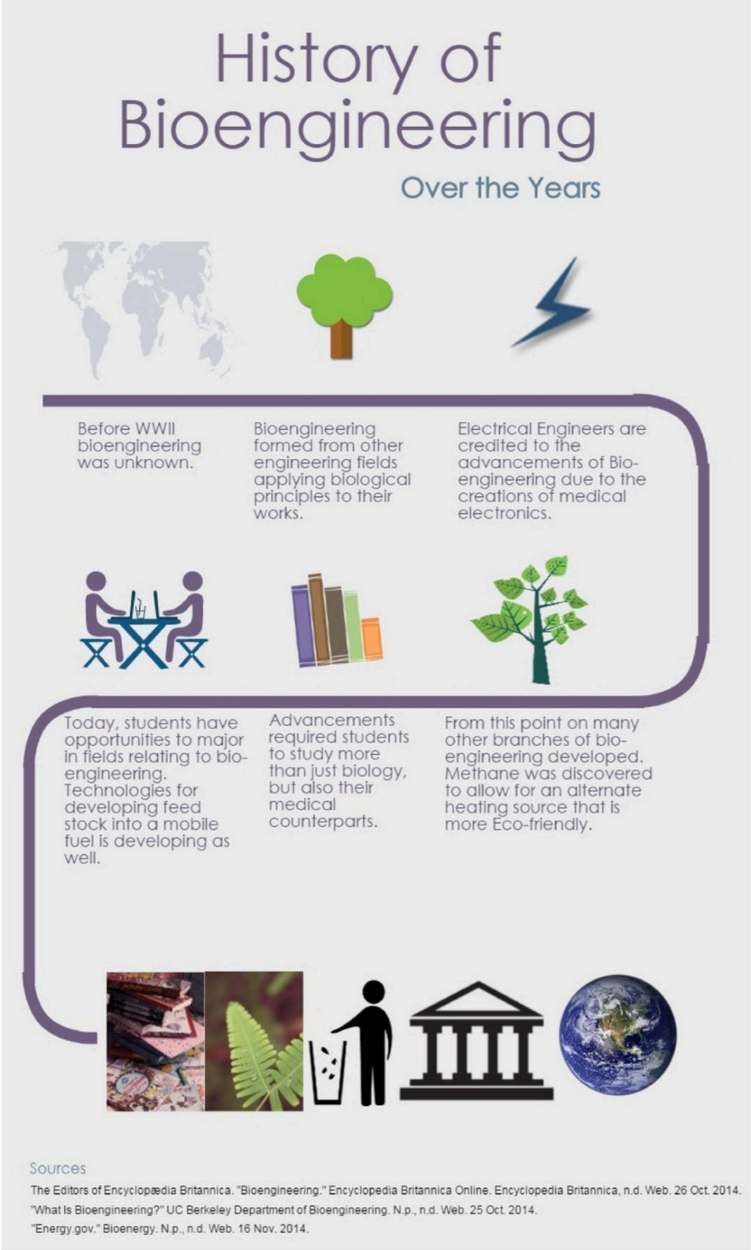
BioenergizeME Virtual Science Fair: History of Bioengineering Over the Years



