

Field Trips for ZJU-NAU and RUC-CULR 2019 Workshops

1. Valero Ethanol Plant Visit

<https://www.valero.com/en-us/Pages/Linden.aspx>

Valero's Linden ethanol plant is located near Linden, Indiana, about 60 miles northwest of Indianapolis. The biorefinery sits on approximately 80 acres and started ethanol production in August 2007. The facility uses a dry-grind production method and state-of-the-art technology to maintain industry-leading standards in production, safety, product quality and environmental stewardship. The Linden plant annually processes approximately 47 million bushels of corn into approximately 135 million gallons of denatured ethanol and 355,000 tons of distillers grains co-products. The biorefinery employs more than 60 full-time personnel. The entire kernel of corn is converted to ethanol or distillers grains. Ethanol is an environmentally friendly, high-octane renewable fuel produced by fermenting converted corn starch with yeast. It is used as a blending agent with gasoline. Distillers grains are the co-product left after the ethanol is removed from fermented corn mash, and are sold as a valuable livestock feed. Distillers grains are high in protein, fat, vitamins and minerals, making an excellent feed supplement for beef and dairy cattle, swine and poultry. The Linden plant markets both dried distillers grains with solubles (DDGS) and modified (or wet) distillers grains with solubles (MDGS).

美国最大的能源企业之一瓦莱罗的林登乙醇厂位于印第安纳州林登附近，位于印第安纳波利斯西北约60英里处。这家生物精炼厂占地约80英亩，2007年8月开始生产乙醇。工厂采用干磨生产方法和最先进的技术，在生产、安全、产品质量和环境管理方面保持行业领先水平。林登工厂每年将大约4700万蒲式耳的玉米加工成大约1.35亿加仑的变性乙醇和35.5万吨蒸馏器谷物副产品。这家生物精炼厂雇佣了60多名全职员工。整个玉米粒被转化为乙醇或蒸馏器谷物。乙醇是一种环保型、高辛烷值的可再生燃料，由玉米淀粉与酵母发酵而成。它被用作汽油的混合剂。蒸馏谷物是将乙醇从发酵的玉米醪中分离出来后的副产品，作为一种有价值的牲畜饲料出售。蒸馏谷物富含蛋白质、脂肪、维生素和矿物质，是牛肉、奶牛、猪和家禽的极佳饲料补充。林登植物既销售干酒糟(DDGS)，也销售改性(或湿酒糟)酒糟(MDGS)。

2. Cargill Inc. Grain Handling Facility

<https://www.cargill.com>

Cargill, Inc. is the world's largest handler of grains and oilseeds in international trade. They are also the largest privately held company in the agricultural industry. The Linden facility hands corn, soybean, and wheat and the grain originates from about 30-40 miles around the facility. Cargill has an agreement with Valero Renewable Energy at Linden to coordinate the corn used by the ethanol facility. So, most of the corn moving through the facility will go to Valero, although some corn may move by train to the Southeastern U.S. for poultry and hog production.

Soybeans are purchased from farmers for delivery to either the Linden facility or for delivery to soybean crushers in a nearby Cargill plant in Lafayette, Indiana or an ADM plant in Frankfort, Indiana. Some soybeans are also shipped to crushing plants in the Southeastern U.S. by train.

Few soybeans from this area would be destined for China. Much of the soybean production for China would be along the Mississippi River system that includes smaller rivers, including the Illinois River, the Ohio River, the Missouri River, the Tennessee River and the Arkansas River. Also soybeans produced in western Iowa, Nebraska, Minnesota, and South Dakota tend to move by unit trains to west coast ports of Portland and Seattle and then on to Asia.

