Career Pipelines for Energy Efficiency

Thursday, July 11, 2019
9:00-10:30 AM
Panelists

- Chris Castro, City of Orlando, FL
- Christos Chrysiliou, L.A. Unified School District
- Sarah Zaleski, U.S. Department of Energy
Chris Castro
City of Orlando
ORLANDO: RENEWABLE & RESILIENT

Chris Castro, LEED GA, CPB
Director of Sustainability & Resilience
City of Orlando
Environment  Resiliency

Economy  Equity
Florida by the Numbers

Florida Energy Efficiency Jobs in America

Total Jobs: 112,620

What are EE Jobs?
Delivery of goods and services that lower energy use by improving technologies, appliances, buildings, and energy systems.

Jobs by Sector
- ENERGY STAR Appliances & Efficient Lighting
- HVAC*
- Building Materials & Insulation
- Other**

In Florida, EE Jobs Comprise:
- 17% of All Construction Jobs
- 35% of All Energy Sector Jobs

Firms by Supply Chain
- Construction & Repairs
- Manufacturing
- Sales & Distribution
- Professional Services*
- Other**

*Professional services includes finance/accounting, architecture, engineering, R&D, etc.
**Other such as maintenance, and training and support organizations

Presented by:
E4THEFUTURE
E2
Good for the Economy. Good for the Environment.
Energy Specialist Training Program

- Provided 4-week training for 30 students at the University of Central Florida
- Performed ESPM benchmarks for UCF buildings + 5 private buildings
- Students deployed as “Energy Specialist” for the participating buildings
- Students received education stipend following the BOTB
Energy Management & Controls Technology (EMCT)

New AS degree offered at Valencia College

- 60 credit hour degree
- Teaches students how to manage and control a building’s electrical and mechanical systems efficiently, using a broad range of current and emerging technologies.
- Proficiency in building science and base building systems. Eg. HVAC/R commercial systems, control theory, logic and programming, as well as installation, system design and integration.
- Trained in building automation industry as skilled technicians capable of designing, installing, servicing, and troubleshooting commercial control systems
- Direct Connect to UCF Engineering School
UCF Energy Programs

- **FSEC** (Florida Solar Energy Center)
- **RISES** (Resilient, Intelligent and Sustainable Energy Systems) cluster
- **FEEDER** (*Foundations for Engineering Education for Distributed Energy Resources*) center
- **FUTURE CITY** Cluster
- Digital Grid Laboratory
Christos Chrysiliou
Los Angeles Unified School District
School Sustainability and STEAM Programs

Career Pipelines for Energy Efficiency

Christos Chrysiliou, AIA, CCM, LEED AP BD+C
Director of Architecture and Engineering Services
LAUSD M&O Branch – Sustainability Initiatives Unit
June 2019
Overview

**Mission**
LAUSD’s Sustainability Initiatives mission is to be the most sustainable school district in the nation.

**Goals**
- 20% Energy Intensity Reduction by 2024
- 20% Water Consumption Reduction by 2024
- Support High Performance Design
- Support Education and Awareness Programs
- Support Campus Ecology Programs
- Identify, Evaluate and Implement Emerging Technologies

**Partnerships / Sustainability Focus Areas**
- Energy Conservation
- Water Stewardship
- Campus Ecology
- Emerging Technologies
- High Performance Schools
- Awareness & Outreach

**STEAM-Related Programs**
- HEROES for Zero
- LAUSD emPowered
- Micro-Credentialing Program partnership
- Prop 39 SEAT Program
- SEEDS

**Motivation**
- 660,000+ students (K-12)
- 60,000 employees
- 710 square miles of site boundaries
- 6,657 acres of land
- 13,500 buildings
- 1,200 schools and educational facilities

**Sustainability Career Pathways**
- Architecture
- Engineering
- Energy
- Sustainability
- Education
STEAM-Related Programs

Complementing the District's core educational mission by identifying opportunities for education, training, and community engagement as we implement each of our initiatives.

- Raise awareness of environmental stewardship
- Develop partnerships
- Link projects with learning & workforce development
- Encourage and celebrate school-based sustainability efforts

Website/Social Media
- DROPS
- Save the Drop
- Prop 39 SEAT Training
- Heroes for Zero
- LAUSD emPowered
- Eco-Garden

LAUSD Sustainability Initiatives
All *ideas* begin with a vision/visual image (a mental picture → drawing).