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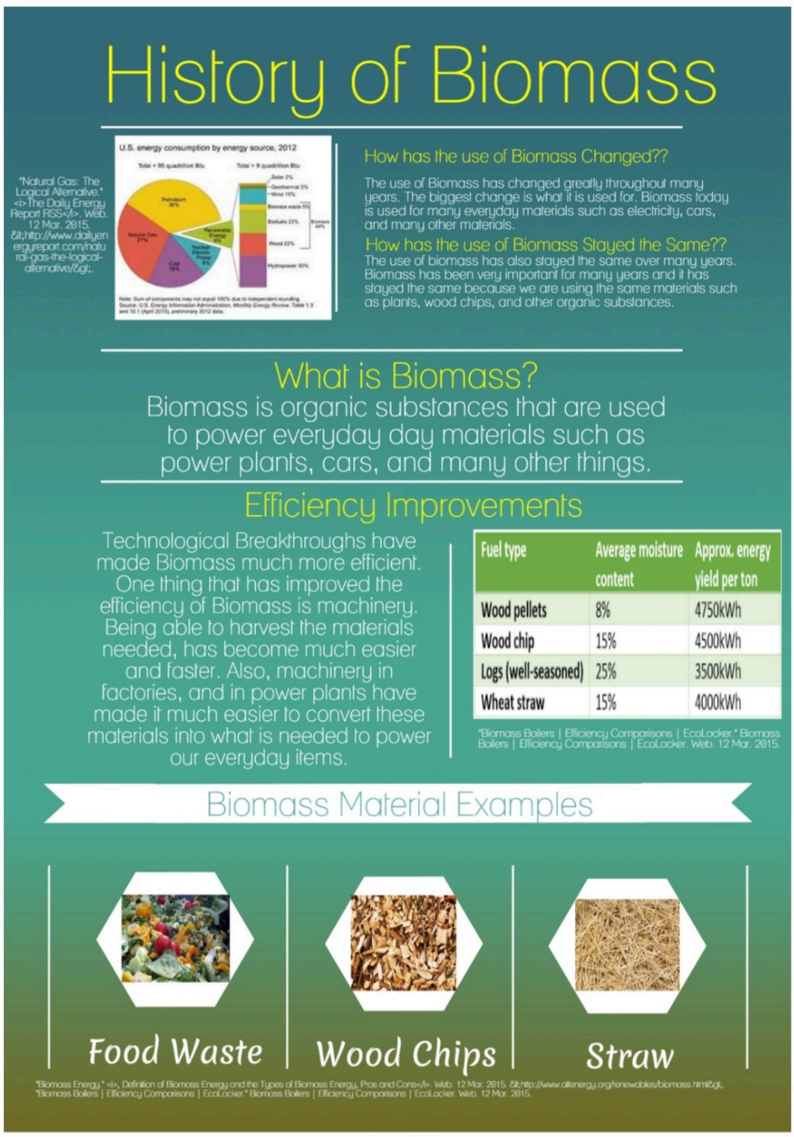
BIOENERGIZEME INFOGRAPHIC CHALLENGE: History of Biomass



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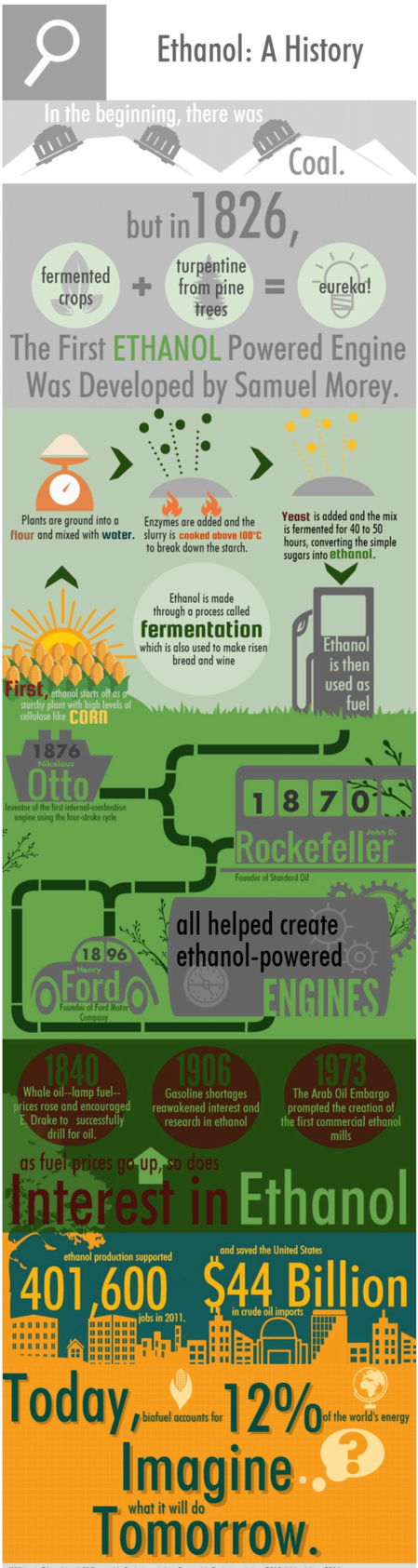
2016 BioenergizeME Infographic Challenge: The History of Ethanol