加吉尔公司是世界上最大的谷物和油籽国际贸易经营商，也是中国俗称ABCD四大粮商的C。他们也是农业行业最大的私人控股公司。林登工厂提供玉米、大豆和小麦，这些谷物来自工厂周围

30-40英里的地方。嘉吉公司与位于林登的Valero Renewable Energy公司达成了一项协议，将协调乙醇工厂使用的玉米。因此，通过该设施运输的大部分玉米将运往瓦莱罗，不过一些玉米可能会通过火车运往美国东南部，用于家禽和生猪生产。大豆从农民手中购买，交付给林登工厂，或交付给附近位于印第安纳州拉法叶的嘉吉工厂或位于印第安纳州法兰克福的ADM工厂的大豆压榨机。一些大豆也通过火车运往美国东南部的压榨厂。这个地区很少有大豆运往中国。中国的大部分大豆生产将沿着密西西比河系统，包括较小的河流，包括伊利诺伊河、俄亥俄河、密苏里河、田纳西河和阿肯色河。此外，爱荷华州西部、内布拉斯加州、明尼苏达州和南达科他州生产的大豆往往通过单列火车运往波特兰和西雅图的西海岸港口，然后运往亚洲。

3.Corn/soy Morehouse Farm visit

<https://www.morehousefarm.com>

Morehouse Farm Inc is predominantly involved in General Crop Farm. Morehouse Farm Inc operates in West Lafayette Indiana. This business establishment is involved in General Crop Farm as well as other possible related aspects and functions of General Crop Farm. In West Lafayette Morehouse Farm Inc maintains its local business operations and could execute other local business operations outside of West Lafayette in additional functions related to General Crop Farm.

Morehouse 农场公司主要经营普通农作物农场。Morehouse 农场位于印第安纳州的西拉法叶郊区。该业务机构涉及通用农作物农场以及通用农作物农场可能的其他相关方面和功能。在西拉法叶，Morehouse 农场公司维持其当地的业务运作，并可以在西拉法叶之外执行其他与一般农作物农场相关的附加功能。

4.Samara House

<https://www.samara-house.org>

Samara, also known as the John E. Christian House, is a house designed by Frank Lloyd Wright located in West Lafayette, Indiana. The home is an example of the Usonian homes that Wright designed. Samara was built from 1954 to 1956 and was still occupied by the original owner, John E. Christian, until he died on July 12, 2015.

Samara House Samara，也被称为 John E. Christian House，是由已故美国当代最著名建筑师 Frank Lloyd Wright 设计的位于印第安纳州西拉法叶的民宅。该住宅是赖特设计的 Usonian 住宅的一个例子。Samara 建于 1954 年至 1956 年，原主人 John E. Christian 在此一直居住到 2015 年 7 月 12 日去世。

5.West Lafayette Farmer's Market

<http://wlfarmersmarket.com>

The West Lafayette Farmer's Market is a seasonable market organized by local farmers. Farmers come and sell their vegetables, fruits, and flowers in the afternoon during that period of time. The selling price is usually a little bit higher than the regular grocery store, but their products are premium on freshness and tastes. Other than product trading, farmers usually share their production ideas and other entertainment communication.

西拉法叶农贸市场西拉法叶农贸市场是由当地农民组织的时令农贸市场。农民们在这段时间的下午来卖他们的蔬菜、水果和鲜花。他们的售价通常比一般的杂货店略高，但他们的产品在新鲜度和口味上都很好。除了产品交易，农民通常会分享他们的生产理念和其他娱乐交流。

6.Indiana State Capitol

<https://www.in.gov/idoa/2371.htm>

The Indiana State House is the state capitol building of the U.S. State of Indiana. Housing the Indiana General Assembly, the office of the Governor of Indiana, the Supreme Court of Indiana and other state officials, it is located in the State Capital, Indianapolis, at 200 West Washington Street. Built in 1888, it is the fifth building to house the state government. The first statehouse, located in Corydon, Indiana, is still standing and is maintained as a state historic site. The second building was the old Marion County courthouse which was demolished and replaced in the early 20th century. The third building was a structure modeled on the Parthenon, but was condemned in 1877 because of structural defects and razed so the current statehouse could be built on its location.

印第安纳州议会大厦印第安纳州议会大厦是美国印第安纳州的国会大厦。印第安纳州议会，印第安纳州州长办公室，印第安纳州最高法院和其他州官员的住所，位于州首府印第安纳波利斯，西华盛顿街 200 号。它建于 1888 年，是第五幢州政府大楼。位于印第安纳州科里登的第一个州议会大厦至今仍屹立不倒，并作为一个州的历史遗迹保存下来。第二幢建筑是旧马里恩县法院，在 20 世纪初被拆除并替换。第三座建筑是模仿帕台农神庙的结构，但在 1877 年由于结构缺陷而遭到谴责，并被夷为平地，因此现在的州议会大厦可以建在它的位置上。

