



# The newsletter of the National Career Pathways Network Connections

Vol. 26, No. 1: *Steady Progress in Career Pathways SYSTEMS*

## **From the Director . . .**

*Debbie Mills, Director, NCPN (dmills@cord.org)*



**Happy New Year!** Another year of hard work and making progress on the development of Career Pathways SYSTEMS across our great nation. The operative word there is *SYSTEM*: **1)** a set of connected things or parts forming a complex whole, in particular; **2)** a set of principles or procedures according to which something is done; an organized scheme or method.

Most of us work from a specific subset of a Career Pathways system . . . either an entrance point (Adult Career Pathways versus traditional high school students transitioning to postsecondary education/training) or perhaps a component (career counseling versus teaching in the classroom). It is important in this new year (2016) for all to begin to recognize and understand all the parts that form the complex system of Career Pathways. To help the field, the National Career Pathways Network will focus on all the parts that make the system during this next year.

**system**

*noun*  
sys · tem  
'sis-təm

## **Starting on a Career Pathway While in High School? Why Not?**

*Ann Westrich, Education Director, Career Prep, Career Transitions and Transfer, Wisconsin Technical College System*



Over 27,000 students last year in Wisconsin earned college credit while in high school. These students were part of a dual enrollment program that allowed them to gain high school credit as well as college credit and offered them the chance to experience the rigor of college-level curricula.

Today's high school students are looking to gain more value from their traditional high school experience, and college credit is one of those values. Students in high school are able to choose career areas of interest and in many cases start gaining college credit within their chosen career pathways. One example in Wisconsin is in the Health Career Cluster. Students are not only graduating from high school, but they are leaving

with a three-credit Certified Nursing Assistant (CNA) credential, as well as a three-credit Medical Terminology course and a two-credit Health Careers course. These eight credits are the first eight of a 12-credit pathway certificate. This certificate will lead to an entry-level health-related job, or will be the stepping stone to a one-year technical diploma in the health area offering a full-time, wage-sustaining job.

The sense of success and accomplishment these students are gaining is priceless. Many of these students come directly to one of Wisconsin’s sixteen technical colleges with credits already earned. They are engaged in the career area, have an understanding of what to expect, and know what they want and where they are headed.

The following list below shows the number of students enrolled, courses taken, and credits earned in the five dual enrollment areas in the sixteen technical colleges: 118.15 Compulsory Education, Youth Options, Transcribed Credit, Youth Apprenticeship, and 38.14 Contracts. (The numbers “118.15” and “38.14” refer to sections of the Wisconsin state code governing the relevant course offerings. The colleges are Blackhawk Technical College, Chippewa Valley Technical College, Fox Valley Technical College, Lakeshore Technical College, Mid-State Technical College, Milwaukee Area Technical College, Moraine Park Technical College, Nicolet Area Technical College, Northcentral Technical College, Northeast Wisconsin Technical College, and Southwest Wisconsin Technical College.)

1. 118.15 Compulsory Education: 971 students took 8690 courses and earned 9973 credits.
2. Youth Options: 2447 students took 4227 courses and earned 11,796 credits.
3. Transcribed Credit: 22,472 students took 29,785 courses and earned 77,907 credits.
4. Youth Apprenticeship: 279 students took 484 courses and earned 1167 credits.
5. 38.14 Contracts: 2880 students took 3980 courses and earned 10,913 credits.

Health is not the only area. To the right is a visual representation of high school dual credit opportunities offered through Moraine Park Technical College (MPTC), and how those courses lead to MPTC programs of study and employment and transfer opportunities.

## MPTC Hospitality and Tourism Career Cluster

### Dual-Credit Opportunities

Culinary Principles (3 Cr) • Safety and Sterilization (2 Cr) • Baking (3 Cr) • Food Production–Salads (2 Cr) • Food Production–Meats (2 Cr) • Computer Literacy (1 Cr) • College Math (3 Cr) • English Comp 1 (3 Cr) • Oral/Interpersonal Communication (3 Cr)

*\$125 Cost Per Credit*

*\$100 Average Textbook Cost*

### MPTC Hospitality and Tourism Programs of Study

Culinary Arts (Assoc Degree) • Food Service Production (Technical Diploma) • Hotel/ Hospitality Mgt (Shared-Assoc Degree)