[1] "How is Ethanol Made?" Renewable Fuels Association. Renewable Fuels Association, 2015. Web. 4 Mar. 2016.
[2] "Industry Statistics." Renewable Fuels Association. Renewable Fuels Association, 2015. Web. 3 Mar. 2016.
[3] Kolb, Ron. "A Short History of Biofuels." Bioenergy Connections (2014).
[4] Mosier, Nathan S. et al. "How Fuel Ethanol is Made from Corn." Bio Energy: Fueling America Through Renewable Crops. 1- 4.
[5] Richards, Emily. Careers in Biofuels. U.S. Bureau of Labor Statistics, 2013. Series 10.
[6] Songstad DD, et al. "Historical Perspective of Biofuels: Learning from the Past to Rediscover the Future." In Vitro Cellular & Developmental Biology - Plant (2009) 45: 189 – 192.
[7] Wu CZ, et al. "The Development of Bioenergy Technology in China." Energy (2010) 35: 4445 - 4450.
[8] "2015 Key World Energy Statistics." OECD/IEA. International Energy Agency, 2015. November 2015.
[8] All images courtesy of Pixtochart

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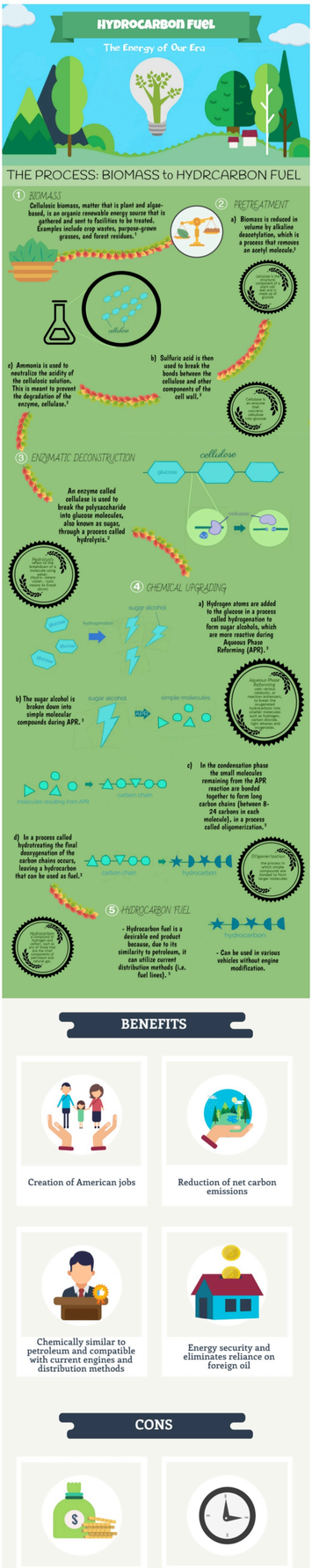
2017 Bioenergizeme Infographic Challenge: Hydrocarbon Fuel: The Energy of Our Era



BENEFITS

Creation of American jobs

Reduction of net carbon emissions

Chemically similar to petroleum and compatible with current engines and distribution methods