印第安纳州议会大厦里面驻有州议会议员，州长，和印第安纳州最高法院等，是全国为数不多的三个政权分支在一起的历史州议会大厦。1825 年，也就是建国后的第九年，国会大厦从 Corydon 搬迁到印第安纳波利斯。当初建造国会大厦的计划始于 1867 年，于 1888 年竣工。整个大厦由印第安纳当地石灰岩和白橡木建造，它圆形大厅窗户是由美丽的德国进口彩色玻璃制成的，都是保留下来的最初建筑。

7.Soldiers' and Sailors' Monument and Colonel Eli Lilly Civil War Museum

<http://www.indianawarmemorials.org/explore/colonel-eli-lilly-civil-war-museum/>

The Indiana State Soldiers and Sailors Monument is a 284 ft 6 in (86.72 m) neoclassical monument built on Monument Circle, a circular, brick-paved street that intersects Meridian and Market streets in the center of downtown Indianapolis, Indiana. In the years since its public dedication on May 15, 1902, the monument has become an iconic symbol of Indianapolis, the state capital of Indiana. In addition to its commemorative statuary and fountains, made primarily of oolitic limestone and bronze, the basement of the monument contains the Colonel Eli Lilly Civil War Museum, a 9,000-square-foot museum that explores the impact of the Civil War on the people of Indiana.

欧洲古典风格的战士和水兵纪念碑和其地下的礼来内战纪念馆为公众提供了体验美国历史的场所。印第安纳州士兵和水手纪念碑是一座 284 英尺 6 英寸(86.72 米)的新古典主义纪念碑，建在纪念碑圆环上。纪念碑圆环是一条砖铺成的圆形街道，在印第安纳波利斯市中心穿过子午线和市场街。自 1902 年 5 月 15 日落成以来，这座纪念碑已经成为印第安纳州首府印第安纳波利斯的标志性标志。除了主要由鲕粒灰岩和青铜制成的纪念雕像和喷泉，纪念碑的地下室还包括礼来上校内战博物馆(Colonel Eli Lilly Civil War Museum)，这是一座占地 9000 平方英尺的博物馆，探索内战对印第安纳州人民的影响。

8.Fair Oaks Farms

<http://fofarms.com>

Fair Oaks Farms is an escape to the country with acres of great outdoor fun, food and learning where you can explore family farms and reconnect with nature, animals and our planet.

Fair Oaks Farms are not only committed to educating the public about modern farming efforts, but also to protecting the environment, caring for animals and ensuring the highest quality products possible. Fair Oaks Farms brings Reduce, Reuse, and Recycle to a whole new light. The entire facility runs on cow & pig manure. They transform the farms' waste into energy by way of anaerobic digesters, reducing their dependency upon natural gas and electricity during the milk and manufacturing process. In 2013, the use of CNG will reduce the amount of diesel that their milk tanker/trailers use by 2 million gallons; which is the amount used in 2011. The barns and plants are also powered by this cutting edge "poo power."

位于普渡大学和芝加哥之间的 Fair Oaks Farms 乳牛-生猪大型养殖企业集生产,教育和旅游一体,每天接待数百游客,尤其是学校的实地考察团组。有千头乳牛,世界先进设备,高度现代化生产,专业人员带领介绍。每天都有小牛犊出生,客人可以亲眼看到出生实况,还有 4-D 电影,动手游戏等,趣味十足。Fair Oaks 农场是一个乡村休闲的好地方,有很多户外乐趣,食物和学习,在那里你可以探索家庭农场,重新与大自然、动物和我们的星球联系起来。Fair Oaks 农场不仅致力于教育公众关于现代农业的努力,而且还致力于保护环境,照顾动物和确保尽可能高质量的产品。2013 年增加了生猪饲养部分,从繁殖到育肥一体化。虽然是对外开放的观光企业,其主要收入仍来源于生产,生产流程和管理系统就是常规的大型畜牧农场体系。有关美国养猪的问题可以在这里得到解答。Fair Oaks 农场带来了减少,再利用和循环利用光源。整个设施使用牛粪和猪粪。他们通过厌氧消化器将农场的废物转化为能源,减少了牛奶和生产过程中对天然气和电力的依赖。2013 年,CNG 的使用将使他们的牛奶运输船/拖车使用的柴油减少 200 万加仑;这是 2011 年的使用量。谷仓和植物也由这种尖端的“便便动力”提供动力。