*Average starting wage 2012–2013 for MPTC graduates: \$16 per hour*

### Employment

Chef • Assist Cook • Dietary Aide • Sous Chef • Food Service Sales Associate • Purchasing Agent • Food and Bev Manager

### Transfer Opportunities

UW-Stout/Oshkosh/Green Bay • Marian U

I am sure you are asking yourself how to begin. Listed below are some simple steps:

- Start small. Add in one college course at multiple high schools in your area.
- Engage partners. If you know what industry wants, creating the pathway will be easier.
- Don't be afraid to try new things. Change is never easy but can be successful.
- "Pilot" at first if need be. You can always change things up!
- Gather the data. It's always good to see the results.
- Keep building. It will be worth it in the long run.

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## ***The #1 Failed Math Class in America and What Educators Can Do***

*Scott Burke, Geometry in Construction, Algebra 1 in Manufacturing Processes, Entrepreneurship, and Design (AMPED), Loveland High School, Fort Collins, Colorado*



If your students struggle with algebra, you are not alone. Algebra is the #1 failed math class in the United States. As full-time math and CTE teachers, my colleagues and I were tired of watching students struggle through the same old math instruction, so we decided to take matters into our own hands. At Loveland High School we developed **AMPED, Algebra 1 in Manufacturing Processes, Entrepreneurship and Design**

([www.ampedalgebra.com](http://www.ampedalgebra.com)), a rigorous algebra 1 course taught through relevant project-based applications and curriculum.

AMPED students develop entrepreneurial skills by managing all facets of a business that produces and sells t-shirts and manufactures other products for the community. This business venture includes designing, marketing, selling, producing, and distributing t-shirts to corporate, non-profit, and educational entities. Since its launch in the fall 2015 semester, the AMPED program has produced over 16,000 shirts. In addition to t-shirts, AMPED students design and manufacture board games, skate boards, banners, and phone covers. Since algebra concepts are infused throughout every project, AMPED teachers never hear the age-old math classroom question: "When am I ever going to need to know this?"



One example of an AMPED activity contextualizes manufacturing processes and business standards with common core level algebra 1 by teaching students about quadratics and the law of diminishing returns. The activity is called Nutterflutters. The goal of Nutterflutters is for

students to simulate a factory that has the ability to add workers but cannot add capital resources. Students create a product called “Nutterflutters” in the class. Nutterflutters are a cookie sandwich made of graham crackers, peanut butter, and marshmallow cream. The production process is analyzed mathematically as students increase production with the addition of workers. This lab has proven to be extremely fun and powerful for all classes. Here is a link to get the entire lesson plan for this lab: <http://www.contextualc.com/downloads/>

Teachers and students are amped about AMPED. Enthusiasm and attendance rates have all increased while discipline issues are at an all-time low. Students learn how to use and apply algebraic concepts while running a business and creating artifacts they can use every day. If you are an educator looking to redesign the most failed math class in America, we invite you to learn more about how to incorporate AMPED activities in your classroom!

For a complete sample unit from AMPED, visit our website at [www.contextualc.com](http://www.contextualc.com).

For more information, contact the author at [scott.burke@thompsonschoools.org](mailto:scott.burke@thompsonschoools.org).

## ***Pike High School’s “Speed Mentoring” Program***

*Jeanette Crow, Workforce Liaison, Pike High School, Indianapolis, Indiana*



Pike High School has partnered with two local businesses that mentor students in Health Science, Engineering, IT, and Science pathways. Mentors from these two organizations come to the high school to meet with juniors in the YCC Program during academic advising periods scheduled throughout the semester. Students meet with their mentors to discuss networking, leadership skills, résumé writing, and employability (soft) skills. To meet the requirements of the grant, one-on-one mentoring takes place in two 30-minute sessions. Two students rotate with their mentors between sessions. The concept is similar to speed dating, but the mentors meet with the students to help them develop good communication skills while building professional relationships with people in STEM industry.