Energy security and eliminates reliance on foreign oil

CONS

Expensive in Comparison to Fossil Fuels

Time Consuming

Low Product Recovery

Inefficient Amount Produced

Sources
1. https://energy.gov/eere/bioenergy/bioenergy-basics
2. https://www.energy.gov/sites/prod/files/2016/07/f33/conversion_factsheet.pdf
3. http://www.nrel.gov/docs/fy15osti/62498.pdf
4. http://www.acdb.energy.gov/fuels/renewing_hydrocarbon.html
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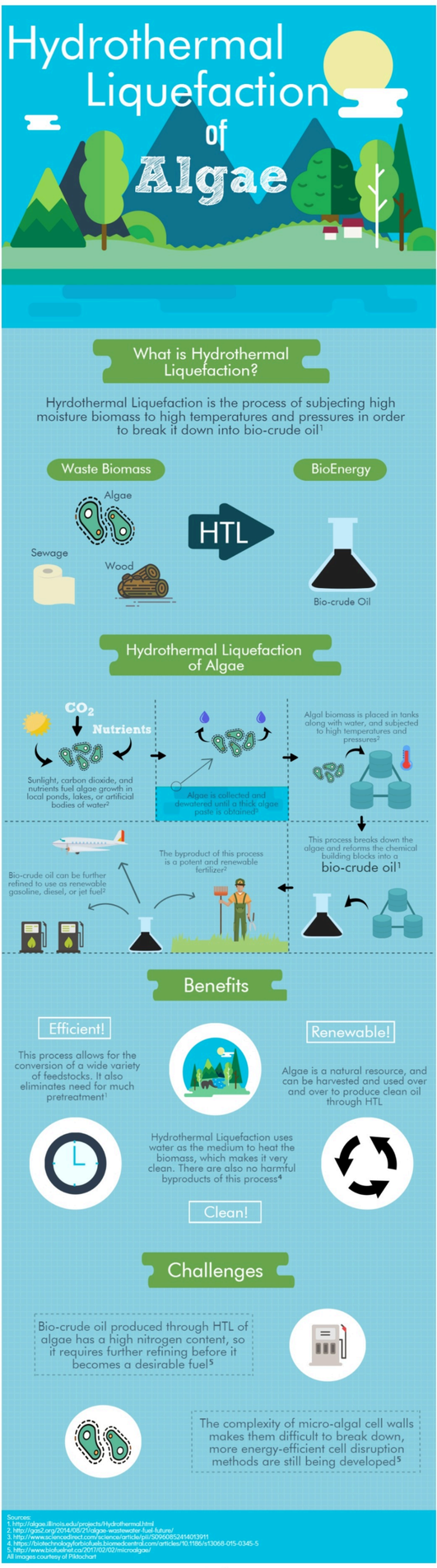
BioenergizeME Infographic: Hydrothermal Liquefaction of Algae



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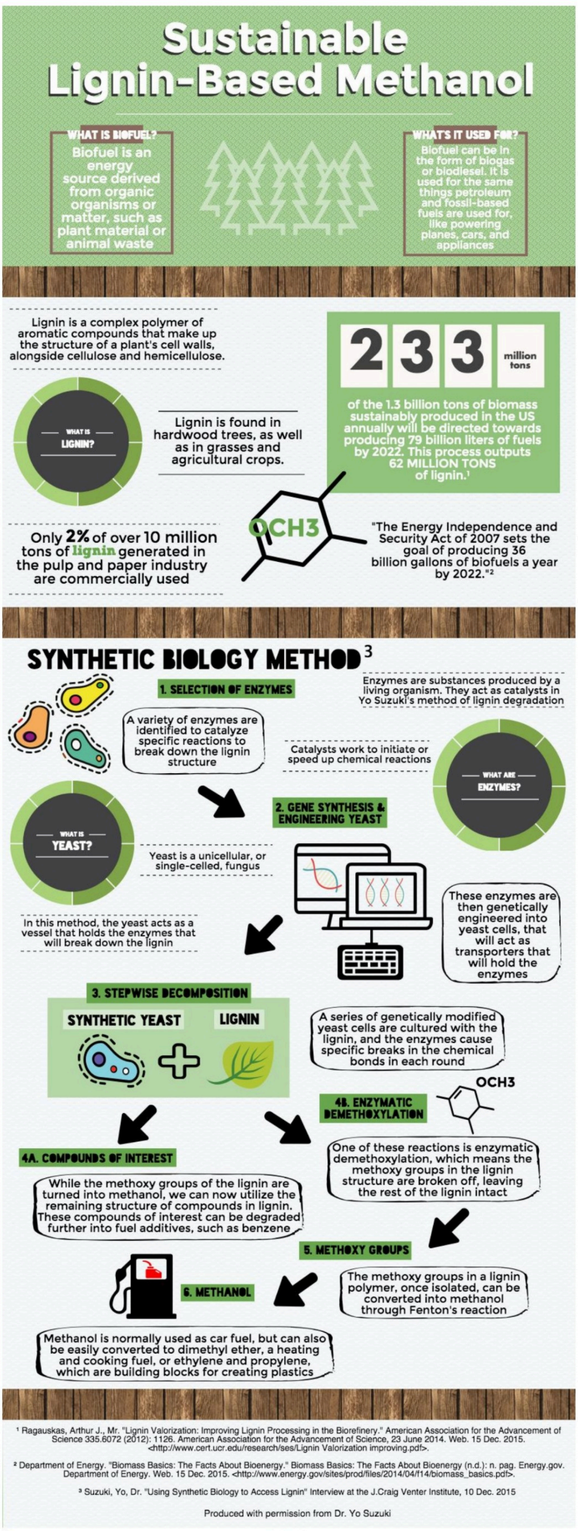
2016 Bioenergizeme Infographic Challenge: Sustainable Lignin-Based Methanol