欢迎浏览网页查询详情：http://www.fofarms.com/en/visit_us#Scene_1

9. Tyner Pond Farm

<https://tynerpondfarm.com>

Tyner Pond Farm is located in Hancock County, Indiana. It is established in 2010 to feed people, not create profits. They raise cattle, chickens and pigs through rich pasture, dining on nature's salad bar and make their living as nature intended. Tyner Pond Farm also plays an important role in the local food movement.

有机天然农场 Tyner Pond Farm 位于印第安纳州汉考克郡。它成立于 2010 年,成立目的是为了养活人民,而不是创造利润。他们在肥沃的牧场上饲养牛、鸡和猪,在大自然的沙拉吧里吃饭,按照大自然的意愿生活。有机天然农场 Tyner Pond Farm 在当地的食品运动中也扮演着重要的角色。

10. Federal Reserve Bank

<https://www.chicagofed.org>

The Federal Reserve Bank of Chicago is one of 12 regional Reserve Banks across the United States that, together with the Board of Governors in Washington, D.C., serve as the central bank for the United States. The Chicago Fed serves the Seventh Federal Reserve District, an economically diverse region that includes all of Iowa and most of Illinois, Indiana, Michigan and Wisconsin. The Seventh District has a large national share of many important economic sectors. The Chicago Fed has a head office in Chicago and a branch office in Detroit.

芝加哥联邦储备银行(Federal Reserve Bank of Chicago)是美国 12 家地区性储备银行之一作为美国的中央银行。芝加哥联邦储备银行为第七联邦储备区提供服务。第七联邦储备区是一个经济多元化的地区，包括爱荷华州以及伊利诺伊州、印第安纳州、密歇根州和威斯康星州的大部分地区。第七区在许多重要的经济部门中占有很大的全国份额。芝加哥联邦储备银行在芝加哥设有总部，在底特律设有分行。

11.Chicago Chinatown

https://en.wikipedia.org/wiki/Chinatown,_Chicago

The Chinatown neighborhood in Chicago, Illinois, is on the South Side (located in the Armour Square community area), centered on Cermak and Wentworth Avenues, and is an example of an American Chinatown, or an ethnic-Chinese neighborhood. By the 2000 Census, Chicago Primary Metropolitan Statistical Area had 68,021 Chinese. The combined 60616 and 60608 zip codes in Chicago, as of the 2010 Census, were home to 22,380 people of Chinese descent. In addition, as of 2010, the Chicago-Joliet-Naperville IL-IN-WI metro area had 92,712 people of Chinese descent. Chicago is the second oldest settlement of Chinese in America after the Chinese fled persecution in California. The present Chicago Chinatown was formed around 1915, after settlers moved steadily south from near the Loop where the first enclaves were established in the 19th century.

芝加哥唐人街位于伊利诺斯州芝加哥市的唐人街社区南侧(位于阿默广场社区区)，以瑟马克大街和温特沃斯大街为中心，是美国唐人街或华裔社区的一个典范。到 2000 年人口普查时，芝加哥主要城市统计区有 68021 名中国人。在 2010 年的人口普查中，芝加哥 60616 和 60608 的邮政编码是 22,380 名华裔的家。芝加哥是继加利福尼亚华人逃离迫害后美国第二大华人聚居地。现在的芝加哥唐人街是 1915 年左右形成的，当时的定居者从 19 世纪第一个飞地环附近向南稳步迁移。芝加哥唐人街是美国东部规模最大、最繁荣的唐人街之一。最早的地点位于芝加哥盔甲广场 (Armour Square) 社区，以 Cermak Road 和 Wentworth 为中心。同时，在以西阿吉利街为中心的地区形成乐芝加哥新的唐人街。唐人街上不仅有中国各地菜系的餐厅和购物的地方，同时还有三个著名的标志性建筑：培德中心大楼、天下为公牌坊、九龙壁。这三个地标见证乐芝加哥唐人街的百年移民史和发展史。