One company, 3M Aearo Technologies, manufactures the widest selection of materials and products for cushioning and for controlling noise, vibration, and shock. They provide mentors who represent all areas of the company to share their backgrounds and leadership abilities with the students. Students meet with electrical and manufacturing engineers, supply chain analysts, research and development engineers, and even business and marketing professionals. One student stated, “I like being able to talk to someone who is actually working in a career that I am interested in doing.” The mentees were able to take a tour of the company to see where their mentors work and to learn more about the company. The students heard from engineers, manufacturing and human resources personnel, and research and development team leaders. At the end of the tour, students asked questions about what colleges they should attend and what it takes to work at that company.



Another company, Sigma Tau Pharmasource, manufactures parenteral drugs for cancer patients. Mentors from Sigma Tau are microbiologists, chemists, process engineers, quality assurance personnel, and quality control analysts. Students enrolled in the second course of PLTW Biomedical Science classes meet with mentors who work at this company. They learn about all the different careers in the pharmaceutical industry. Sigma Tau Pharmasource has also opened its doors

for seven field trips to over 140 students in the first-level PLTW Biomedical Science course, Principles of Biomedical Science. They were able to tour the facility's manufacturing area, chemistry lab, and microbiology lab. At the conclusion of the tour, the students were provided with pizza lunches and time to interact with employees.

The Speed Mentoring program is continually growing as new mentors sign on once they hear about the program from their coworkers. The program is designed to impact the most students while respecting the valuable time of the professional mentors. The mentors enjoy sharing their experiences to help students, and the students truly appreciate meeting professionals in careers that they are interested in pursuing. This gives them a real-world look at careers and industries in STEM. One mentor said, "I have never had anyone listen so intently to anything I have had to say before this program!"

For more information, contact the author at [jscraw@pike.k12.in.us](mailto:jscraw@pike.k12.in.us).

## ***How Collaboration and Networking Mean You Will Never Go to an Interview—but Are Always Being Interviewed***

**Brady Sanders**, Choreographer, Dancer, Teacher, Pittsburgh, Pennsylvania

**Roger Sanders**, Director of Valley Education for Employment System, Illinois



In a world that's asking, "What have you done for me lately?" collaboration, networking, and performance-based hiring dramatically impact your next employment opportunity. With nearly half the workforce employed as contingent workers, there is increased competition to skillfully collaborate and create a portfolio of deliverables

at an innovative and masterful level (<https://www.mbopartners.com/state-of-independence>).

Consider the "how," the "what," and the "who."

**How:** Collaboration—the process behind the product, a living portfolio and ongoing interview

**What:** Innovation—creative ideas that have value and generate a portfolio of high-level work

**Who:** Networking—direct and indirect connections bridging you to the next opportunity

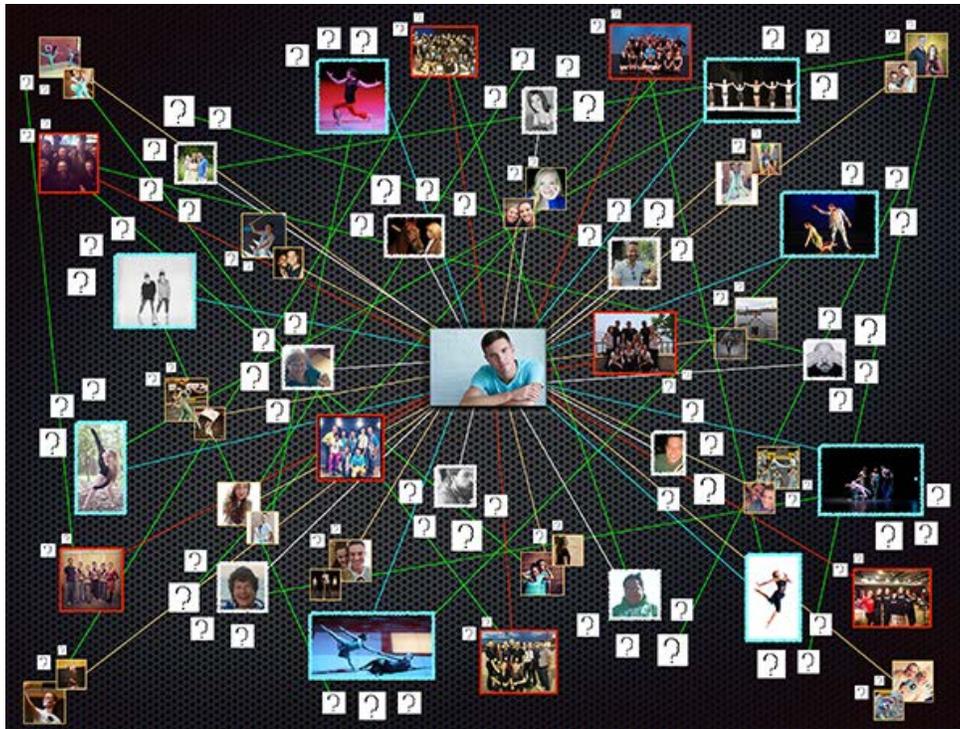
## Building a Portfolio and Network Connecting You to the Next Opportunity