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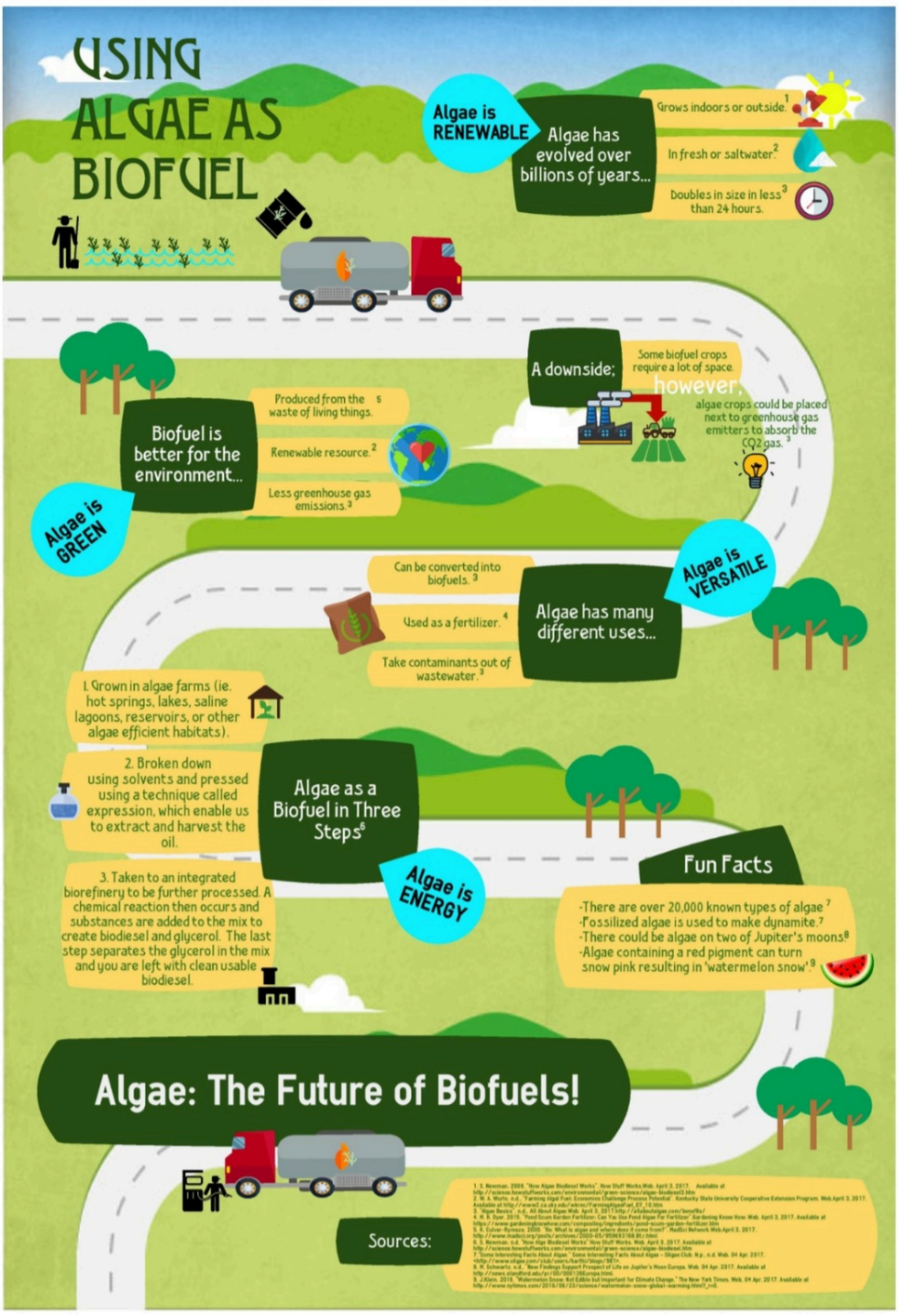
2017 Bioenergizeme Infographic Challenge: Using Algae as Biofuel