附：芝加哥热门景点

1. Millennium Park 千禧公园

芝加哥千禧公园是坐落于美国芝加哥洛普区的一座大型公园，英文名为 Millennium Park，是密歇根湖湖畔重要的文化娱乐中心，含盖整个格兰特公园西北边 24.5 英亩 (99,148 平方米) 的土地。该地区曾经被伊利诺伊中央铁路 (Illinois Central Railroad) 当作停车场使用。截至 2009 年，千禧公园是全芝加哥人气第二高的旅游景点，仅次于海军码头。

2. Navy Pier 海军码头

密歇根湖岸向外延伸长达 1000 米的海军码头有着极高的人气。这里有摩天轮、旋转木马、电影院、剧院、大小餐厅和各种游船码头，甚至还拥有一个植物温室和一座儿童博物馆。夏日里会举办丰富多彩的活动，包括户外艺术展、每年一度的帆船节、还有最不能错过的盛大的烟火表演。

每年独立日的夜晚，码头上会挤满观看国庆烟火绽放的人群，十分热闹。海军码头夏季的常规烟火表演则会从退伍军人纪念日(Memorial Day)的周末开始直至 Labor Day 周末每周上演两次，分别为每周三的 21:30 和周六的 22:15。

3. Art Institute of Chicago 芝加哥艺术博物馆

芝加哥艺术博物馆修建于 1891 年，位于芝加哥市中心，密歇根湖湖畔，由三幢三层建筑联接而成。外观呈维多利亚风格，门前有两只巨大的青铜狮子，其中甚至有铁路从中穿过（是故在馆中游览时偶尔会听到火车轰鸣之声），其中大小展室、长廊上百个，收集展品极为丰富，以绘画，雕塑为主，辅有建筑，摄影、手工艺、纺织等，时间跨度由公元前 3000 年古埃及的古陶乃至当代的波普艺术，以希腊、罗马、欧洲、美国的艺术品为主，兼收印度、东南亚、中国、日、韩、非洲与美洲的艺术品，简直可以称为是万国博物馆。是美国三大博物馆之一。

这间全美顶尖的艺术博物馆更以收藏大量的印象派与后印象派大师的作品以及美国艺术品而闻名，例如莫奈、梵高、毕加索、雷诺、卡勒波特等超过 350 件大师的作品。同时也是美国前三大超现实主义作品收藏地之一。如果看到博物馆门前左右两侧的青铜石狮被披上了衣服一定不要觉得古怪，在芝加哥的冰球队和橄榄球队进入赛季决赛时，他们都会穿戴起球队的衣服或球帽为球队加油。

4. Willis Tower 威利斯大厦

威利斯大厦是美国芝加哥的一幢办公楼，由 SOM 建筑设计事务所设计，于 1974 年建成，总高度：442.3 米，地上 108 层，地下 3 层，共有 110 层，建筑面积为 416000 平方米，曾经是世界最高建筑物，目前已成为世界第九高摩天楼。尽管第一的美名已经不在，但却依然是芝加哥城市天际线中最不可忽视的高点。乘坐电梯 70 秒就可以到达 103 层的摩天台。远眺密歇根湖美景的同时，也不要忘记踩上全透明重达 5 吨的玻璃阳台向下俯视一下芝加哥的街道。站在 412 米高的全透明悬于空中的阳台上，惊险又刺激。

12. Mylet Farm

<http://www.buzzfile.com/business/Mylet-Farms-574-859-3603>

Mylet Farms is located in Camden, Indiana. This organization primarily operates in the General Farms, Primarily Crop business / industry within the Agricultural Production - Crops sector. This organization has been operating for approximately 47 years. Mylet Farms is estimated to generate \$407,627 in annual revenues, and employs approximately 8 people at this single location.

Mylet 农场位于印第安纳州的卡姆登。该组织主要经营一般农场，主要是农业生产部门的作物业务/工业。本组织已运作了大约 47 年。Mylet Farms 的年收入预计为 407,627 美元，在这个单一的地方雇佣了大约 8 个人。

13. Caterpillar

<https://www.caterpillar.com/en/company.html>

For more than 90 years, Caterpillar Inc. has been making sustainable progress possible and driving positive change on every continent. Customers turn to Caterpillar to help them develop infrastructure, energy and natural resource assets.