- **Product and Process Portfolio:** You are continually engaged in an ongoing interview where your work and your process to develop work are constantly evaluated. In an age where collaboration and innovation are central to success, the process and the product are equally important. Finding commonalities and building upon varied perspectives fosters an environment of plussing ideas rather than evaluating or “fixing” them. A collaborative process that generates shared experiences and respect for others’ ideas promotes innovation and creates a living portfolio that clients see as essential.
- **Networking:** Your personal and professional networks are more crucial than ever before and increasingly intertwined. Analyzing your various roles is helpful in visualizing the interconnectedness of the people in your networks. An activity that focuses on this concept is to list the roles you assume, then quantify them. For example, in my role as:
  - *Student*, 25 teachers and mentors have invested in me;
  - *Performer*, 30 choreographers and 500 performers have worked with me;
  - *Teacher*, 2000 students have been in my classes;
  - *Choreographer*, 25 groups have engaged me to choreograph 65 works;
  - *Artistic director*, 30 performers have been members of my ensemble;
  - *Designer*, 40 designers have collaborated with me; and
  - *Volunteer*, 15 non-profits and over 50 volunteers are part of my service network.

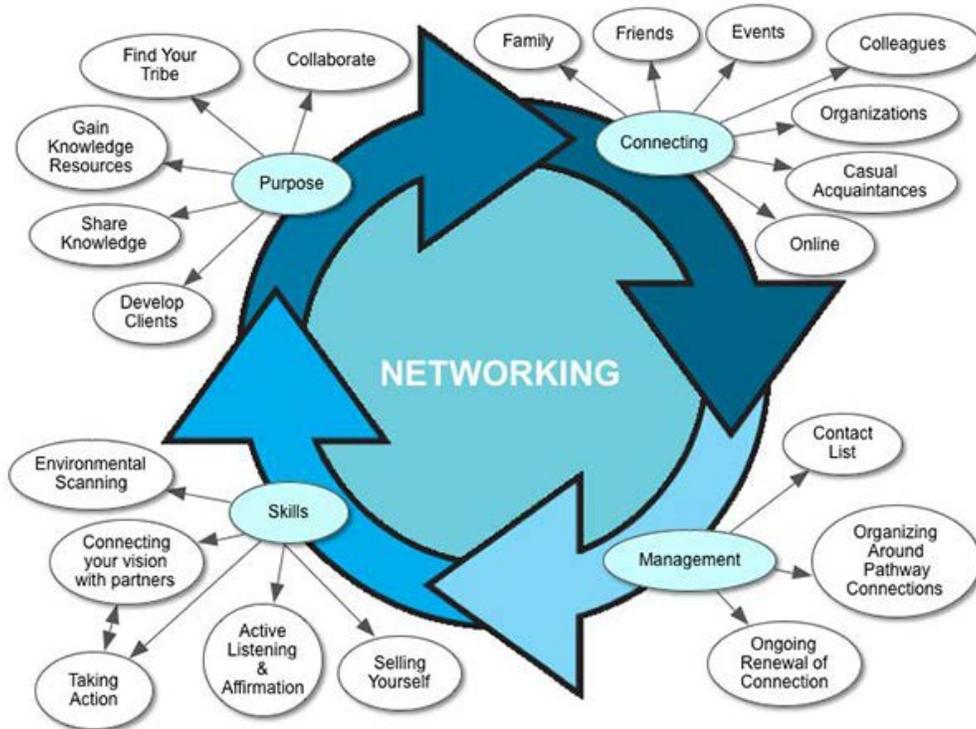
These people have their own networks, which I can become a part of. An interesting activity is to map your network (Figure 1). The mapping process helps visualize your network and see the interconnectedness across networks. Understanding networking as a systematic process allows you to develop your network (Figure 2). Networking is a skill that can be learned and empowers you to maximize your potential to create the next opportunity.