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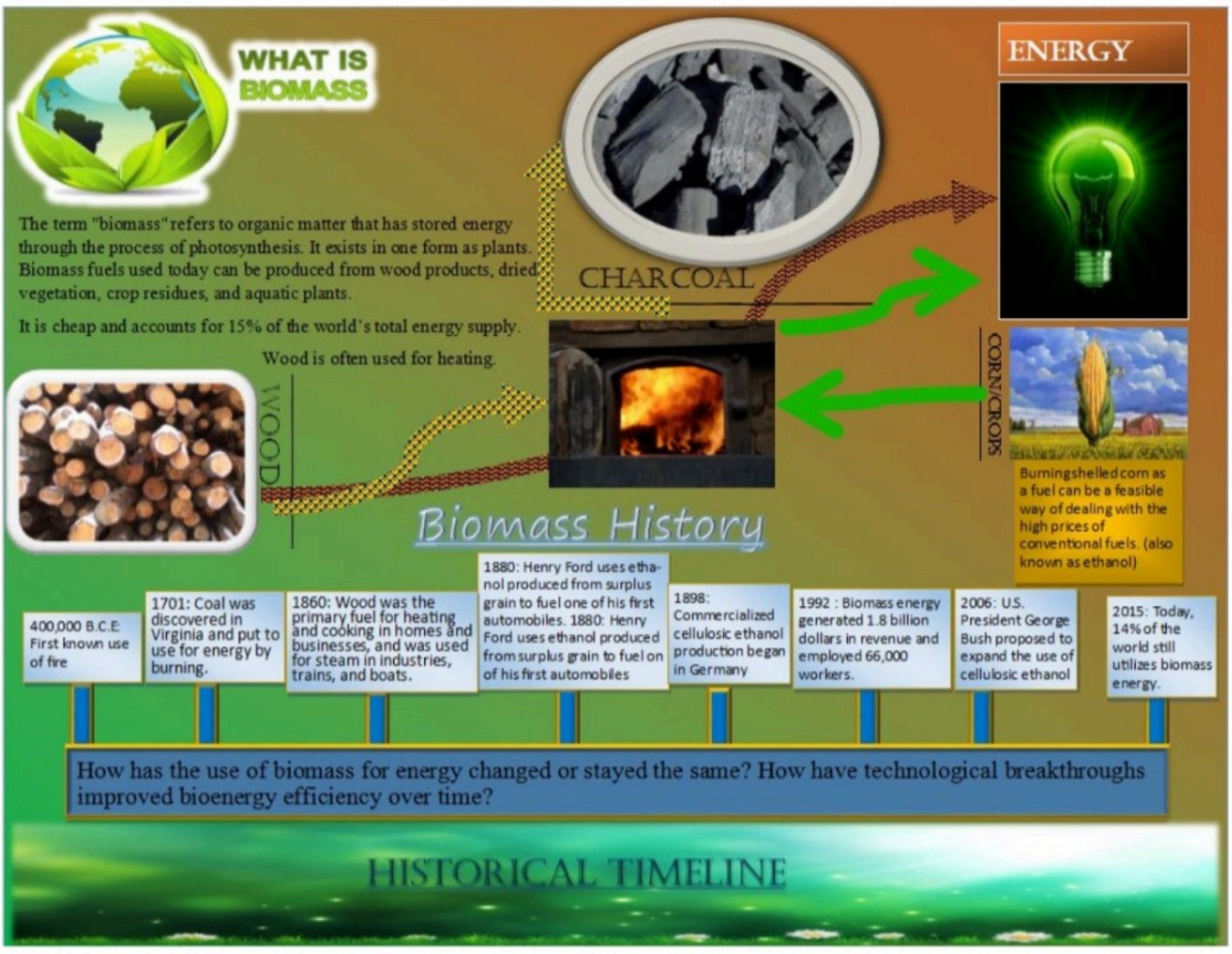
BIOENERGIZEME INFOGRAPHIC CHALLENGE: What is Biomass?