With 2017 sales and revenues of \$45.462 billion, Caterpillar is the world's leading manufacturer of construction and mining equipment, diesel and natural gas engines, industrial gas turbines and diesel-electric locomotives. The company principally operates through its three primary segments - Construction Industries, Resource Industries, and Energy & Transportation and provides financing and related services through its Financial Products segment.

90多年来，卡特彼勒公司(Caterpillar Inc.)一直在使可持续发展成为可能，并在每个大洲推动积极的变革。客户转向卡特彼勒，帮助他们开发基础设施、能源和自然资源资产。卡特彼勒2017年的销售额和营收为454.62亿美元，是全球领先的建筑和采矿设备、柴油和天然气发动机、工业燃气轮机和柴油电力机车制造商。公司主要通过建筑行业、资源行业、能源交通三大板块开展业务，并通过金融产品板块提供融资及相关服务。

14. RDM Shrimp

<https://rdmshrimp.com/>

RDM Aquaculture was started on July 13, 2010 when it received its first batch of post larval shrimp (PLS). It was the 3rd privately owned shrimp farm in the country. Starting with just six production and two nursery tanks, it began with 40% survival rates. RDM shrimps are grown in tanks closely resembling their natural environment, but without all of the toxins found in the ocean. To safely maintain the tanks, RDM uses an all-natural bacteria based system that eliminates the need for chemicals, and keeps its shrimp happy and healthy without antibiotics or hormones.

RDM 水产养殖于 2010 年 7 月 13 日开始，当时它收到了第一批虾仔。这是美国第三家私营虾场。刚开始只有 6 个生产箱和 2 个育苗箱，存活率只有 40%。RDM 虾生长在与其自然环境非常相似的容器中，但没有海洋中发现的所有毒素。为了安全的维护水箱，RDM 使用了一种纯天然的细菌为基础的系统，消除了对化学品的需要，并保持虾快乐和健康，没有抗生素或激素。

15. Farm Credit Service

<https://farmercredit.com/>

Farm Credit is a nationwide network of 73 customer-owned financial institutions that provides loans and related financial services to U.S. farmers and ranchers, farmer-owned cooperatives and other agribusinesses, rural homebuyers and rural infrastructure providers. Farm Credit supports rural communities and agriculture with reliable, consistent credit and financial services, today and tomorrow.

农业信贷行是一个由 73 家客户拥有的金融机构组成的全国性网络，向美国农民和牧场主、农民拥有的合作社和其他农业综合企业、农村购房者和农村基础设施提供商提供贷款和相关金融服务。农业信贷为农村社区和农业提供可靠、持续的信贷和金融服务，无论是今天还是明天。

16. Indiana Historical Society

<https://indianahistory.org>

The Indiana Historical Society is one of the United States' oldest and largest historical societies and describes itself as "Indiana's Storyteller." Housed within the Eugene and Marilyn Glick Indiana History Center, it is located at 450 West Ohio St. in Indianapolis, Indiana, in The Canal and White River State Park Cultural District with neighbors such as the Indiana State Museum and the Eiteljorg Museum of American Indians and Western Art. The Indiana Historical Society is the oldest state historical society west of the Allegheny Mountains.

印第安纳历史学会是美国最古老、规模最大的历史学会之一，自称是“印第安纳的说书人”。它位于印第安纳波利斯西俄亥俄街 450 号，位于运河和白河州立公园文化区，与印第安纳州立博物馆、印第安人与西部艺术艾特尔约格博物馆等相邻。印第安纳历史学会是阿勒格尼山脉以西最古老的州历史学会。

17. Purdue University Discovery Park Incubator

<https://www.purdue.edu/discoverypark/>

Discovery Park at Purdue University is a place where challenge and innovation converge, a hub where researchers move beyond traditional boundaries, collaborating across disciplines and with policy makers and business leaders to create solutions for a better world. Nestled on 40 acres on the southwest edge of Purdue's West Lafayette campus, our complex of facilities provides open, collaborative research environments where interdisciplinary projects are connected throughout Purdue, Purdue Research Park and the world. Such most advanced facilities and equipment makes it possible for the world top scientists to do research at the forefront of human knowledge and technologies. Guided tours for Birck Nanotechnology Center, Bindley Bioscience Center, and Nano ice cream demonstration are eye opening and fun activities.