Today’s contingent work is much more demanding and competitive than a traditional employment arrangement. There is a significant paradigm shift that educators and students must make to adapt to this new reality:

- The “interview” has transformed into collaboration as an ongoing interview.
- A living portfolio of shared experiences conveys that the process drives the product.
- You must always be ready to connect with the next opportunity.



**Figure 1:** Creating a web of your network helps visualize the power of connections.



**Figure 2:** Use this networking model to strategically empower your network.

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## ***CORD's Experience in the Dominican Republic: An Update***

*Agustin Navarra, VP International, Center for Occupational Research and Development (CORD)*



Today's global knowledge economy is challenging countries around the world to increase their productivity. Recent economic developments and free trade agreements, such as the Dominican Republic–Central American Free Trade Agreement (DR–CAFTA), are placing more pressure than ever on Central American and Caribbean nations to improve their workforces.

With these urgencies in mind, and the conviction that education is the key to boosting economic competitiveness, in mid-2006 a group of business pioneers from the Dominican Republic (DR) led by **Pedro Esteva**, CEO of Implementos y Maquinarias (IMCA), Caterpillar's distributor in the DR and Jamaica, contacted CORD (the parent organization of NCPN). Mr. Esteva and like-minded business leaders were having difficulty finding qualified technicians. They had been referred to CORD by the Pan American Development Foundation (PADF), an independent nonprofit organization that creates public-private partnerships designed to assist disadvantaged people in Latin America and the Caribbean.

CORD found that students in the DR were learning traditional academic subjects but not employability skills such as decision making, problem solving, and critical thinking.

A change was needed. What resulted was a comprehensive plan designed to produce a pool of well-qualified technicians by using CORD's educational model to improve curriculum and teaching practices under the umbrella of school-business collaboration.

The plan consisted of three main elements:

1. Improving curriculum and programs of study,
2. Providing professional development for teachers using the REACT teaching strategy, and
3. Generating school-business partnerships by improving relationships between educators and employers.

The plan was designed to make changes incrementally, beginning with one school, one technical specialty, and one grade level at a time over a multi-year period. The Instituto Politécnico Loyola (IPL), a public secondary/postsecondary school, was chosen to be the pilot



*Pedro Esteva (2nd from left), President and CEO of IMCA, was recognized for "Educational Projects with Impact" by the American Chamber of Commerce in the Dominican Republic.*

school. The first stage of the plan placed emphasis on modernizing the high school curriculum and training mathematics and science teachers to teaching contextually using the REACT methodology. (Visit [http://www.cordonline.net/connections/25\\_1/25\\_1\\_navarra.htm](http://www.cordonline.net/connections/25_1/25_1_navarra.htm) and [http://www.cordonline.net/connections/25\\_3/25\\_3\\_international.htm](http://www.cordonline.net/connections/25_3/25_3_international.htm) for more information on CORD's educational model.) The second stage (in progress) is preparing students in internal combustion technology. This process will expand over time to include more specialties and more schools.

Up-to-date results of the program at IPL include the following:

- More than 1000 graduates have completed the four-year high school program.
- Program graduates have performed well on national tests (around 90 percent passing rate for IPL students compared to a significantly lower national average).
- Teachers have participated in 12,000 man-hours of professional development.
- The average training period for graduates as new hires in industry has been reduced from 18 months to 3 months.
- More than 50 percent of graduates were offered jobs when they left high school.
- After first focusing on improvement in math and science courses, the project is now applying the CORD contextual teaching strategy to language and social sciences courses. (This began at the end of 2014).