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References:

- http://energy.gov/eere/bioenergy/bioenergizeme-virtual-science-fair-biomass-history-timeline
- http://www.timetoast.com/timelines/energy-history--3

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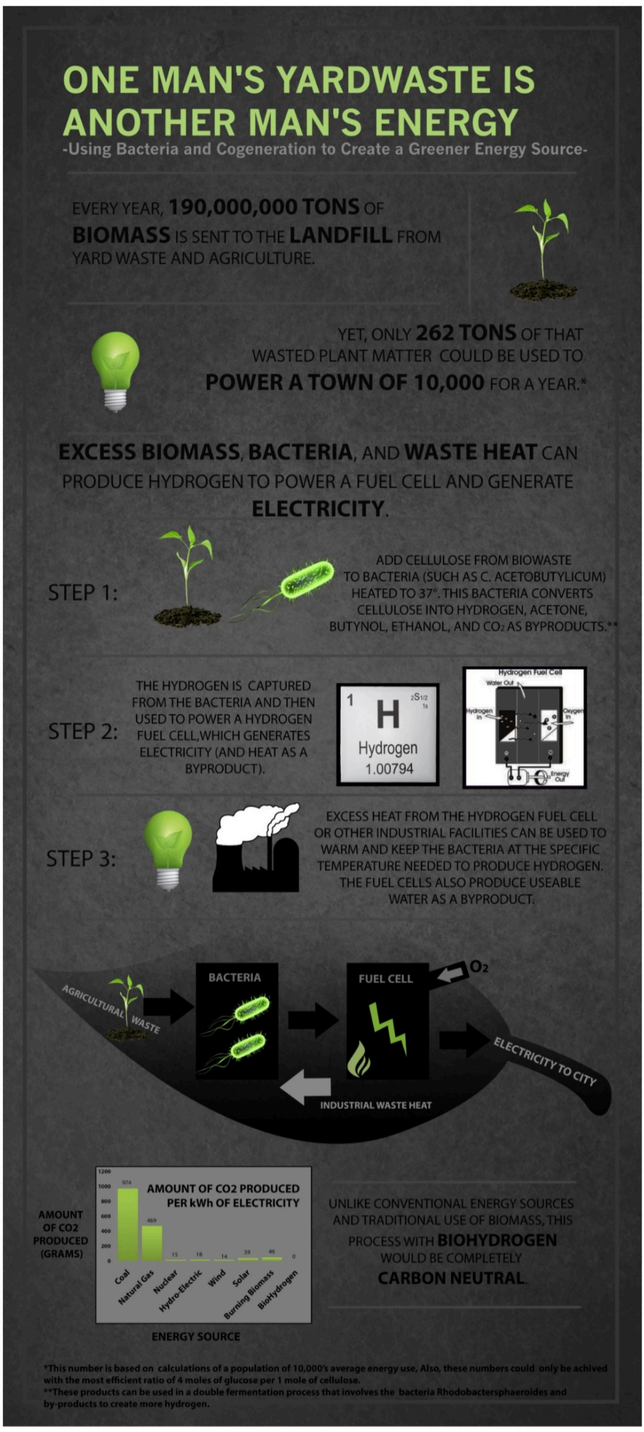
BIOENERGIZEME INFOGRAPHIC CHALLENGE: One Man's Yardwaste is Another Man's Energy (BioHydrogen)



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