All *engineering* begins with a design (→ diagram is a graphic representation of the initial idea).
STEAM-Related Programs

Heroes for Zero

ZNE Formula:
EE + RE = ZE

Our Focus:
- Applying EE measures and avoiding waste
- Reducing waste through energy education & awareness
- Using technology to understand the facility
- Collaboration for greater efficiency

Learn more about Heroes for Zero:
http://learninggreen.laschools.org/heroes-for-zero-contest.html

LAUSD Sustainability Initiatives
STEAM-Related Programs

**ELEMENTS:**

- **H** — Demonstrate how ZNE can also lead to a healthier space or community
- **E** — Tie in Curriculum Module/Awareness Program
- **R** — Work with Subject Matter Partner or Community-Based Organization
- **O** — Conduct a school energy audit & develop an efficiency plan
- **E** — Develop & implement a strategy to reduce consumption
- **S** — Mentor another school, group, or neighborhood about ZNE

LAUSD Sustainability Initiatives
LAUSD emPowered

- The District is collaborating with the Alliance to Save Energy to pilot an online team-based interactive energy education program called LAUSD emPowered.
- Integrate energy topics into STEAM using buildings as learning laboratories
- Engage students as advocates for energy efficiency in their homes and communities
- Build pathways to green jobs
- Save energy and lower school energy costs
- A total of 40 schools will participate in the pilot, which begins in the 2018/19 school year

Learn more about LAUSD emPowered:
Micro-Credentialing Program Partnership

- In collaboration with Sustainability Initiative Unit’s STEAM-related programs to raise further sustainability awareness throughout the District
- Engaging students and working with the Division of Instruction
- Digital badges provide a practical means in supporting educator growth with the current tools needed to serve students and prepare them for successful futures.

Learn more about the Micro-Credentialing Program: https://achieve.lausd.net/Page/15047
Prop 39 SEAT Program

**Student Energy Audit Training**

- Provide applied skills training that will familiarize and prepare youth to enter into the expanding energy management industry.
- Students will learn and gain skills on:
  - inspecting and surveying building energy systems
  - evaluating appropriate energy conservation measures
  - the importance of conserving natural resources
  - resume writing
  - interviewing techniques
  - workplace etiquette
  - professionalism

*Learn more about the SEAT Program:*
http://learninggreen.laschools.org/student-energy-audit-training-seat.html
SEEDS Program
*Sustainable Environment Enhancement Development for Schools*

- Helps create or improve existing school greening projects that directly support school curriculum.
- Encourage outdoor learning, focusing on the role of gardens in providing not only education, but access to food while building resilience among students.
- Introduction to biomimicry

Learn more about the SEEDS Program: https://www.laschools.org/new-site/seeds/
Sustainability Career Pathways

**Engineering**
- Geophysical Engineer
- Nuclear Engineer
- Solar Engineer
- Water Resource Engineer
- Wind Energy Engineer
- Chemical Engineer
- Petroleum Engineer
- Environmental Engineer

**Energy**
- Energy Manager
- Lighting Specialist
- Building Energy Auditor
- Commissioning Agent

**Sustainability**
- Director of Sustainability
- Sustainability Program Coordinator
- Sustainability Consultant/Specialist
- Air Quality Forecaster
- Watershed Manager
- Environmental/Conservation Scientist
- Hydrologist
- Environmental Field Technician
- Climate Change Analyst

**Architecture**
- Green Building Architect
- Landscape Architect
- Zoning
- Site Analysis and Conservation

**Education / Instruction**
- Awareness & Outreach Programs Coordinator
- Environmental Public Relations Specialist
- Ecotourism Guide
- Environmental Educator
“One planet. One ecosystem. Together, we can be ‘eco-stewards,’ as we continue to be inspired by our youth’s eagerness for a brighter, more sustainable future.”

Christos Chrysiliou,
LAUSD Director of Architecture & Engineering Services
2018 Best of Green Schools Ambassador
Please visit our website for more information and support materials

Thank you!

Website: learninggreen.laschools.org
Contact us by email: learninggreen@lausd.net
Telephone: (213) 241-1000
Thank You

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