Promising developments include the following:

1. In 2015, under Pedro Esteva's IMCA sponsorship, CORD initiated development of a groundbreaking new type of curriculum and pedagogy that, while focusing primarily on the diesel specialty, will incorporate concepts from other disciplines such as math, science, and language arts. This interdisciplinary aspect is consistent with the REACT contextual teaching strategy, which is based on the premise that academic subjects do not exist in isolation but are interrelated. By the end of 2017, IPL will have a modern, industry-enriched curriculum and a cadre of teachers who are trained to use the REACT strategy. Because that cadre will represent a broad range of disciplines, all students at IPL will benefit, not just the students in the diesel specialty.
2. The nine-year-old CORD-IPL-IMCA partnership is reaching a new plateau in educational improvement. IPL's enhanced competitive edge is transforming the school into a national model of excellence via application of the "shared value" concept (Porter and Kramer, 2006 [<http://www.hbs.edu/faculty/Pages/item.aspx?num=23102>]). This is providing an example that other economic sectors can follow.
3. The CORD-IPL-IMCA initiative is also opening doors to the academic world. Barua Business School, one of the best college-level institutions in the DR, adopted the business-education partnership process sponsored by Pedro Esteva and developed by

CORD. Barna converted the process into a business case for its management course students. The Barna case was analyzed at the October 2015 NCPN conference in Dallas by more than 40 U.S. education and business representatives interested in learning the “nuts and bolts” of successful business-education partnerships. Along with Mr. Esteva, representatives of Boeing and Embraer served on a panel of experts.

Pedro Esteva’s visionary work is giving IPL a new competitive edge and leading the way so that companies from other economic sectors in the DR and further afield can follow suit.

What does the future hold? Pedro Esteva’s vision has positioned IPL to be a national model in improving education in the DR. CORD is planning to work with IPL on an array of new ideas about education, proposing a flexible, multidisciplinary model that is adaptable to 21st-century conditions. Awareness of developments in technology and attention to permanent changes in the workplace—along with careful consideration of how people learn—are built into the DNA of CORD’s curriculum and pedagogical work.

For more information, contact the author at [anavarra@cord.org](mailto:anavarra@cord.org).

## ***Bits ‘n’ Pieces***

*Items of interest to our members and affiliates ...*



### **Medical Academy Video**

Students at Gladstone High School in Covina, California, are hard at work learning everything they can about the medical field. It’s a four-year medical academy that gives students hands-on experience. They learn everything from drawing blood to taking vital signs and giving electrocardiogram exams. Gladstone High was awarded the Youth Career Connect Grant to establish the medical academy. Students who complete the four-year academy have medical certificates when they graduate high school. For more information, watch the video at <http://www.foxla.com/news/7645730-story>.

### **Every Student Succeeds Act (ESSA)**

On December 10, 2015, President Obama signed into law the Every Student Succeeds Act (ESSA), a bipartisan bill designed to revise and replace No Child Left Behind. This new law delivers a desperately needed fix to our schools. It reduces dependence on standardized tests and one-size-fits-all mandates, ensures that our education system will prepare every child to graduate from high school ready for college and careers, and provides more children access to high-quality state preschool programs. Download the progress report here: [https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/ESSA\\_Progress\\_Report.pdf](https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/ESSA_Progress_Report.pdf)

## Work-Based Learning for Under 18 Years

Employers interested in working with young people are often concerned about barriers that may limit access to workplaces, such as labor laws and liability issues. The 2015 brief titled *Not As Hard As You Think: Engaging High School Students in Workbased Learning* (Jobs for the Future and the Pathways to Prosperity Project at Harvard Graduate School of Education) is intended to allay concerns about perceived barriers to young people's access to workplaces and to highlight the successes of employers who have opened their doors to high school students. Go here to download the brief: <http://www.jff.org/sites/default/files/publications/materials/Not-as-Hard-as-You-Think-042915.pdf>

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**NCPN Members**—Don't forget all the free resources available to NCPN members at [www.ncpn.info](http://www.ncpn.info).

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**Questions about *Connections*?** Contact: Mark Whitney, NCPN, P.O. Box 21689, Waco, TX 76702-1689; 254-741-8315; or [mwhitney@cord.org](mailto:mwhitney@cord.org). Visit NCPN on the web at [www.ncpn.info](http://www.ncpn.info).

**NCPN** **Indy 2016!** *Building Your Career Pathways SYSTEM*

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